សន្និសីទវេជ្ជសាស្ត្រអន្តរជាតិ លើកទី៥

ចូរបង្ហាញវេជ្ជសាស្ត្ររបស់អ្នក

THE 5th INTERNATIONAL MEDICAL CONFERENCE

Unveil Your Medical Innovation

PROGRAM, ABSTRACTS

AND

PROCEEDINGS

14th – 15th December 2018

President Message

It's a great pleasure to host the **5th International Medical Conference** at International University, during its 16th Anniversary Celebration. The Medical Conference has brought together an eclectic group of speakers making the conference an effective one. My sincere thanks for all the speakers and the participants from International countries and from Cambodia helped us to make this conference a fruitful one.

The goal is to bring together, a multi-disciplinary group of scientists, doctors and researchers from all over the world to present and exchange break-through ideas relating to the health sciences. It promotes top level research and to globalize the quality research in general, thus making discussions, presentations more internationally competitive and focusing attention on the recent outstanding achievements in the field of medicine, pharmacy, dentistry, nursing science, and other related fields, and future trends and needs.

The conference shares an insight into the recent research and cutting edge innovations, which gains immense interest with the colossal and exuberant presence of adepts, young and brilliant researchers, delegates and talented student communities.

And finally I would like to convey my appreciation to the organizing committee of 5th International Medical Conference to make this event a successful one.

And also invite the delegates to participate in the **6th International Medical Conference** which will be held on **December 13 and 14, 2019** at our premise.

I wish you all a successful in all your endeavors.

Best Regards,

H.E. Prof. Sabo Ojano, MD, PhD
President, International University and SSIUH
Chairman, Organizing Committee

Organizing Committee

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Program Schedules

Day 1

December 14, 2018

Starting Time: 7:30am until 5:00pm, at 9th Floor Conference Hall

Time	Activities
	Opening Session
07:30	Registration of participants
08:30	Arrival of the speakers and guests
08:50	Honorable chief guest arrives
08:55	National anthems
09:00	**Welcome address by H.E Prof. Dr. Sabo Ojano,** President of International University and Sen Sok IU Hospital Chairman of the International Medical Conference Organizing Committee
09:15	**Opening speech by Hon. H.E Prof. Thir Kruy, Secretary of State, Ministry of Health, RGC**
9:45	*Coffee break*

CONFERENCE			
Time	Topics	Speakers	Moderators
10:00am	***Kidney Support of Pulmonary Edema (ESRD) in ICU***	**Assoc .Prof . CHAN SOVANDY,** Deputy Director of ICU , Emergency , Anesthesia	**Dr. Ashish Garg BLK Hospital & Prof. Sieng Rithy, IU**
10:20am	***Q.A Session***		
10:30am	***The Quality of Data towards Improving Medical Science in Cambodia***	**Prof. Dr. Hor Bunleng.,** Head Department of Public Health, International University	
10:50am	***Q.A Session***		
11:00am	***Determinants of Children under Five Mortality in Cambodia (2010 – 2014)***	**Assoc. Prof. Vanthy LY**, Research Scholar, International University	
11:20am	***Q. A Session***		
11:30am	***Maternal Knowledge and Practice on HIV-Exposed Infants in Cambodia***	**Ms. Kunthea SOCH,** Research Scholar, International University	

11:50am	***Q.A Session***		
12:00pm	***LUNCH BREAK***		
AFTERNOON SESSION			
1:45pm	***Update to Treatment Hepatitis-C***	**Dr Ashish Garg**, MD, Associate Consultant Gastroenterology & Hepatology, BLK Super Specialty Hospital, New Delhi	**Prof. Dr. Chhin Senya** & **Dr. Ramesh Kannan**
2:05pm	*Q.A Session*		
2:15pm	***Therapy and Prevention of Complications of Malignant Tumors***	**Dr. Tatiana Turobova ,** Medical Oncologist, SSIUH, Cambodia	
2:35pm	*Q.A Session*		
2:45pm	***Coffee Break***		
3:00pm	***Overview of Renal Transplant***	**Dr. (Lt.Col.) Aditya Pradhan,** Sr. Urology and Renal Transplantation, BLK Super Specialty Hospital, New Delhi	**Prof. Dr. Oum Sokhom** & **Dr. Ramesh Kannan**
3:20pm	*Q.A Session*		
3.30pm	***Difficulty in Diagnosis of Nasopharyngeal Pathology from Adults and Children***	**Dr. Ivan Matela**, PhD, ENT Specialist**,** Sen Sok IU Hospital	
3:50pm	*Q.A Session*		
4:00pm	***Intracranial Haemorrhage Due to Late-Onset Vitamin K Deficiency in Newborn (2 CLINICALS REPORTS)***	**Asst.Prof. LORN TRY Patrich,** Chief of Pediatric Department , Deputy Director, Assist.Prof.of Pedatric – UHS and IU, Kg.Cham Provincial Hospital	
4.20pm	***Q. A Session***		
4.30pm	***Implement APLS in Cambodia***	**Dr. Pises Nget**, Angkor Hospital for Children, Siem Reap	
4.50pm	**Q.A Session**		

End of Day 1

Day 2

Date: December 15, 2018

Starting Time: 7:30am until 12:00am at 9th Floor Conference Hall

Time	Topics	Speakers	Moderators
7:30 to 8:00am	**Arrival of participants and Registration**		
8:15am	***Antitumor Potentials of Silver Nanoparticle from Elaeagnus Indica Servett.***	**Dr. Ramesh Kannan, PhD** **Dr. Anbin Ezhilan, PhD** PG & Research Department of Biochemistry, Sirmad Andavan Arts & Science College, India.	**Prof. Dr. Thong Sok Hean** **&** **Dr. Ivan Matela**
8:35am	*Q.A Session*		
8:45am	***Hepatitis: Etiological Spectrum and Prevention of Complication in SSIUH***	**Dr. Anatoly Shevaldin, PhD** Department of Infectious Diseases, SSIUH	
9:05am	*Q.A Session*		
9:15am	***Antibiotic Prophylactic Therapy in Open Appendectomy***	**Asst. Prof. Ley PREAP,** Director, Surgical Department, Sihanouk Hospital Center of HOPE	
9:35am	*Q.A Session*		
9:45am	***Acute Promyelocytic Leukemia in Children***	**Dr. Vannak Samly,** Angkor Hospital for Children, Siem reap	**Assoc. Prof. SOM Vichet** **&** **Dr. Ivan Matela**
10:05am	*Q.A Session*		
10:15am	*Coffee Break*		
10:30am	***Innovative Pharmacognosy Research and Medical Benefit of Natural Resources in Cambodia***	**Prof. Dr. Sena Chheang,** Dean of Faculty of Pharmacy, UHS and IU	
10:50am	*Q.A Session*		
11:00am	***Awareness of Oral Pre-cancer Lesions and Early Detection of Oral Cancer: Cambodian Experience***	**Dr. Sandeth Phan,** Department of OMFS,Preah Anduong Hospital	
11.20am	*Q.A Session*		
11.30am	***Kintaro Cells for Rejuvenation and Treatment***	**Dr. Badmaev Timur.,** MD, Director, Kintaro Cells Power, Japan	

11.50am	*Q.A Session*		
12: 00pm	*Closing Speech*		
ENDING & FAREWELL LUNCH			

Management Acute Pulmonary Edema End Stage Renal Disease in ICU

TAING Sokhun, CHAN Sovandy, KIM Chhoung
Kossamak Hospital
sovandy.clinic@gmail.com

Abstract

Purpose
To Know how many Technique Management Acute pulmonary Edema, Medicine and Renal Replacement Therapy(RRT) at ICU Department in Preak Kossamak Hospital
Introduction
Cause of End stage Renal Disease
-Diabetes
-Hypertension
-Glomerulo Nephritis
-Other Causes
How to manage?
Case of Management Acute Pulmonary Edema by Medicines
Acute Pulmonary Edema can do management by Hemodialysis (RRT)
Conclusion
Acute Pulmonary Edema Could be used in ICU department Preah Kossamak Hospital Management by Medicines and by Hemodialysis->Its Management and Result are good.

Keywords: Acute Pulmonary Edema, Renal Replacement therapy, End stage Renal- Disease.

Kidney Support of Pulmonary Edema (ESRD) in ICU

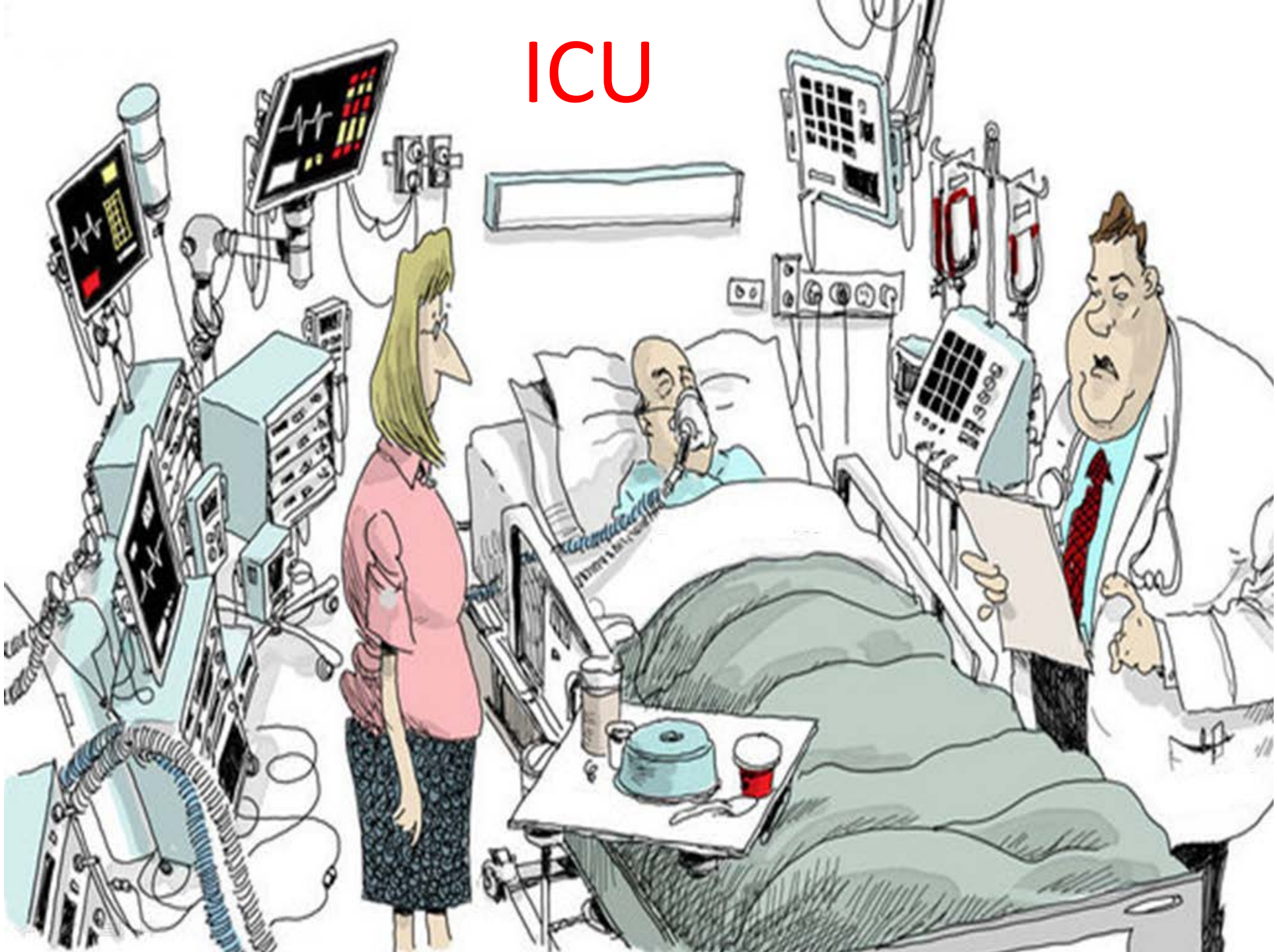
Assoc .Prof . CHAN SOVANDY , Prof .TAING SOKHUN , Prof .KIM CHHOUNG

Deputy Director of ICU , Emergency , Anesthesia

Vice Director of CAN

2018

ICU



Introduction

- ICU Service have 16 bed
- 3 Prof
- 12 Doctor
- 16 Nurse
- Instruments :

  . Ventilator

  . Patients Monitor

  . Defibrillator

  . ABG machine

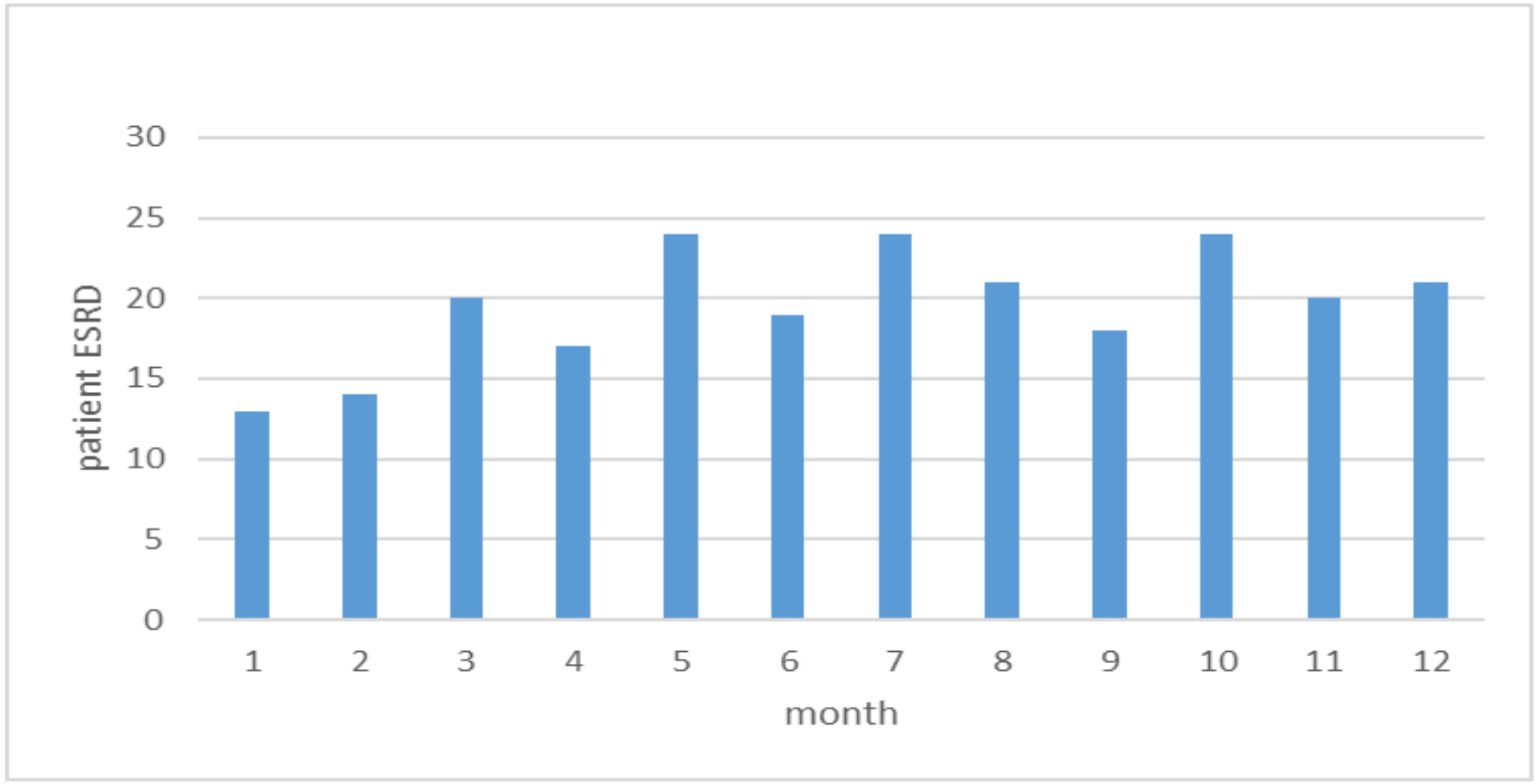
  . Ultrasound Mobile

  . X ray Mobile

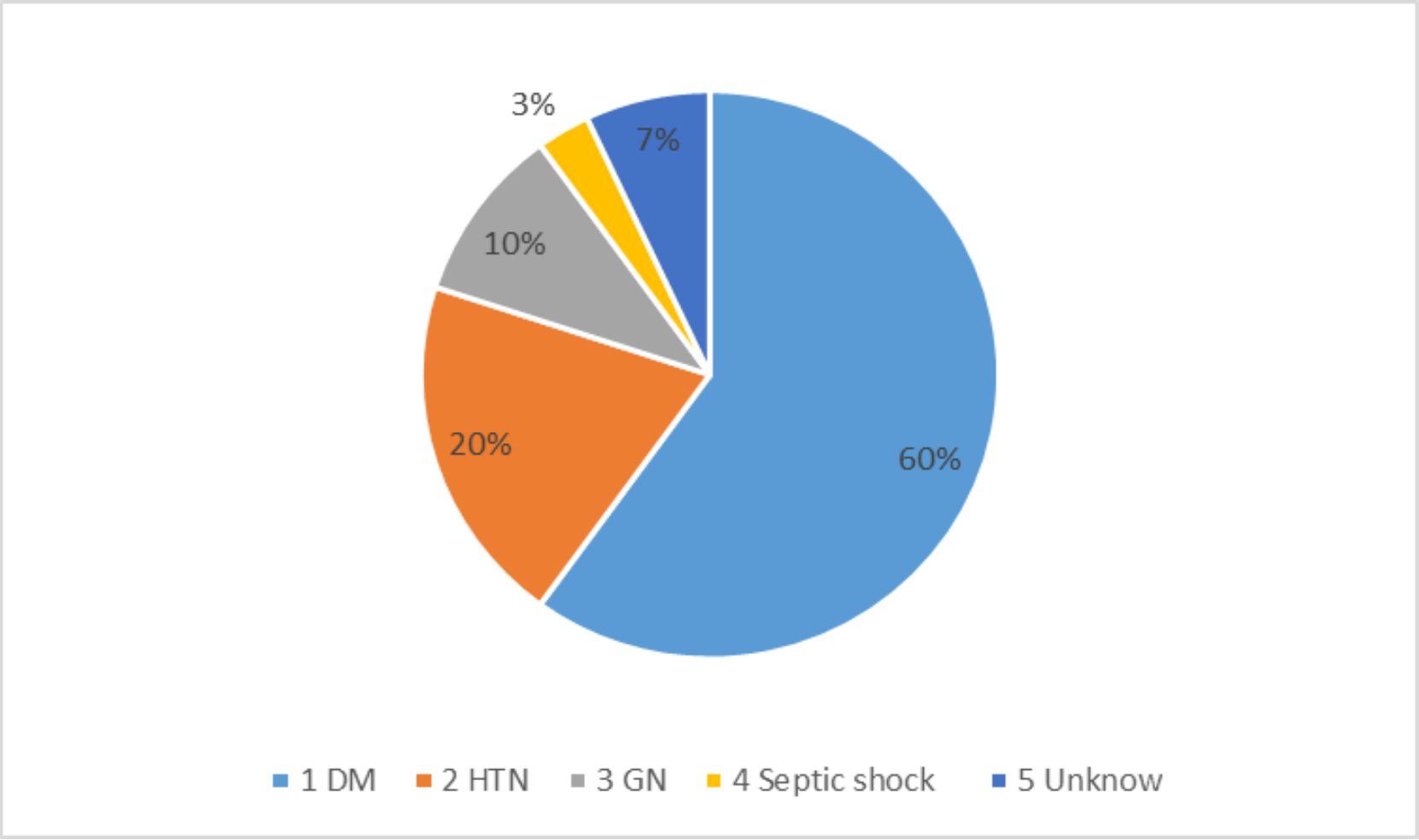
  . ECG

  . Hemodialysis machine

Monthly ESRD patients

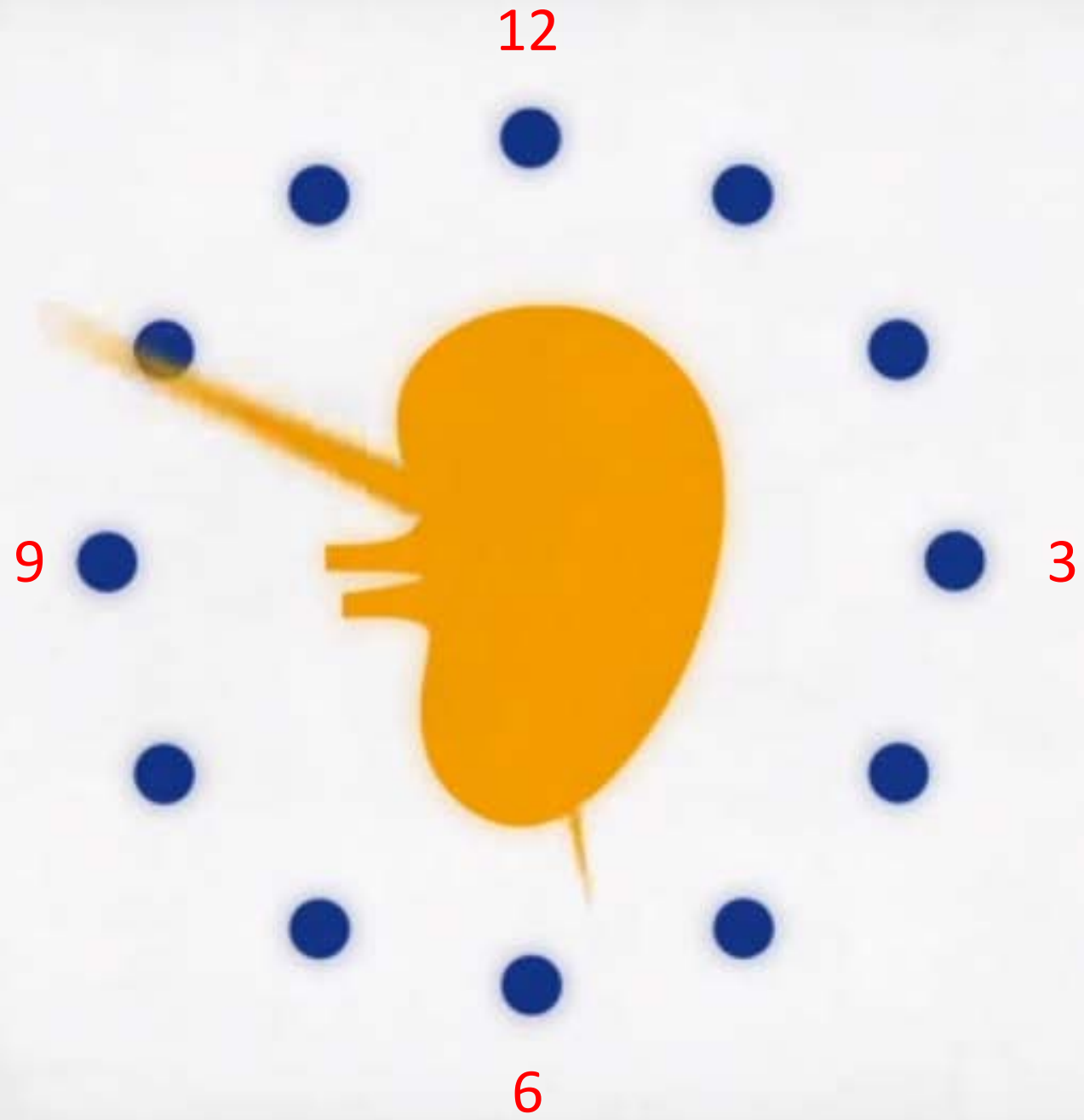


Cause of ESRD

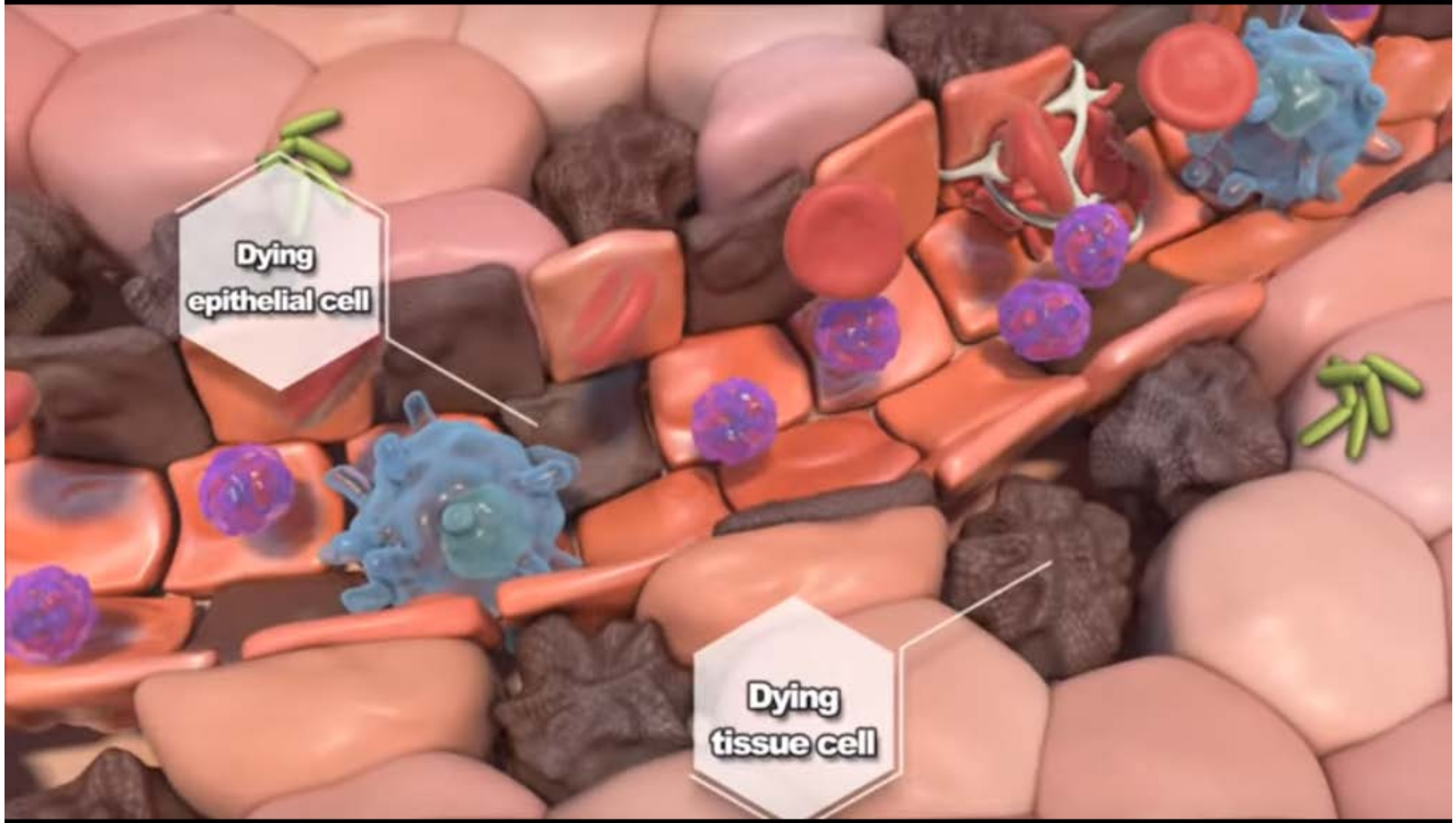


Investigation of ESRD

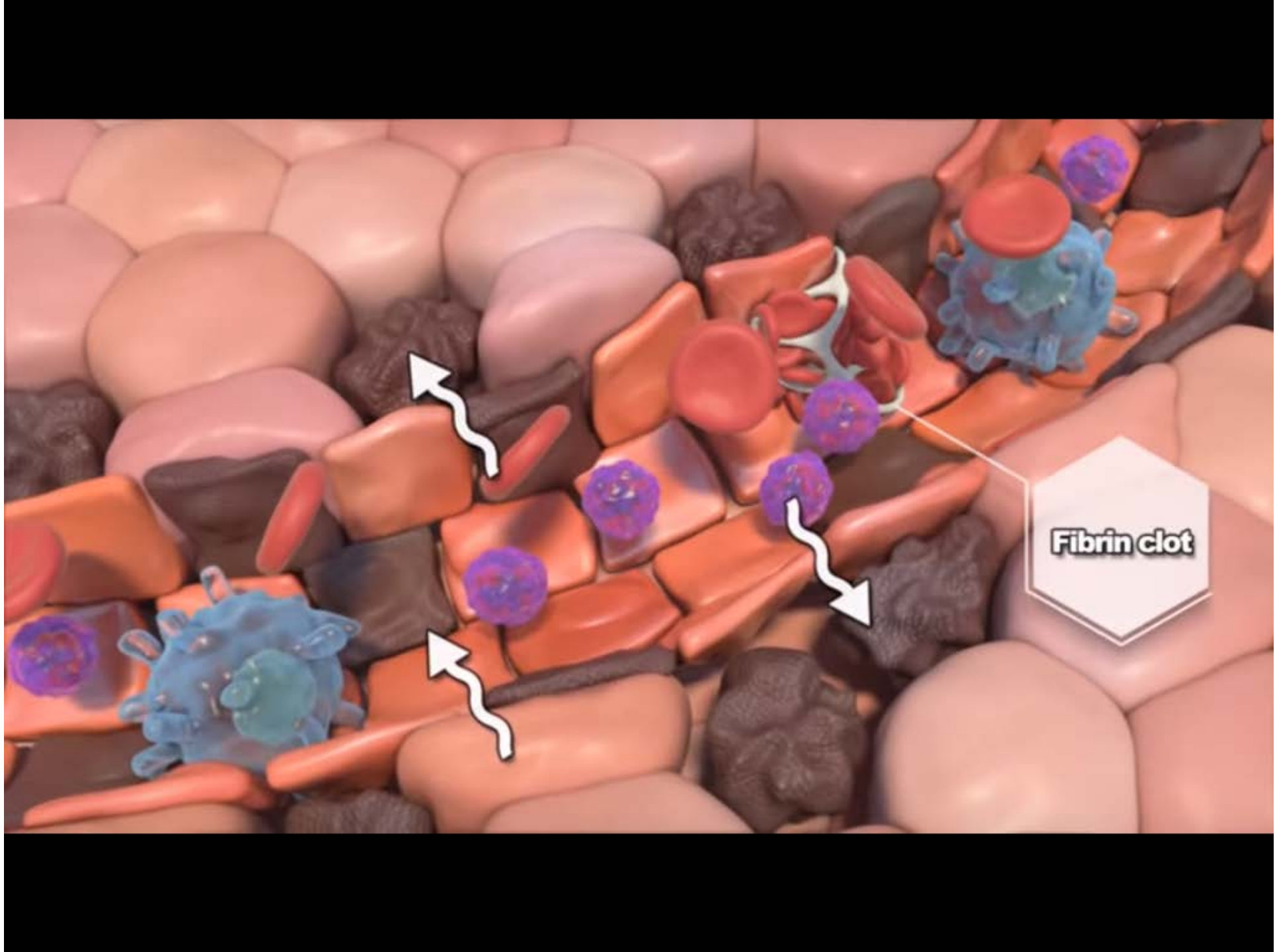
- ABG machine
- Blood test
- Urine test
- X Ray test
- Ultrasound test
- ECG test

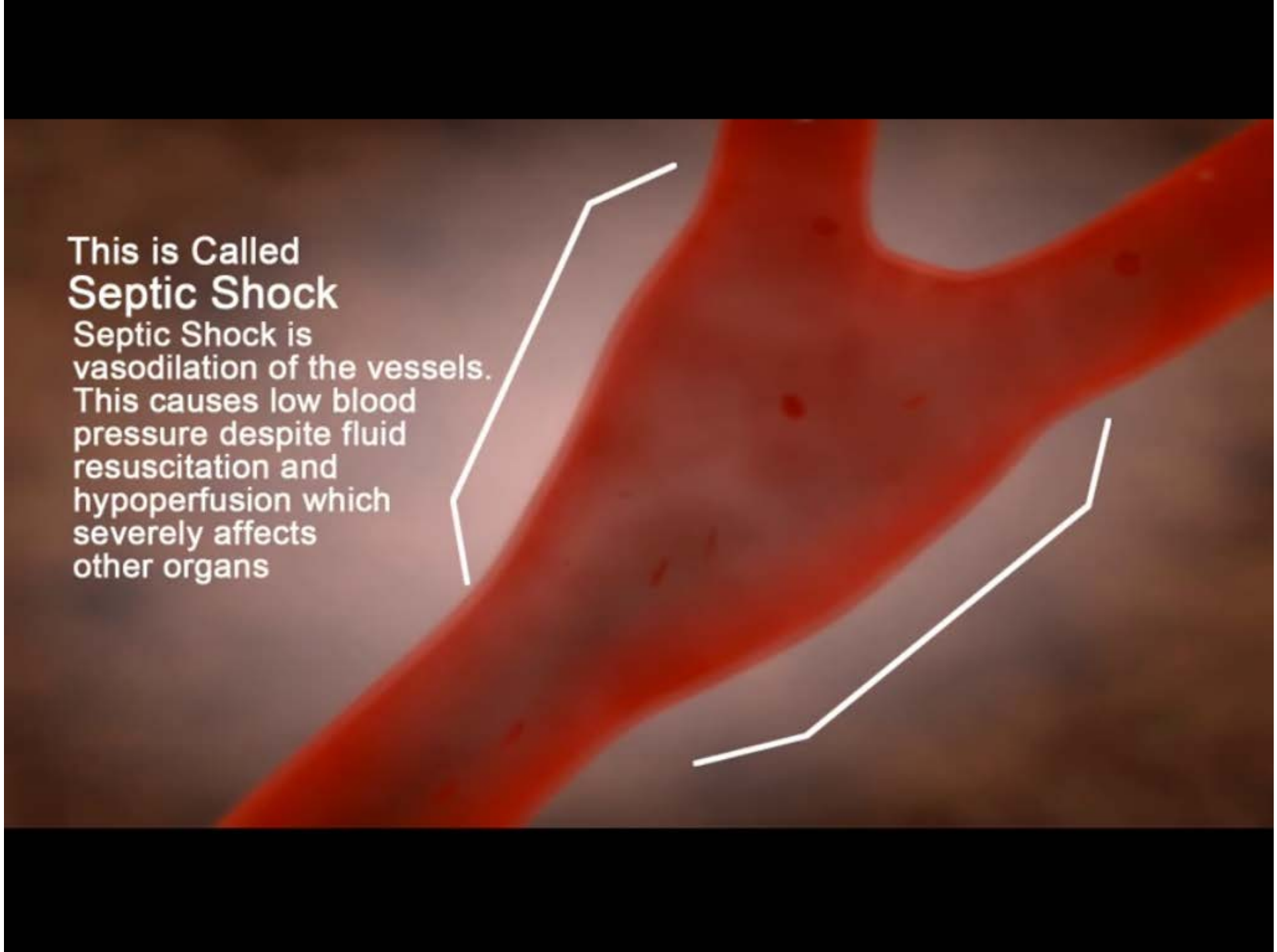

12
9
3
6

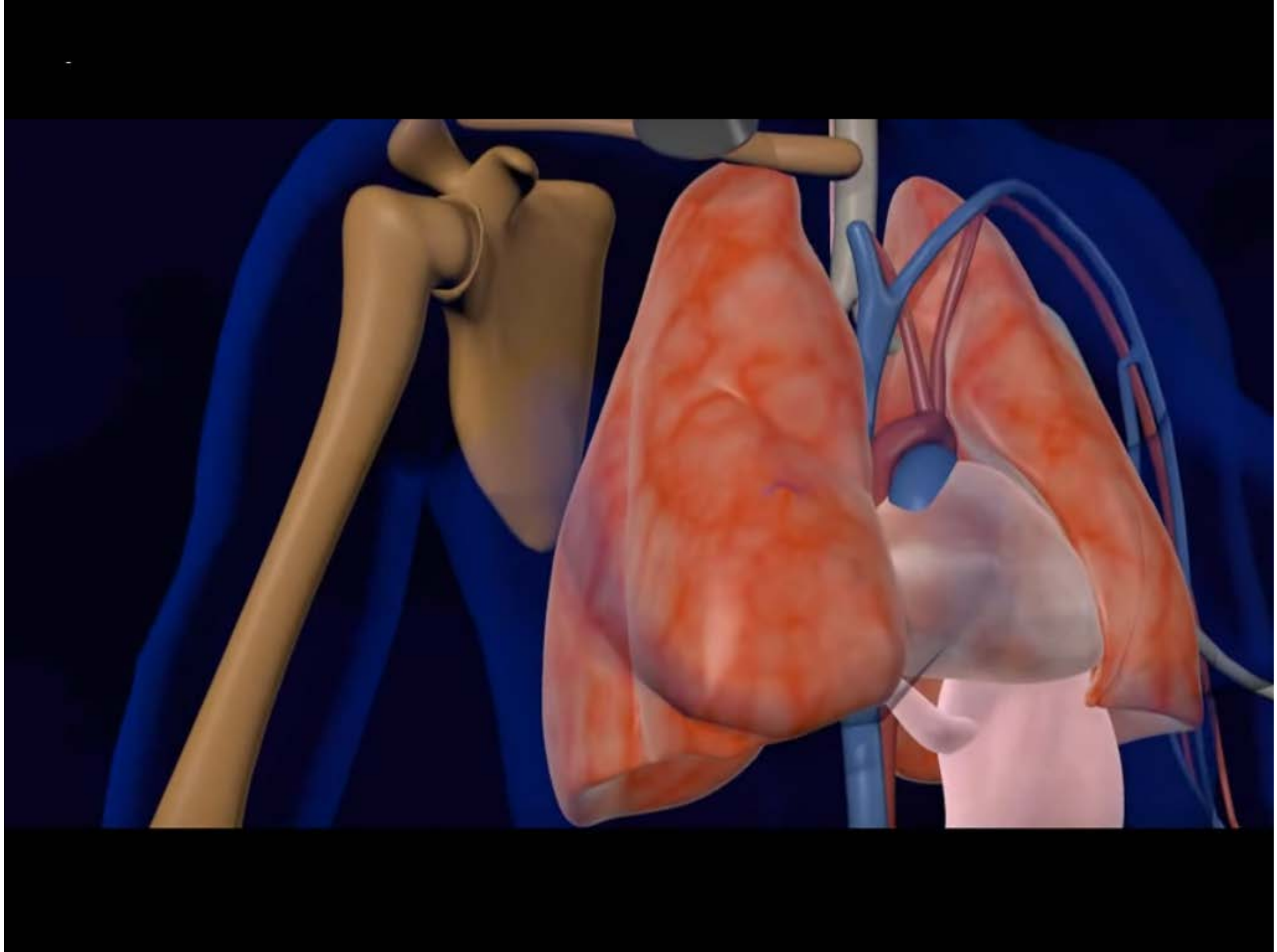
The septic shock leads to a breakage of endothelial junctions which leads to a dysfunctional endothelial barrier.

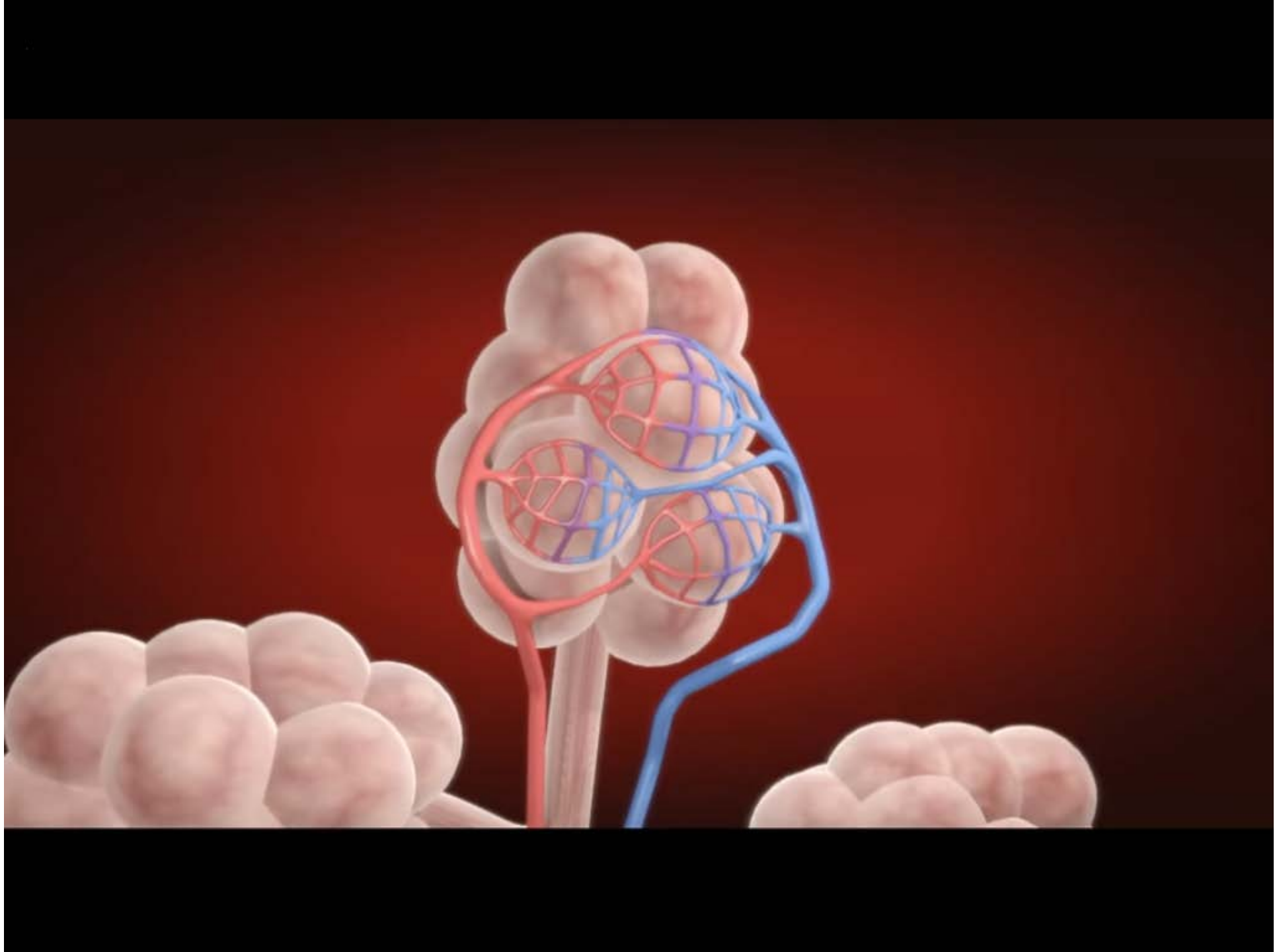

Dying
epithelial cell
Dying
tissue cell


Broken
junctions


Fibrin clot

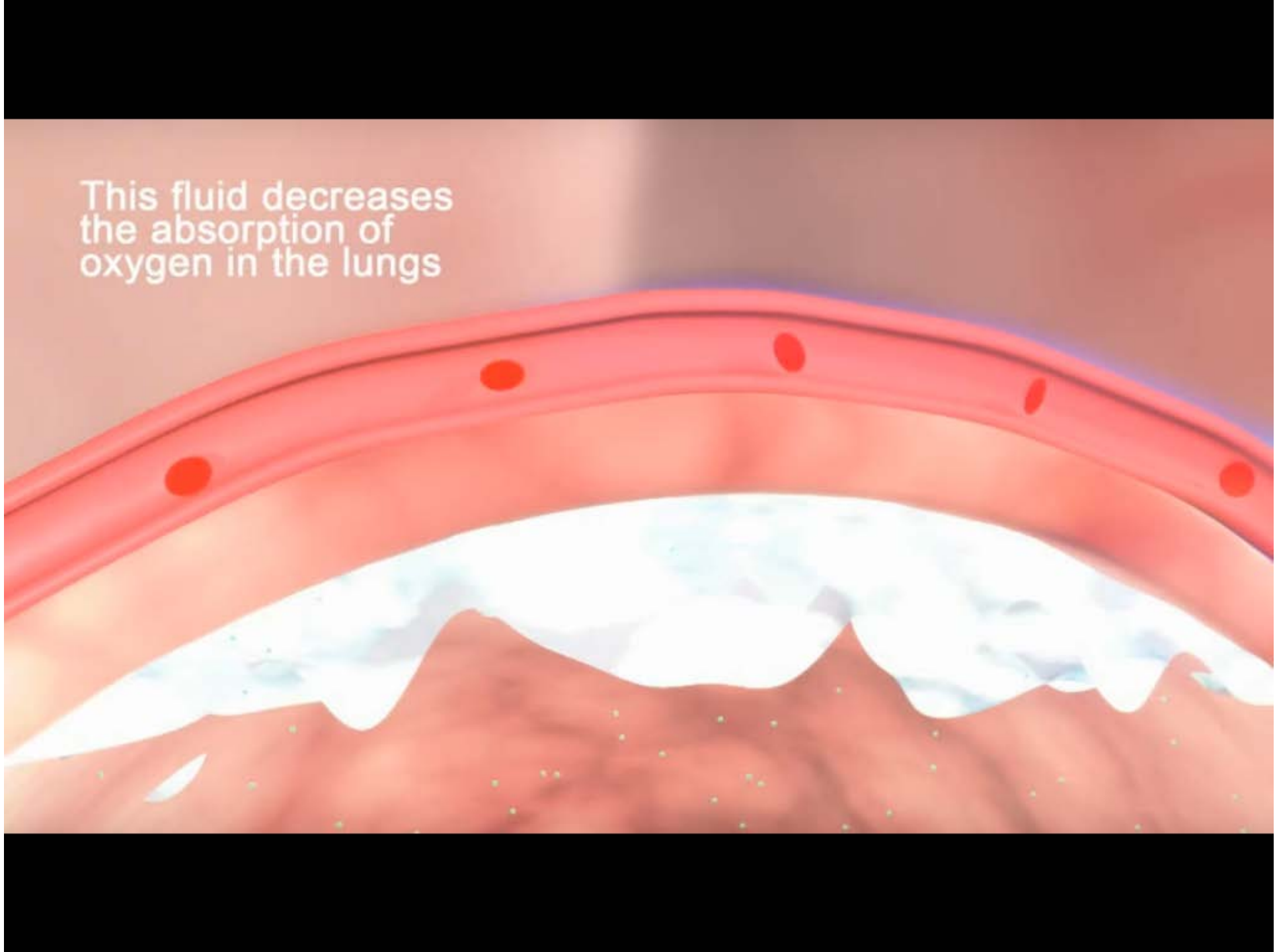

This is Called
Septic Shock
Septic Shock is vasodilation of the vessels. This causes low blood pressure despite fluid resuscitation and hypoperfusion which severely affects other organs



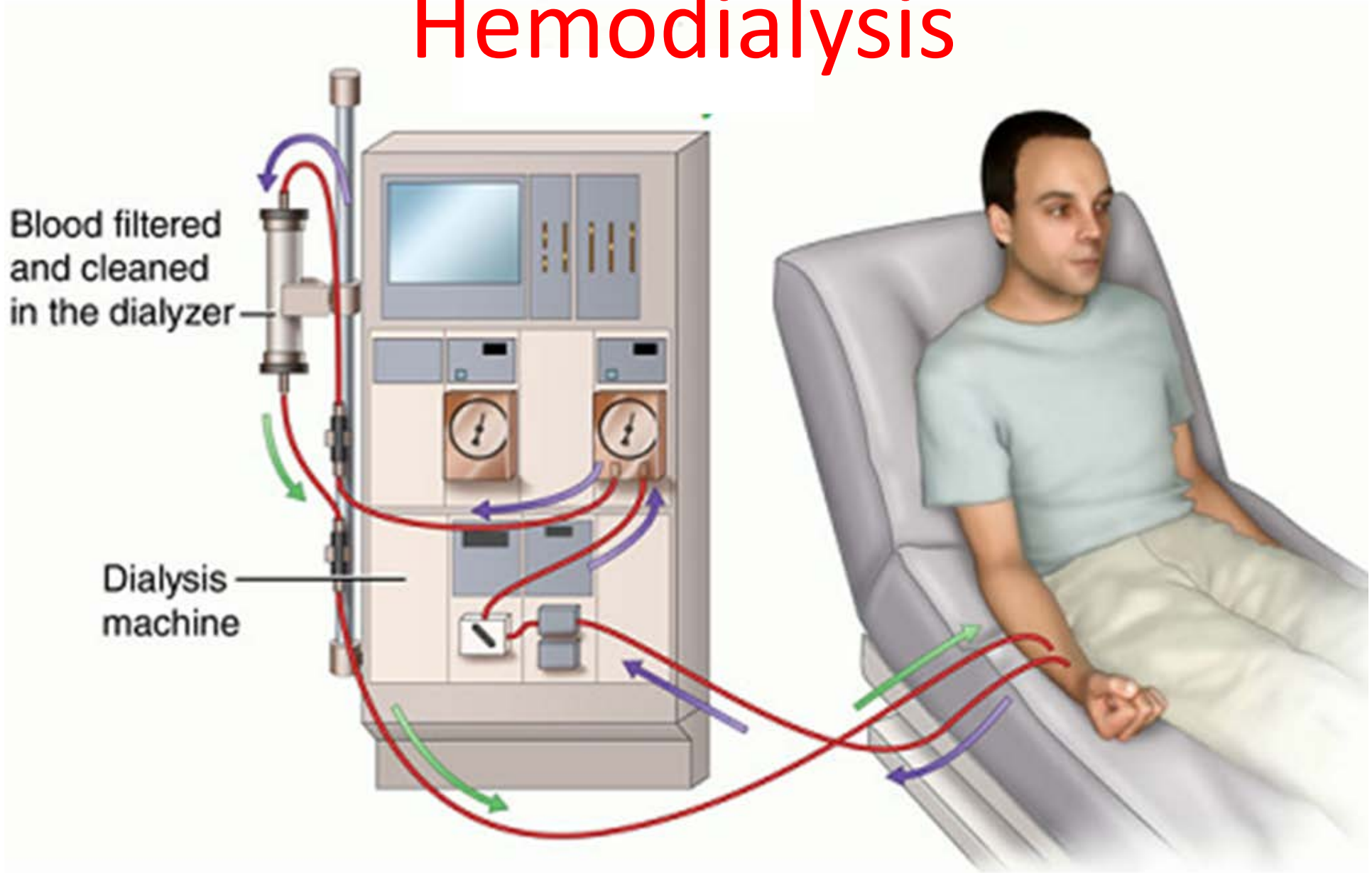


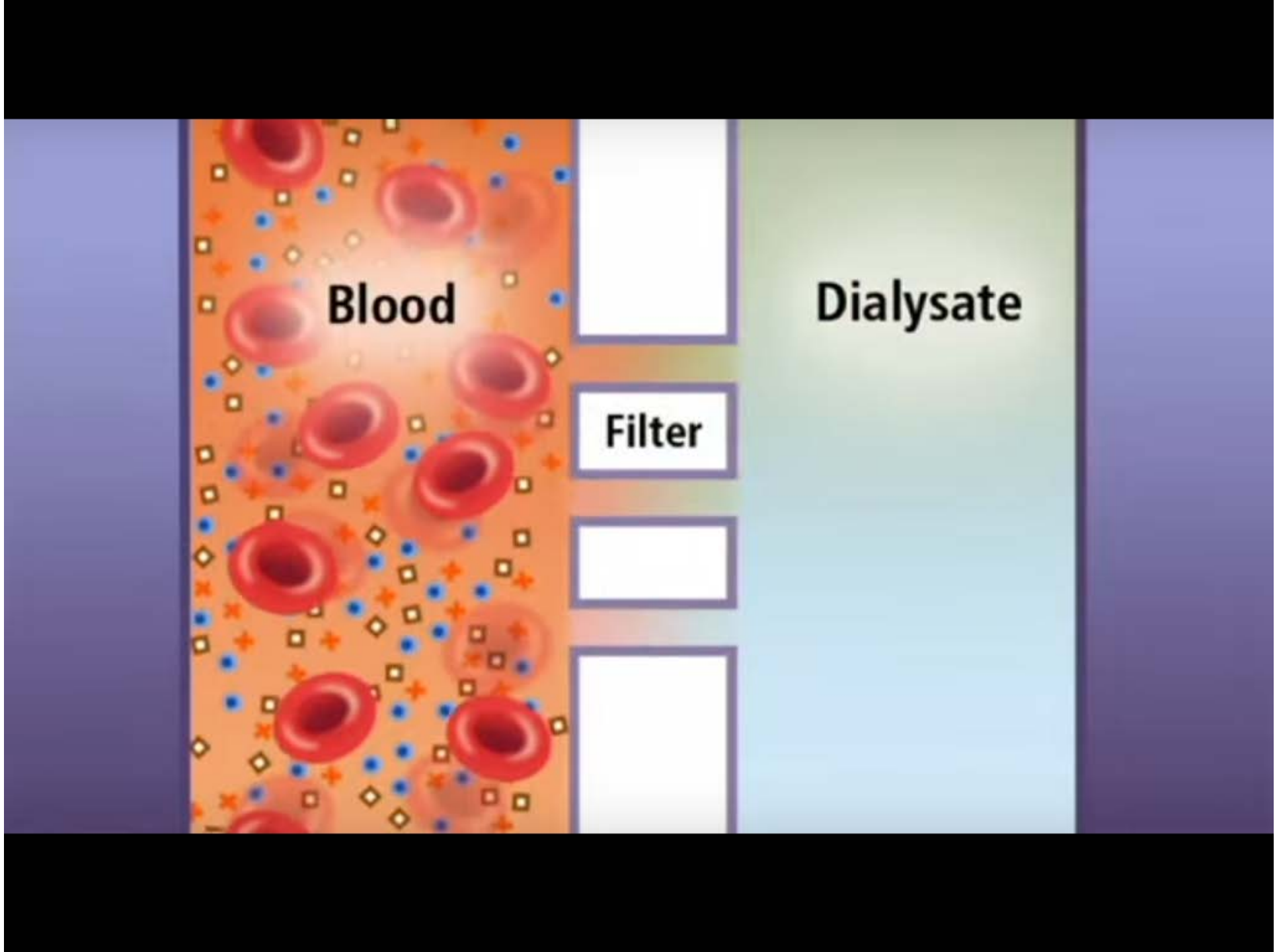

Inside the lungs,
into the alveoli...

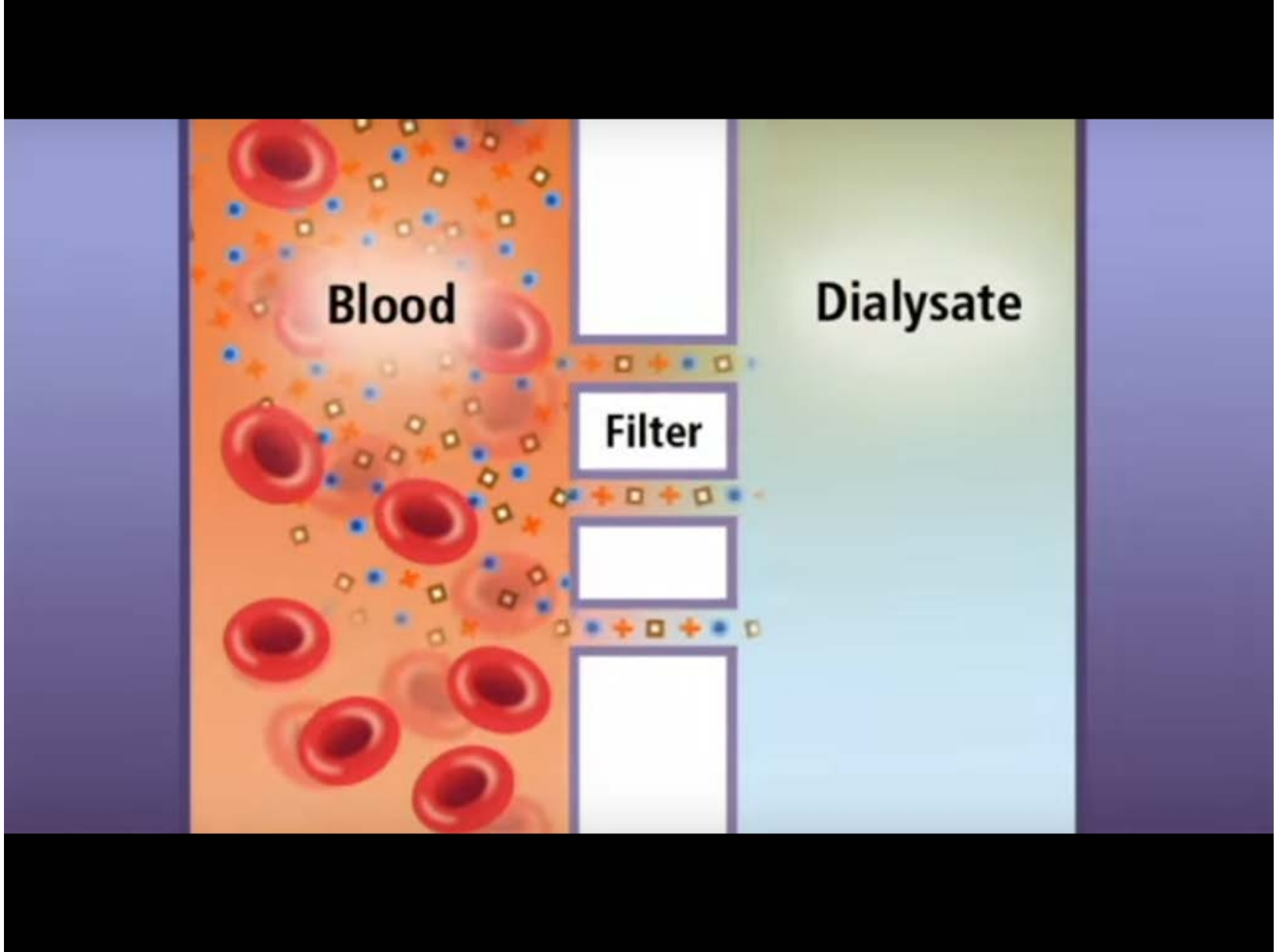

Sepsis causes fluid to
leak into the lungs

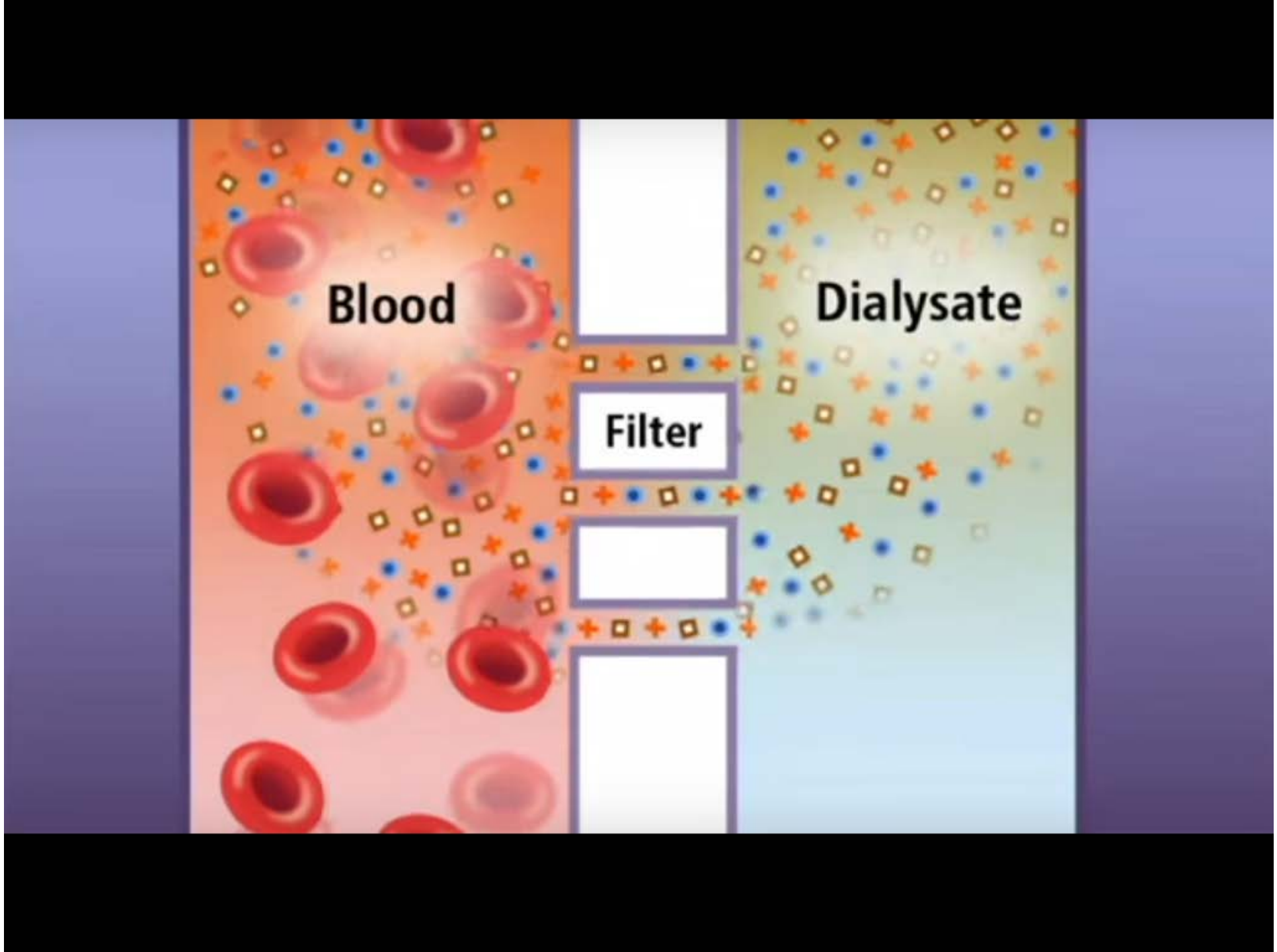

This fluid decreases
the absorption of
oxygen in the lungs

Hemodialysis

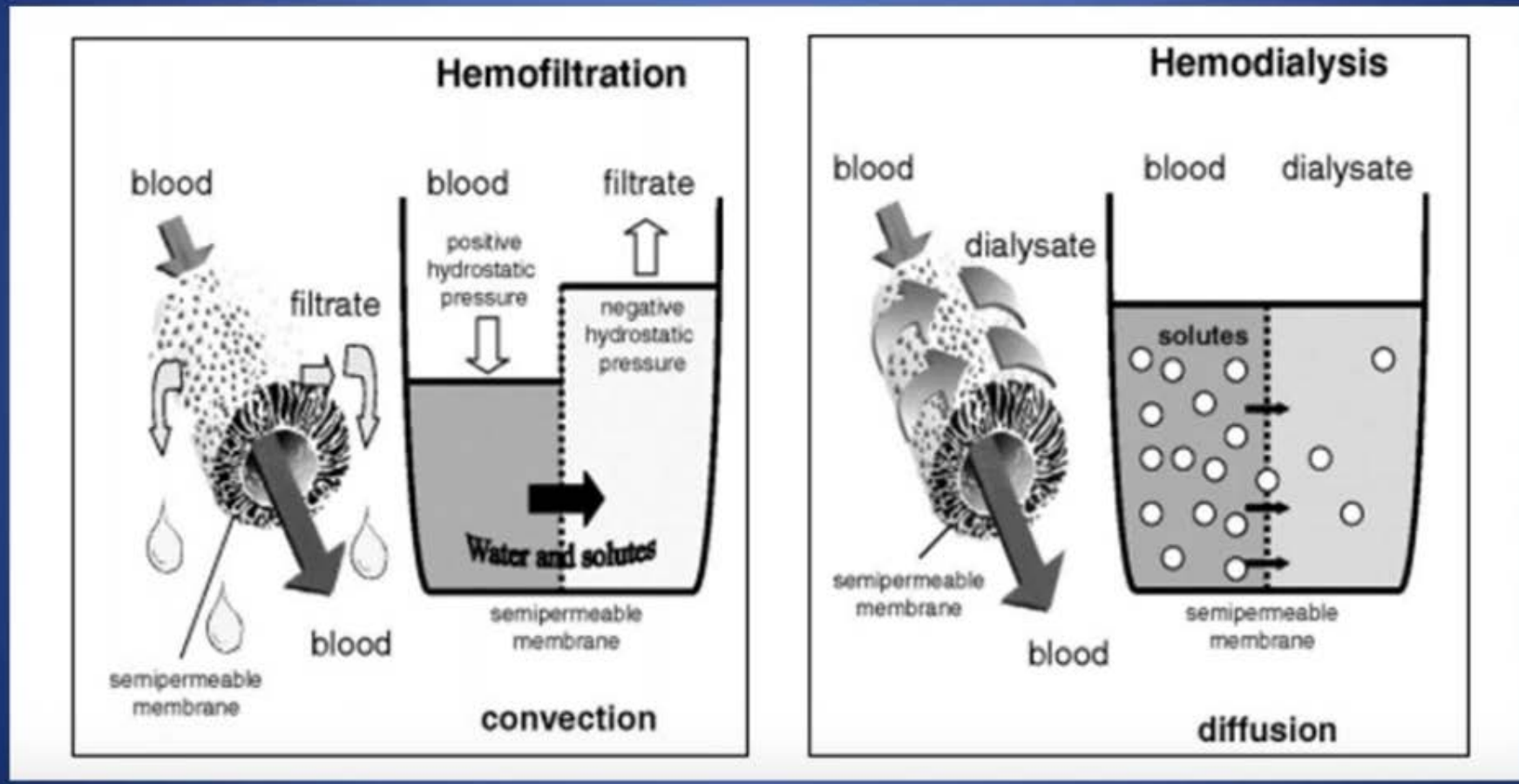



Blood
Filter
Dialysate


Blood
Filter
Dialysate


Blood
Filter
Dialysate

CVVH versus Dialysis



CVVH flow rate

- Flow rate refers to rate of ultrafiltrate production (and therefore replacement fluid infusion rate)
- 20-35ml/kg/hr is usual (i.e. 1400-2450ml/hr of ultrafiltrate in 70kg person)
- No benefit has been shown with higher flow rates
- Higher flow rates are more expensive (more replacement fluid is necessary)
- Higher flow rates may be used if rapid solute clearance is necessary
- 20ml/kg/hr should be default flow rate

Renal 5: Continuous venovenous hemofiltration (CVVH)

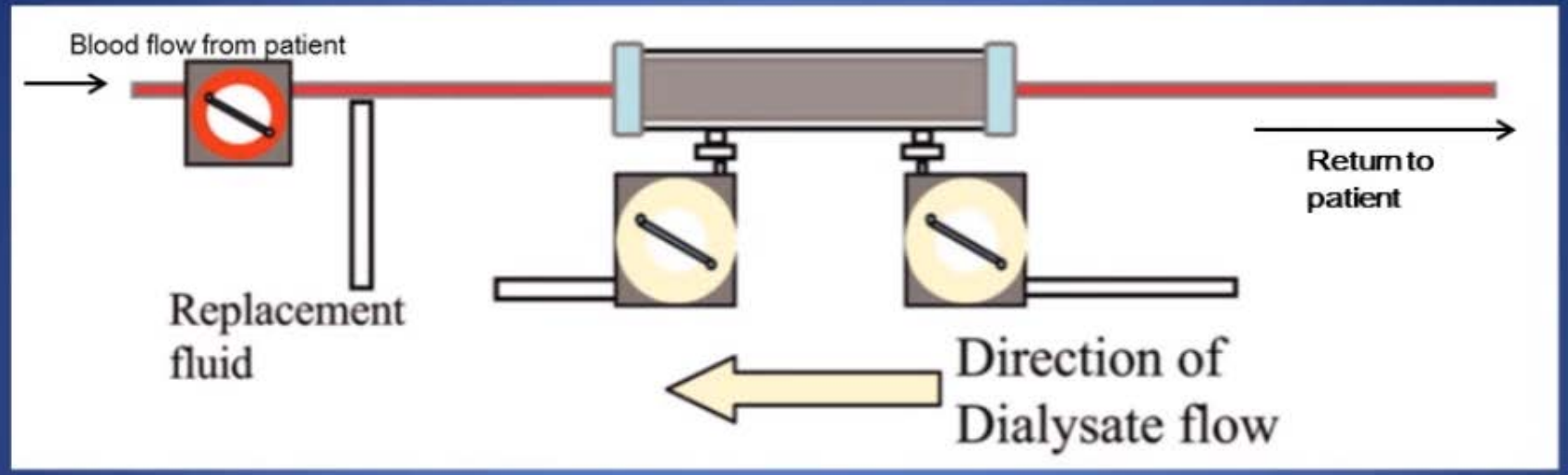
CVVH versus Intermittent Hemodialysis in the ICU

- Less CVS instability with continuous therapy
- No specific infrastructure (plumbing) needed
- More expensive
- Lower solute clearance

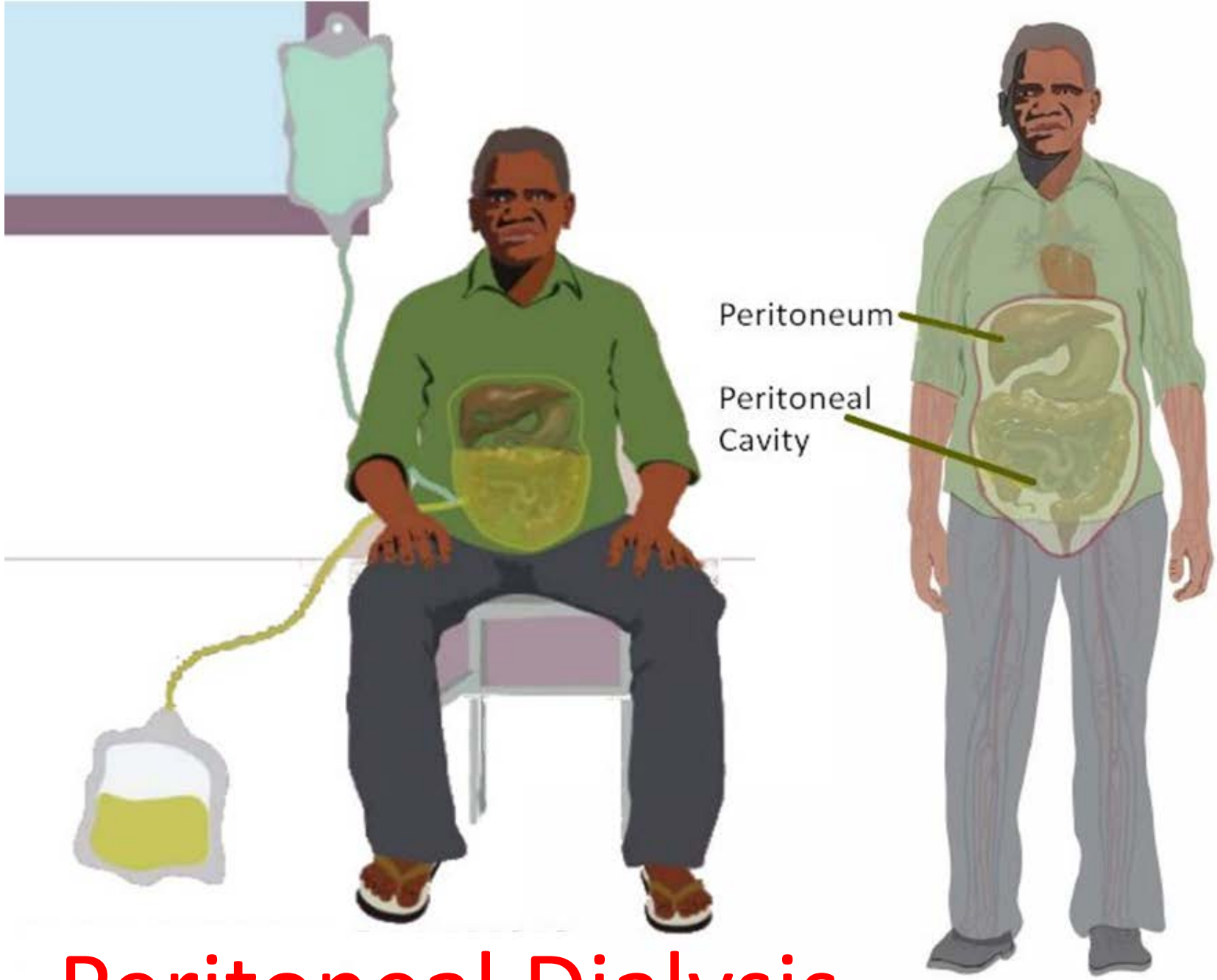
Renal 5: Continuous venovenous hemofiltration (CVVH)

CVVHDF

Continuous venovenous hemodiafiltration



- Higher solute clearance, but rarely necessary
- More complex
- More expensive



Peritoneal Dialysis

THANK YOU
for your
ATTENTION!

The Quality of Data Toward Improving Medical Science in Cambodia

Prof. Hor Bun Leng, M.D; M.Sc; PhD
Head, Department of Public Health, IU
bunleng04@gmail.com

Abstract

Introduction: Medical science is a field that needs improvement and new theory development to improve the effectiveness of the disease prevention, disease diagnosis, care and treatment, prognostic and health promotion. In order to make such progress improvement, reliable, accurate and valid information is the basic need.
Goal: To improve the quality of data in health care service delivery in order to generate reliable, accurate and valid information used for decision making to improve the quality of health service delivery in Cambodia and to develop the medical knowledge and theory.
Objective: To observe the different aspects of data quality, to document the limitation of data quality and to identify the factors affecting the quality of data in health care service delivery in Phnom Penh.
Methodology: The survey is used with quantitative method and cross-sectional design to collect data from the 897 in-patients' files in 3 public health care service deliveries in Phnom Penh.
Finding: As result, in all the patients' file (100%), all required data are not collected or recorded completely as required, it means that there is a problem of missing data in all patient's file (100%). Generally, individual patient, especially the in-patients should have a report at the end of the patient's file but from this finding, the in-patients' file is used to record different data starting from personal data to main reason of seeking consultation, the symptoms, the medical history, the physical examination, the para clinic, the daily monitoring, the daily treatment prescription etc but there is no patient's report written. More than 50% of samples use symptoms as entry diagnosis. The data in the patients' file is recorded inconsistently, for example, some patients' age recorded in "year old" or in "date". Some use "-"sign, some use "negative" word. Some data recorded in Khmer or French or English language. There is no monitoring and evaluation system set in the hospital but data is recorded in two types of data collecting form, the hospital form and the ministry of health from. There is no progress report written except the annual report used for organizing the annual congress of the individual hospital.
Conclusion: The quality of data collected or recorded in the patients' files are facing questions on reliability and accuracy due to 4 main problems: the incomplete data, the incorrect data, the irrelevant data and the inaccurate data.
Discussion: Generally, the right decision is made based on the right information generated from the right data, therefore, finding learn from this survey about the limitation of the data quality could make of course information toward biases either by non-standardized case definition, non-standardized process of data recording or collecting or non-standardized data management.
Recommendation: 3 key aspects could be highlighted, an effective monitoring and evaluation system should be developed or improved, a standardized case definition and data collecting form should be developed or improved and the capacity of data collector or recorder and monitoring and evaluation should be build or regular strengthen. Finally, the progress report and evaluation report should be written on regular basis with an assurance of reliability, accuracy and validity that could be used to improve the quality of the service as well as to contribute to theory of medical knowledge.

The 5th International Medical Conference

Unveil Your Medical Innovation

The Quality of Data towards Improving Medical Science in Cambodia

គុណភាពនៃទិន្នន័យឆ្ពោះទៅរកការលើកកម្ពស់វិទ្យាសាស្ត្រវេជ្ជសាស្ត្រនៅកម្ពុជា

By: Prof Hor Bun Leng, M.D; M.Sc; PhD

Contents

1. Introduction
2. Goal
3. Objectives
4. Methodology
5. Finding
6. Discussion
7. Conclusion
8. Recommendation
9. Acknowledgement

1. Introduction

Reliable Accurate

Fast

Treatable

Affordable

Curable

Accessible

Preventable

Available

medical sciences

Eradicated

Therefore keep it

Right

Innovated

Better

developed

Improved

Know Where you are?

1. Introduction (Continued)

A Hospital now → **A Hospital in the future**

Better = Right ☞ Better Diagnosis

Better = Improved ☞ Better Treatment

Better = Developed ☞ Better Cure

Better = Changed ☞ Better Quantity

Better = Innovated (new) ☞ Better Quality

Know Where you are?

1. Introduction (Continued)

Better = Right

Better = Improved

Better = Developed

Better = Changed

Better = Innovated (new)

Scientific Information

M & E

Research

To make right decision

Leadership → Vision → Mission → Policy → Strategy

2. Goal

To improve the quality of data in health service delivery for better use strategically in decision making to make hospital changed, developed and to contributed to medical science development

2. Objectives

The survey sets several objectives to observe:

1. The role and function of M&E system
2. The data collecting format used
3. The quality of data
4. The data management process
5. The use of information

3. Methodology

1. **Design:** survey using quantitative and cross-sectional design with support of qualitative method using in-depth interview

2. **Sites:** 3 national hospitals in Phnom Penh

3. Study population: patient record's files in the hospitals and technical bureau officers

4. **Sample size:** 300 patients 'record and 6 technical bureau officers

5. **Sampling:** randomly selected among patients 'record file and convenient sampling among the technical bureau officers

6. **Tool:** both opened and closed ended questionnaire used

7. **Data management:** Excel program used

4. Finding

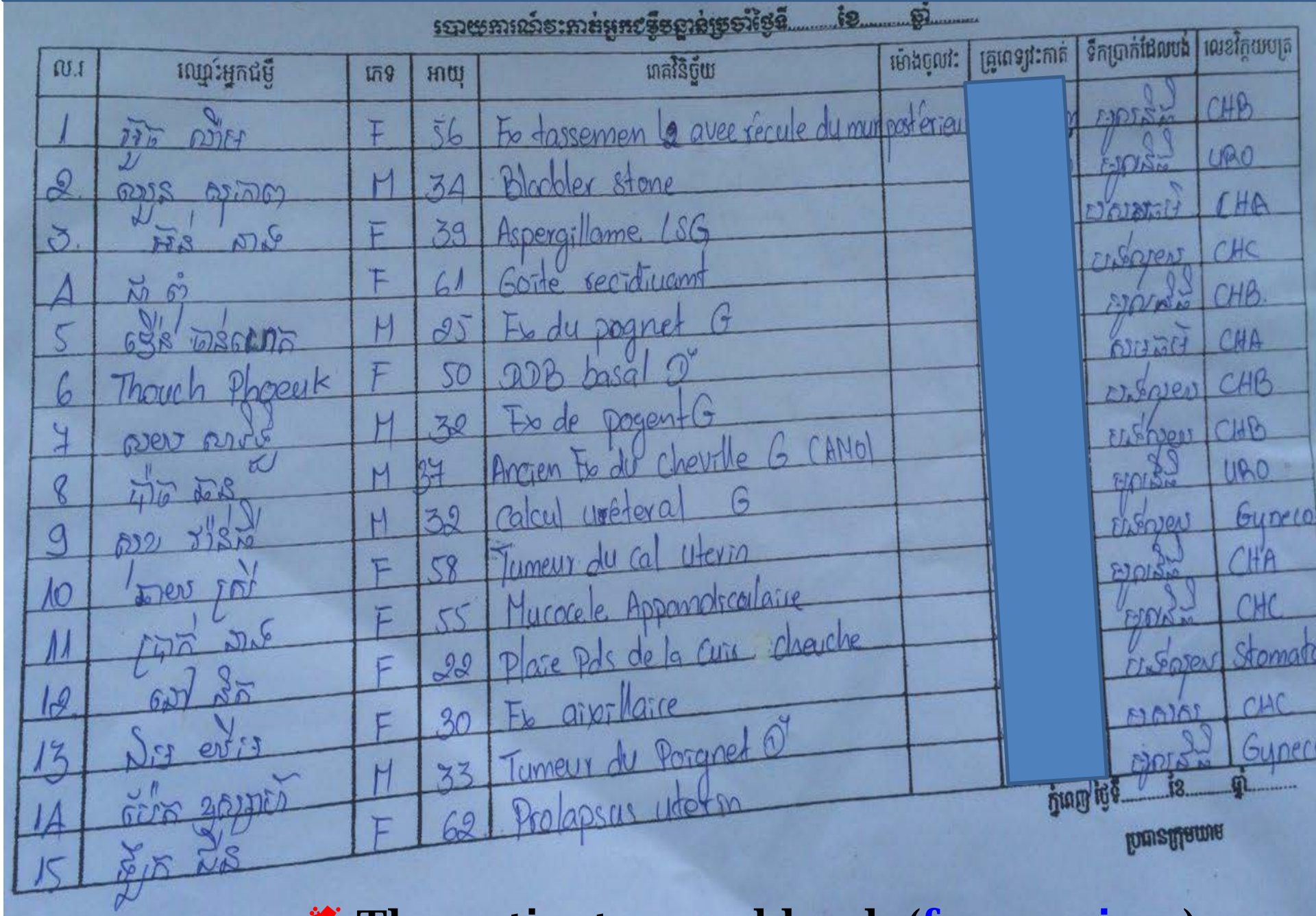
1. The M&E system

- No M&E system set but the hospitals do have health information unit

2. Data collecting form

2 data collecting forms used:

- The form from the health information system of ministry of health
- The hospital form
  - The patient record file (for individual patient)
  - The patient record book (for services)
  - The hospital record file (for whole hospital)



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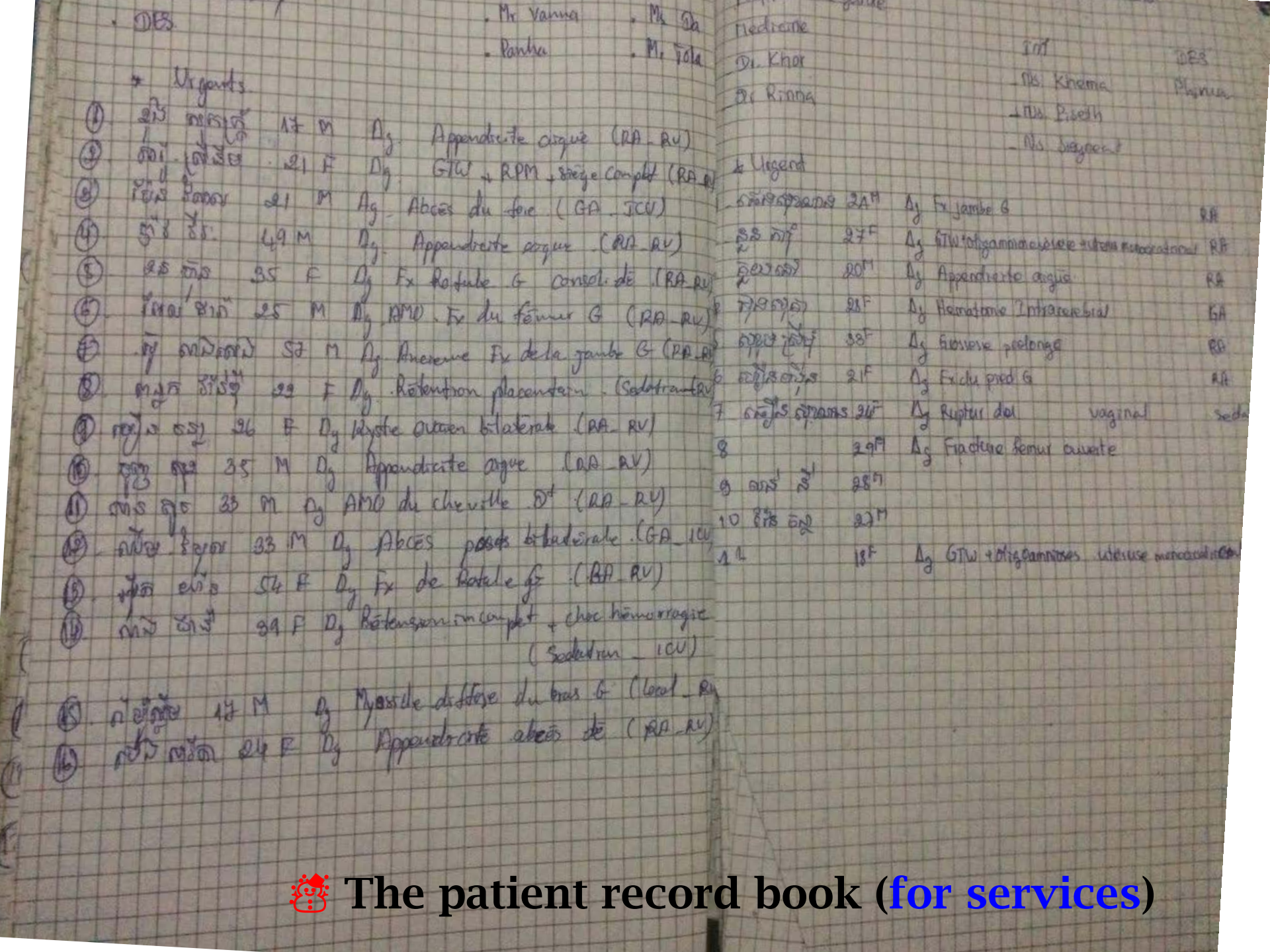
2	[illegible]	M	34	Bladder stone			[illegible]	URO
3	[illegible]	F	39	Aspergillame LSG			[illegible]	CHA
4	[illegible]	F	61	Goite recidivant			[illegible]	CHC
5	[illegible]	M	25	Fx du poignet G			[illegible]	CHB
6	Thouch Phoeuk	F	50	DDB basal D°			[illegible]	CHA
7	[illegible]	M	32	Fx de poignet G			[illegible]	CHB
8	[illegible]	M	37	Ancien Fx de cheville G CANOL			[illegible]	CHB
9	[illegible]	M	32	Calcul uréteral G			[illegible]	URO
10	[illegible]	F	58	Tumeur du col utérin			[illegible]	Gynéco
11	[illegible]	F	55	Mucocele Appendiculaire			[illegible]	CHA
12	[illegible]	F	22	Plaie Pds de la Cuis droite			[illegible]	CHC
13	[illegible]	F	30	Fx axillaire			[illegible]	Stomato
14	[illegible]	M	33	Tumeur du Poignet D°			[illegible]	CHC
15	[illegible]	F	62	Prolapsus utérin			[illegible]	Gynéco

ភ្នំពេញ ថ្ងៃទី.....ខែ.....ឆ្នាំ.....

ប្រធានក្រុមការ

The patient record book (for services)



The patient record book (for services)

4. Finding (Continued)

3. Data management

- ☞ Is performed at the technical bureau of the hospital
- ☞ The form from the health information system is sent back to ministry of health
- ☞ Only some types of collected data are analysed
- ☞ Only annual report published
- ☞ The technical officers working for data management are not data management professional

4. Strategic information

- Annual hospital progress
- Information sharing with hospital visitors/guests

4. Finding (Continued)

5. Data quality

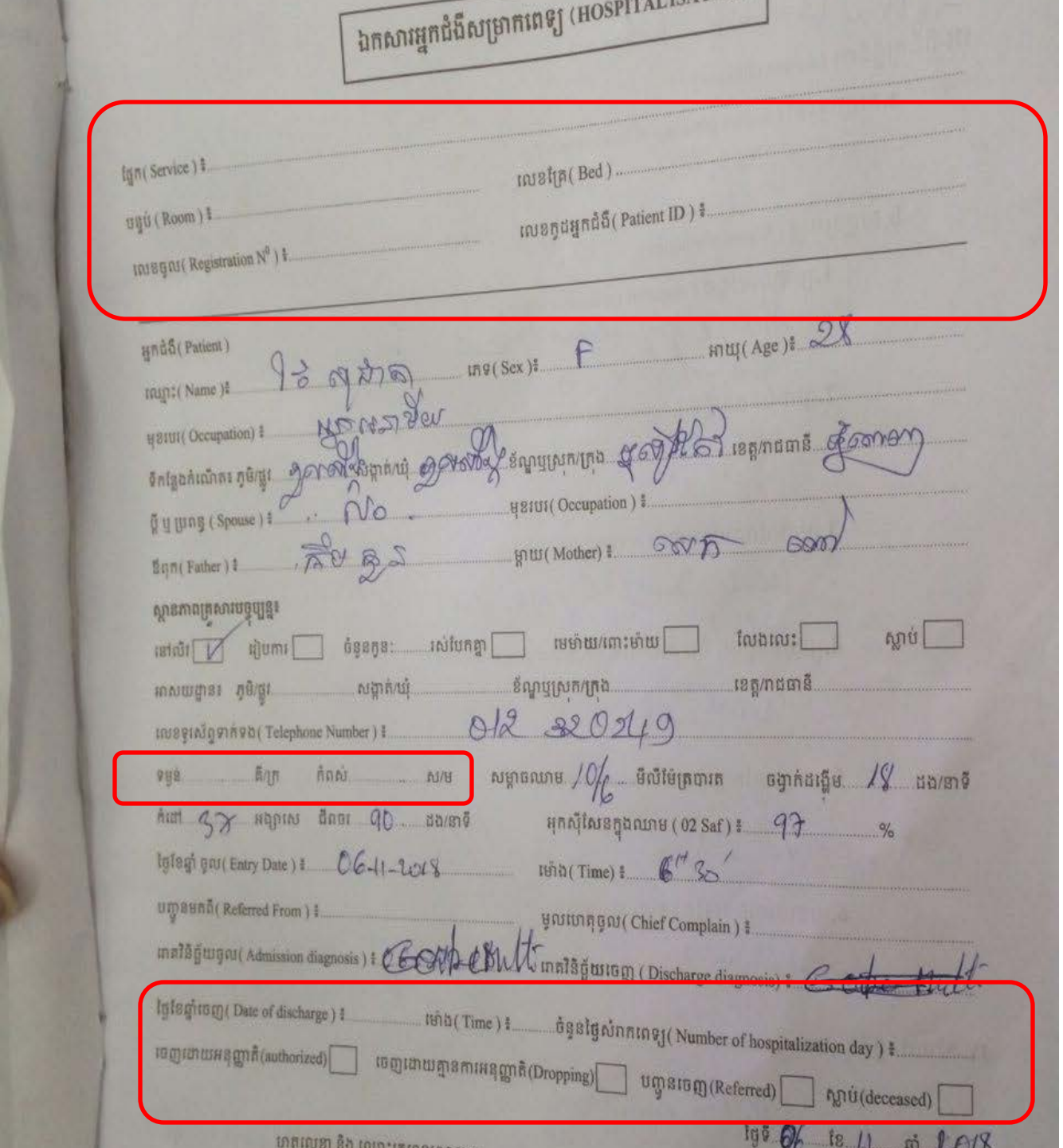
5.1. Data recording

5.1.1. Data missing

All patients 'file (100%) are recorded incompletely. The missing data is spread across the patients 'files

Table 1: The distribution of data recording among the sample

N0	Data recording	Number (#)	Percentage (%)
01	Complete	00	0.00
02	Incomplete	300	100.00
	Total	300	100.00


ឯកសារអ្នកជំងឺសម្រាកពេទ្យ (HOSPITAL

ផ្នែក(Service) ៖ .....

បន្ទប់ (Room) ៖ ..... លេខគ្រែ(Bed) .....

លេខចូល(Registration N°) ៖ ..... លេខកូដអ្នកជំងឺ(Patient ID) ៖ .....

អ្នកជំងឺ(Patient)

ឈ្មោះ(Name)៖ ... ភេទ(Sex)៖ F ... អាយុ(Age)៖ 28

មុខរបរ(Occupation) ៖ ...

ទីកន្លែងកំណើត៖ ភូមិ/ផ្លូវ ... ឃុំ/សង្កាត់ ... ខ័ណ្ឌឬស្រុក/ក្រុង ... ខេត្ត/រាជធានី ...

ប្តី ឬ ប្រពន្ធ (Spouse) ៖ ... មុខរបរ(Occupation) ៖ ...

ឪពុក(Father) ៖ ... ម្តាយ(Mother) ៖ ...

ស្ថានភាពគ្រួសារបច្ចុប្បន្ន៖

នៅលី ☑ រៀបការ ☐ ចំនួនកូន: ... រស់បែកគ្នា ☐ មេម៉ាយ/ពោះម៉ាយ ☐ លែងលះ ☐ ស្លាប់ ☐

អាសយដ្ឋាន៖ ភូមិ/ផ្លូវ ... ឃុំ/សង្កាត់ ... ខ័ណ្ឌឬស្រុក/ក្រុង ... ខេត្ត/រាជធានី ...

លេខទូរស័ព្ទទាក់ទង(Telephone Number) ៖ 012 220249

ទម្ងន់ ... គីឡូ កំពស់ ... ស/ម សម្ពាធឈាម 10/6 ... មីលីម៉ែត្រជាបរត ចង្វាក់ដង្ហើម 18 ដង/នាទី

កំដៅ 37 អង្សាសេ ជីពចរ 90 ដង/នាទី អុកស៊ីសែនក្នុងឈាម (02 Saf) ៖ 97 %

ថ្ងៃខែឆ្នាំ ចូល(Entry Date) ៖ 06-11-2018 ម៉ោង(Time) ៖ 6" 30'

បញ្ជូនមកពី(Referred From) ៖ ... មូលហេតុចូល(Chief Complain) ៖ ...

រោគវិនិច្ឆ័យចូល(Admission diagnosis) ៖ Confirmed រោគវិនិច្ឆ័យចេញ (Discharge diagnosis) ៖ Confirmed

ថ្ងៃខែឆ្នាំចេញ(Date of discharge) ៖ ... ម៉ោង(Time) ៖ ... ចំនួនថ្ងៃសំរាកពេទ្យ(Number of hospitalization day) ៖ ...

ចេញដោយអនុញ្ញាត(authorized) ☐ ចេញដោយគ្មានការអនុញ្ញាត(Dropping) ☐ បញ្ជូនចេញ(Referred) ☐ ស្លាប់(deceased) ☐

ថ្ងៃទី 06 ខែ 11 ឆ្នាំ 2018

Example

The missing data in patients ‘file

4. Finding (Continued)

5. Data quality

5.1. Data recording

5.1.2. Mean of data recording

All data (100%) are collected or recorded by hand writing only, no computer is used.

Table 2: The distribution of means used for data recording among the sample

N0	Data filling	Number (#)	Percentage (%)
01	Hand writing	300	100.00
02	Computer	00	0.00
	Total	300	100.00

4. Finding (Continued)

5. Data quality

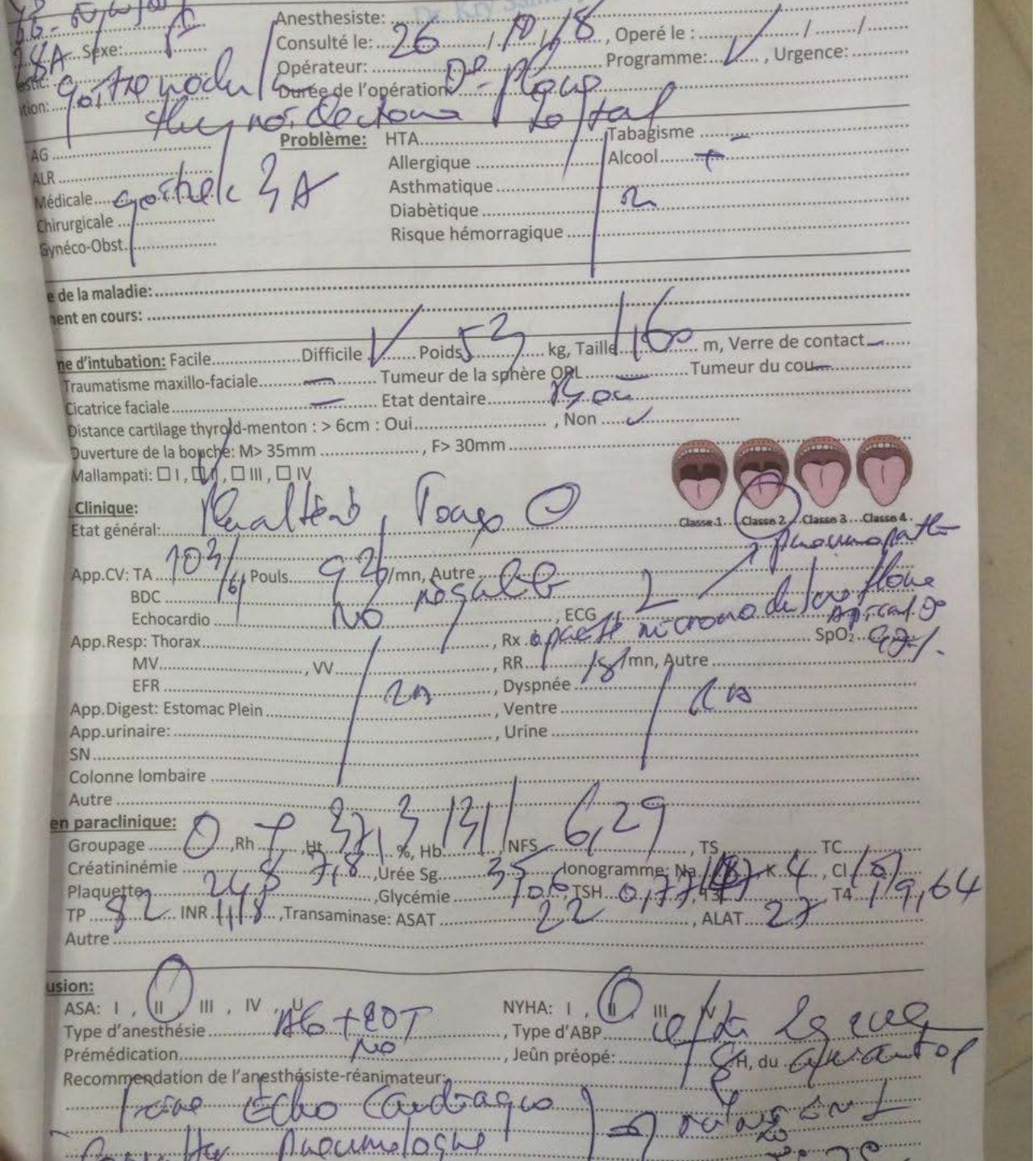
5.1. Data recording

5.1.3. Quality data from hand writing

☞ **About 94.66% of patients 'file have difficulty to read in some parts.**

Table 3: The distribution of quality data on reading

N0	Data reading	Number (#)	Percentage (%)
01	Difficult to read	284	94.66
02	Read smoothly	16	5.34
	Total	300	100.00


Anesthesiste:
Consulté le: 26 / 10 / 18 , Operé le : / /
Opérateur: Programme: , Urgence:
Durée de l'opération
Problème: HTA — Tabagisme
Allergique — Alcool
Asthmatique
Diabètique
Risque hémorragique
AG
ALR
Médicale
Chirurgicale
Gynéco-Obst.
de la maladie:
ent en cours:
ne d'intubation: Facile Difficile Poids kg, Taille m, Verre de contact
Traumatisme maxillo-faciale — Tumeur de la sphère ORL — Tumeur du cou
Cicatrice faciale — Etat dentaire
Distance cartilage thyroïd-menton : > 6cm : Oui , Non
Ouverture de la bouche: M> 35mm , F> 30mm
Mallampati: ☐ I , ☐ II , ☐ III , ☐ IV
Classe 1 Classe 2 Classe 3 Classe 4
Clinique:
Etat général:
App.CV: TA Pouls /mn, Autre
BDC
Echocardio , ECG
App.Resp: Thorax , Rx SpO2
MV , VV
EFR
RR /mn, Autre
Dyspnée
App.Digest: Estomac Plein
Ventre
App.urinaire:
Urine
SN
Colonne lombaire
Autre
en paraclinique:
Groupage , Rh , Ht , %, Hb , NFS , TS , TC
Créatininémie , Urée Sg , Ionogramme: Na , K , Cl
Plaquettes , Glycémie , TSH , T4
TP , INR , Transaminase: ASAT , ALAT
Autre
usion:
ASA: I , II , III , IV , U
Type d'anesthésie , Type d'ABP
Prémédication , Jeûn préopé:
Recommendation de l'anesthésiste-réanimateur:
NYHA: I , II , III , IV

Example

The recorded data that has difficulty To read

4. Finding (Continued)

5. Data quality

5.1. Data recording

5.1.4. Consistency of data recording

- The language used for recording data is not consistent, Khmer, French and English

- The same data meaning but use different record. For example, using "Negative" word or using "-" sign

5.1.5. Misplacing of data recording

- About 12% of samples where their data were misplaced

5.1.5. Misuse of data case definition

- About 50% of samples, symptoms were used as diagnosis

5. Discussion

1. Presently, there is only health information system available in hospital because, it collects only the cases seeking care in the hospital while M&E is used to monitor the progress and effectiveness of the hospital planning implementation.

2. Without the professional background on data management, the data management guideline, the supervision and monitoring system, it does make a lot of questions on data quality.

3. Data collected so far is served for health information of the MoH, for routine use for patient management and for annual hospital congress but it is not yet served strategically for planning, policy or guideline development, for improving the hospital quality etc.

6. Conclusion

1. In general, there is no M&E system set in the national hospital yet except the health information unit.

2. The data collected through health information form is served for the health information system of MoH.

3. The data collected by the hospital form is served for patients management, hospital administration and management rather than for hospital improvement and development strategically.

4. The quality of data is systematically limited starting from data case definition, data collecting format and data management that could lead to systematic bias of information and finally, the bias of decision making.

5. Variety of data available in the hospital, but it potential use is very limited and does very little contributing to medical science.

7. Recommendation

1. In theory, hospital should has strong and professional M&E system in place to monitor and evaluate the progress and effectiveness of the hospital operation. It is hard to believe that a hospital run without M&E system.

2. M&E data collecting form is developed with clear indicators.

3. The M&E guideline should be developed and trained to ensure the standardized process of data management to assure both the quality of data and information. Even though, using health information, the guideline of data management should be in place

4. The human resource should be professional in data management with regular supervised, mentored, elevated and motivated.

7. Recommendation

5. Hospital report is regular published and shared. The hospital management team could use it strategically to improve the hospital quality in term of patient and hospital management

6. In addition, question from M&E system could be used as hypothesis to initiate medical research in the hospital.

7. With M&E system, hospital data are potentially well use in the sake of hospital development and the contribution to medical science in Cambodia.

8. Acknowledgement

1. The conference organizing committee

2. International University

3. Survey teams

4. Hospital management teams

5. Samples


Thank
you

Determinants of Children Under-Five Mortality in Cambodia (2010 - 2014)

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Abstract

Despite declining children under-five mortality (U5M) in the last ten years, developing countries continue to face challenges to meet sustainability development goals. To measure determinants of children U5M in Cambodia we use the 2010 and 2014 demographic and health surveys (DHS), the retrospective cohort life table of childbirths five years preceding the surveys, and multivariate Weibull regression. Results show three determinants associated with lower U5M: longer childbirth interval, maternal antenatal care visit, children fully receive vaccination; but, older maternal age, and higher education level of the mother associated to U5M. Two emerging determinants: mother use of a family planning method and mother living in urban areas were less significantly associated with U5M. The study concludes that Cambodia should continue the current child health program interventions, pay more attention to the new determinants, and suggests conduct a study on the association of mother's education and U5M.

Key Words: Cambodia; determinants of U5M; demographic and health survey; child survival

Determinants of Children Under-Five Mortality in Cambodia:2010-2014

December 14-15, 2018

Dr. Ly Vanthy

Outline

- Introduction
- Objectives
- Methods
- Results
- Limitations
- Conclusion & Recommendations

1. Introduction

Overview of U5MR

- 5.9 million U5 died in 2015, > 1/2 could be prevented or treated
- UNs Inter-agency group reported globally reduced U5 deaths from 16,000/day (1990) to 35,000/day (2015)
- Children 14 times die before the age of 5, mainly Sub-Saharan Africa World leaders renewed their commitment, post-2015 “MDG” to 2030 “SDG”:
  - Reduce neonatal mortality to 12 deaths per 1,000 Lbs
  - Reduce U5M to 25 deaths per 1,000 Lbs

WHO, 2016; WB, WHO, UNICEF, United Nations, 2015

Tools to Measure U5MR

- Inter-agency Group for Child Mortality and WHO-UNICEF Child Health Epidemiology Reference Group, defined methods and sources of child causes for death in three major categories:
  - Vital registration provides annual series of neonatal, infant and U5MR
  - Birth histories (mainly DHS surveys) provide “direct” estimates of neonatal, infant mortality rates and U5MR
  - Summary birth histories (DHS surveys, other household surveys such as UNICEF, and population censuses) provide “indirect” estimates of U5MR

WB, WHO, UNICEF, United Nations, 2015

Cambodia Responds to U5M

- Agricultural country, 181,035 m^2, population 15,250,000 population, 19.5% in urban areas
- Cambodia remains one of the poorest in Asia, although economic growth (projected to reach 6.9 percent in 2017 and 2018, with GNI per capita 1,070 US$)
- Health Services Delivery
  - Cambodia has a mixed health delivery system, over 8,000 formal private providers/facilities (Dec. 214) besides public facilities
  - The private non-for-profit sector also plays an important role in health service delivery in Cambodia

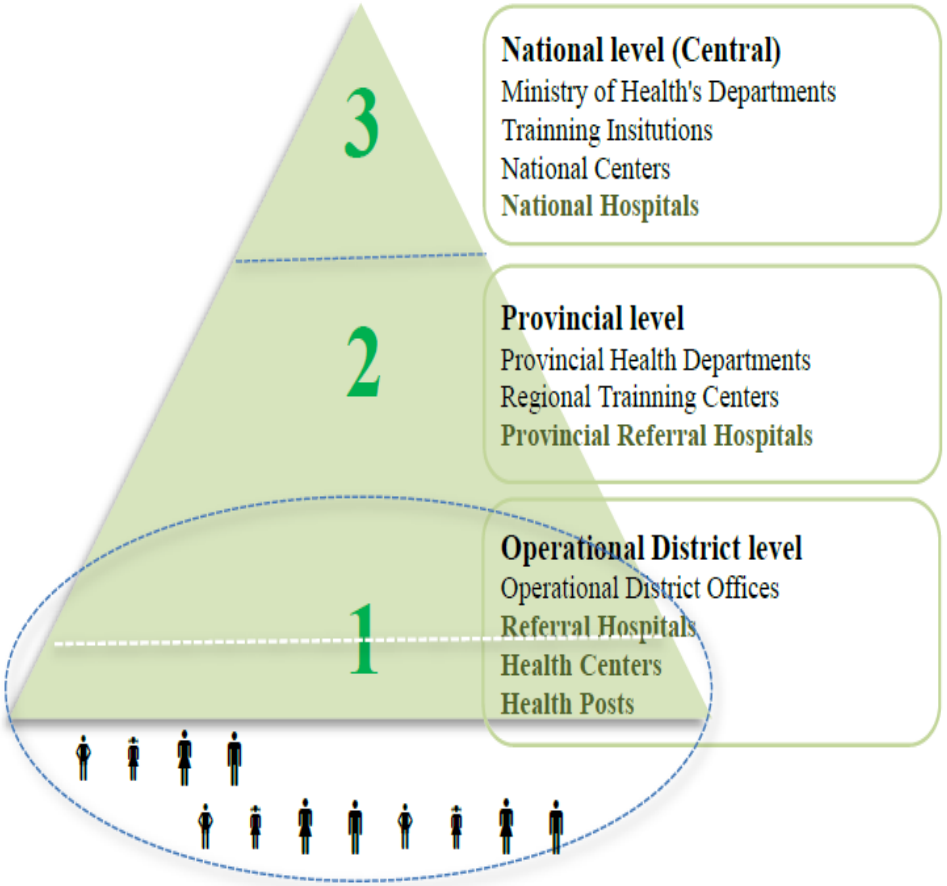
WB, 2017

Cambodia Responds to U5M Con.t

In the last ten years, there have been great improved of child and mother health

- The percentage of births by skilled health personnel in the last five years (70.8% to 78.6%(2016).
- 65%(2014) exclusively breastfed in the firs six months, 60% in 2005
- 91% (2016) of children aged 6-59 months received Vitamin A supplementation, 90% in 2015
- Immunization, children under one year old received three doses of (DPT3), (HepB), and B(Hib) increased 94.57% (2015) to 96.25%(2016)
- "Zero-case" for measles was notified in November 2011 and Cambodia was certified as 'measles free' by WHO in May 2015.

Public Health System



Annual Health Statistics Report, MOH, 2016 and MoH HSP3: 2016-2020

Characteristics Associate to U5MR in some African Countries

Determinant/Country	Ghana (Philomena, 2015) (60)	Rwanda (Agnes , 2015) (50)	Tanzania (Mpoki, 2016) (67)	Zambia (Kalumbi, 2015) (75)
Residence (Rural)	75	70	86	85
Mother education (no education)	92	89	83	109
Wealth quintile(lowest)	92	84	78	100
Child sex (Boy)	78	70	80	87
Mother's age at birth (<20 yrs.)	84	83	93	90
Birth order(>7)	118	80	105	95
Previous birth interval (<2 yrs.)	109	99	112	128

Characteristics Associate to U5MR in some Asian Countries

Determinant/ Country	India (Preeti Sudan, 2016) (50)	East-Timor (Ru, 2016) (41)	Lao PDR (Eksavang , 2012) (78)	Bangladesh (Syed , 2014) (46)	Nepal (Kiran , 2017) (39)
Residence (Rural)	55	44	100	49	44
Mother education (no education)	60	48	116	50	60
Wealth quintile (lowest)	59	55	120	53	62
Child sex (Boy)	52	46	95	44	36
Mother's age at birth (<20 yrs.)	104	103	112	66	61
Birth order(> 4)	117	38	132	50	56
Previous birth interval (<2 yrs.)	75	50	116	46	78

Justifications

Country	Under-five mortality rate (U5MR) with 90 percent uncertainty interval (deaths per 1,000 live births)									Millennium Development Goal target for 2015	Annual rate of reduction (ARR) (percent) 1990–2015		
	1990			2000			2015						
	U5MR	Lower bound	Upper bound	U5MR	Lower bound	Upper bound	U5MR	Lower bound	Upper bound		ARR	Lower bound	Upper bound
Cambodia	117	109	126	108	100	118	35*	20	41	39	5.6	4.1	7.2
Lao PDR	162	148	179	118	105	132	67	49	90	54	3.6	2.4	4.8
Myanmar	110	101	121	82	76	90	50	38	65	37	3.2	2.0	4.4
Viet Nam	51	47	55	34	31	37	22	21	23	17	3.4	3.1	3.8
Thailand	37	34	40	23	20	26	12	8	20	12	4.4	2.4	6.3
Malaysia	17	16	17	10	10	10	7	6	8	6	3.5	3.0	3.9
Singapore	8	7	8	4	4	4	3	2	3	3	4.2	3.3	5.1

UN Inter-agency Group: WHO, UNICEF, BW, United Nations DESA/Population Division, reported in 2015, and *. CDHS 2014

Although U5MR has declined for the last 10 years, but Cambodia U5MR is still higher than other countries in the region, therefore this paper aims to ensure Cambodia keeps doing the right ways to closely monitor the main, persistent and emerging determinants of children U5M

2. Objectives

Objectives

- **Primary objective:** : Define persistent and emerging determinants of children under-five mortality in Cambodia and compare those determinants in 2010 and 2014

- **Specific Objectives:**
  - Examine children, mother, household's characteristics, and health and heath care indicators associate with U5M
  - Compare key determinants of U5M in 2010 and 2014

4. Methods

Sampling Technique of CDHS

Sampling Design	CDHS 2010	CDHS 2014
Sampling Frame	2008 Cambodia General Population Census by NIS	2008 Cambodian General Population Census, and updated in 2012 by NIS
# household	16,344 households, only 15,667 completed the Household Questionnaire, response rate 99%	16,356 households, only 15,825 completed the Household Questionnaire, response rate 99%
# of women	19,237 women were identified eligible for the interview, response rate 98%	18,012 women were identified as eligible for the interview, response rate 98 %
# of men	8,665 eligible men identified in every other household, response rate 95%	5,484 eligible men identified in every third household, response rate 95%

Demographic and Health Surveys (CDHS) 2010&2014 are a population based cross sectional study

Data Collection and Data Management

Training and Field Works	CDHS 2010	CDHS 2014
# of field work team	19 (6 people/team)	19 (5-6 people/team)
# of training days	26 days of training, plus 4 days of field practice	26 days of training, plus 4 days of field practice
Duration of data collection	23 July 2010 to 20 January 2011	June 2 to December 12, 2014
Completion of data entry	Completed on 5 February 2011	Completed on January 23, 2015.

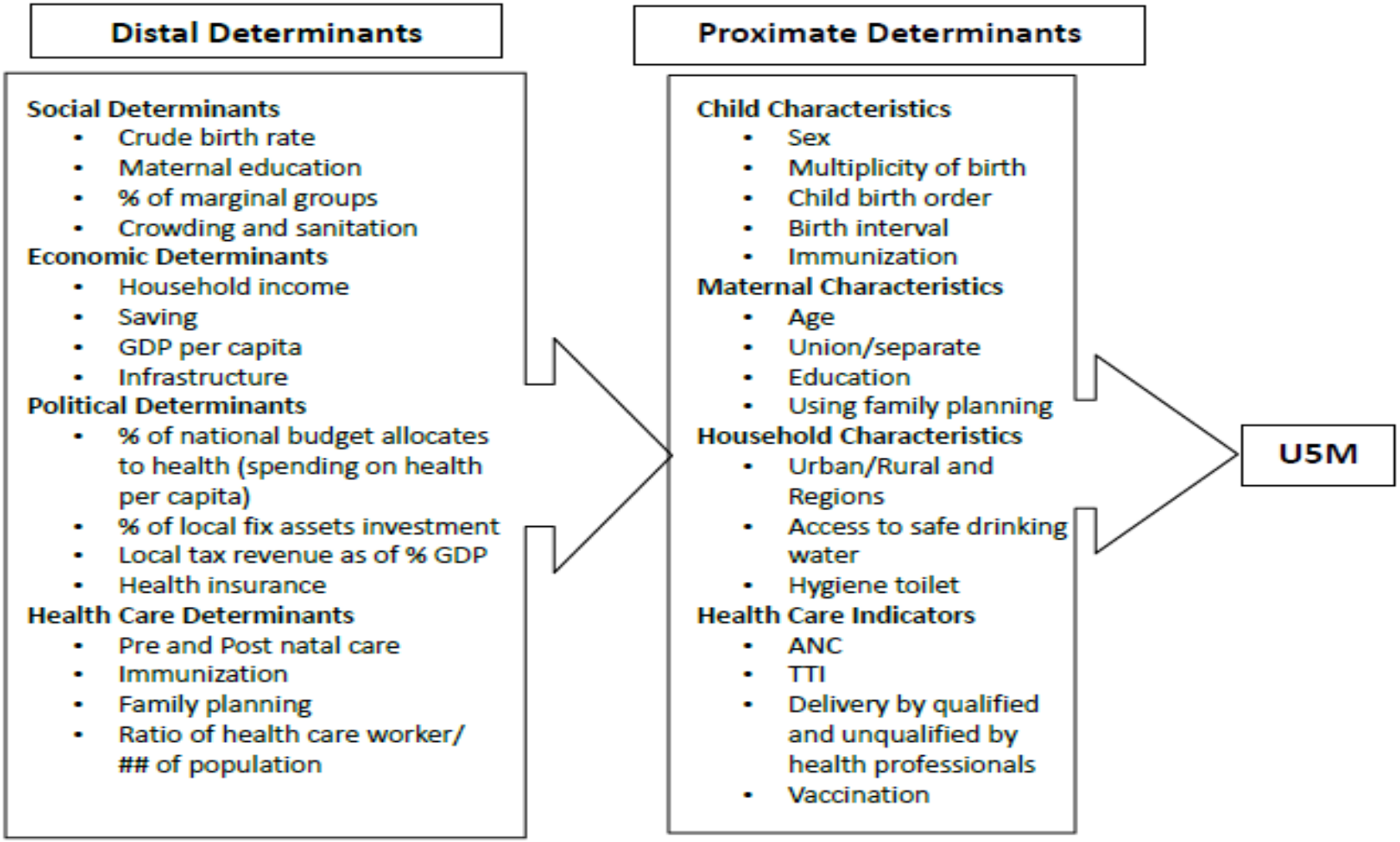
Data Analysis Methods

- Used KHKR60FL & KHKR70FL files
  - KH Cambodia(country code)
  - KR Interviewed women with information of U5 children
  - 6 & 7 6^{th} & 7^{th} of DHS
  - 0 1^{st} Version
  - FL Flat type file
- The KH (Woman's Questionnaire) divided into four groups per variables of interest
  - Children characteristics
  - Mother characteristics
  - Household characteristics
  - Health and health care characteristics

Statistical Treatment

- Covariates and Determinant Variables
  - Recode and rename are used for variable of outcome and covariate, and generate variables of survival outcome
  - Use weight to restore the representativeness, and Weibull hazard regression
  - Run univariate, multivariate, and use HR to determine factors associated with risk of dying, in STATA version 12.0
  - Dependent Variable: U5M, and Independent Variables: four main characteristics
  - Present the results hazard ratios (HR) with 95% CI and P-value

Analytical Plan



Adapted the Conceptual Framework of Social, Economic, Political, and Health System Determinants of Child Survival adapted from Mosley and Chan (1984)

5. Results

Sample Size for Analysis

Sample	CDHS 2010	CDHS 2014
Eligible Samples to be analyzed	8,232	7,165
# of Death Children	379	175

Persistent Determinants of U5M of CDHS 2010 and 2014

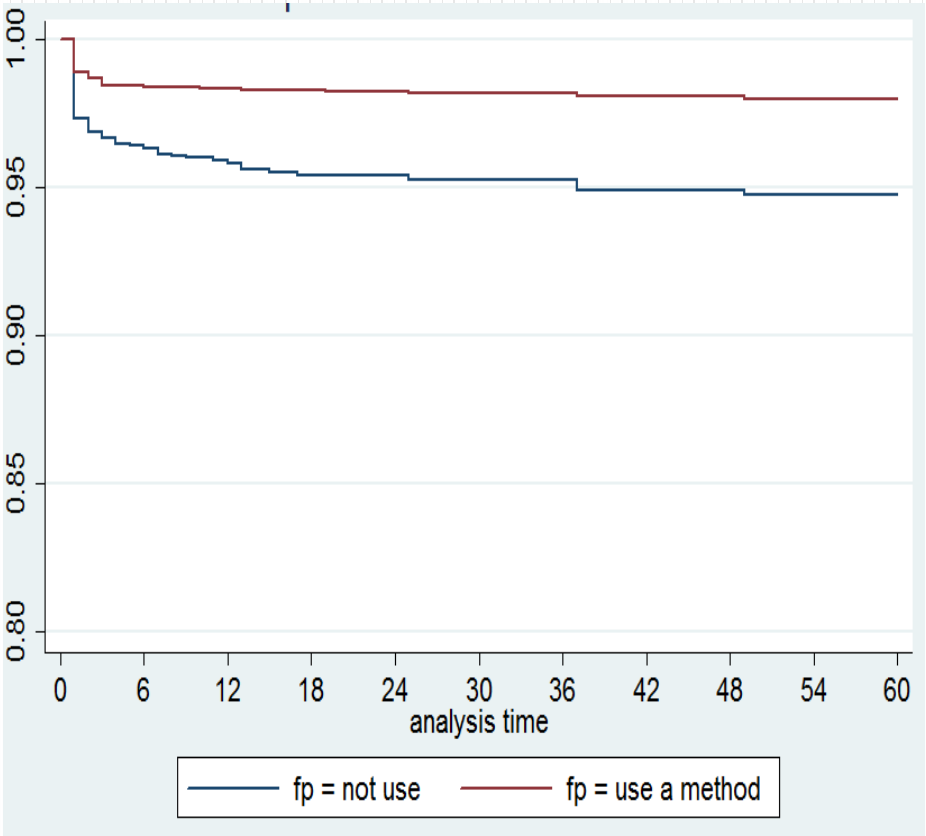
Characteristics with statistical significant	CDHS 2010		CDHS 2014	
	Hazard Ratio	95% CI & P-value	Hazard Ratio	95% CI & P-value
Child's birth interval				
Birth Interval <2 yrs	1.00			
Birth Interval 2-3 yrs	0.49	0.32-0.76(p=0.002)	0.48	0.24-0.95(p=0.036)
Birth Interval >3 yrs	0.59	0.41-0.86(p=0.006)	0.47	0.25-0.87(p=0.016)
Mother's age at childbirth				
Mother age <20 yrs	1.00			
Mother age 20-29 yrs	1.04	0.65-1.66	1.48	0.79-2.76
Mother age 30-39 yrs	1.58	0.89-2.79	2.11	0.98-4.54
Mother age >40 yrs	3.55	1.80-7.03 (p=0.000)	3.21	1.13-9.08(p=0.028)
Mother's Education				
No education	1.00			
Primary	1.41	1.04-1.91(p=0.027)	1.00	0.62-1.62
Secondary or higher	1.86	1.16-2.97(p=0.009)	1.95	1.05-3.62(p=0.034)
Prenatal Care				
No ANC at last birth	1.00			
Have ANC	0.42	0.29-0.62(p=0.000)	0.33	0.18-0.59(p=0.000)
Child's Vaccination Status				
Fully immunized	1.00			
Not fully immunized	1.64	1.40-1.93(p=0.000)	3.90	3.13-4.86 (p=0.000)

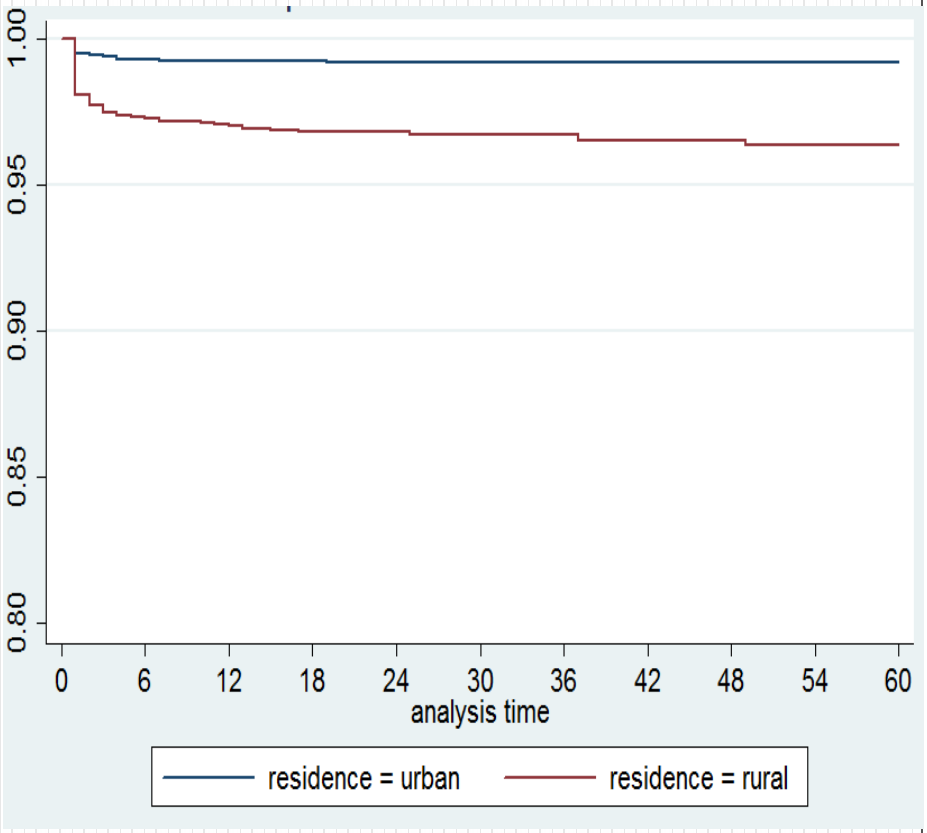
Persistent Determinants and other studies

- Birth intervals of 2-3 years and more than 3 years associated to decline U5M, similar to a study by using DHS data from 17 developing countries (Rutstein, 2005), and (Becher, 2004),and (SO, 1990).
- Older maternal age (more than 40 years old) associated to increase U5M, similar to a few studies (Hong, 2007), (Rutstein, 2000), and (Frieede, 1988).
- ANC association of antenatal care with lower childhood mortality has been documented (Rathavuth, 2007) and (Hellingera, 1985), similar to our findings
- Children fully immunized have greater lower risk to U5M, similar to several studies (Rathavuth, 2009), (Rutstein, 2000), also a recommendation from World Health Organization (FE Andre, 2008).
- Mother's education has lower risk of U5M (Cornelius, 2013), (Gbenga, 2012) and (Rathavuth Hong, 2009); contrarily, in both surveys in Cambodia, mother who has higher education (secondary or higher) had slightly higher risk to U5M.

  <= a possible explanation on this results are affected by social media & the study collects only children death but does not review the results of recovering sick children from mother with primary and secondary education levels.

Emerging Determinants to U5M in CDHS2014





Emerging Determinants and Other studies

- Children who born from mothers who are currently use a family planning method have lower risk to U5M, similar to studies (Unnati , 2012), (AGI, 2002), and (Bongaarts, 1987).

- Children who born from mothers who live in rural areas are associated with high U5M, similar results to studies (Kalumbi, 2015), (Albina, 2011), and (Yusuf, 2009).

6.Limitations

Limitations and Overcomes

- The DHS dataset were collected for live births during the five years preceding the surveys

  => limit to analysis some variables (socioeconomic status, health care indicators)

- The DHS is the cross-sectional and retrospective study design

  => so some of the covariates are associated directly with the time of the child's birth and not the time of death (multiplicity of birth, delivery assistance, mother's age at childbirth,).

- Reflect conditions at the time of survey not at the time of the child's birth or death (mother's level of education, marital status, use of contraceptive, household sources of water, type of toilet).

- <u>To overcome these limitations:</u>

  => One of WHO recommendation methodologies

  => Samples are very large and representative at national, urban-rural, and regional levels, with statistical power sufficient for the finding to be generalized

  => Use Weibull regression model analysis helps to address these limitations.

7. Conclusion & Recommendations

Conclusion & Recommendations

- No doubt U5M in Cambodia dropped significantly from 2010 to 2014

  => decline resulted in large part from the substantial improvements in public health interventions and services

- Continue toward a reduction of U5M in Cambodia

  => per current interventions but need to take more attention to emerging determinants, plus mother who live in rural areas

- Because mother's education has been one of persistent determinants in 2010 and in 2014 surveys' results

  => a further and in-depth study focus on this topic is suggested.

Maternal Knowledge and Practice on HIV-Exposed Infants in Cambodia

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Abstract

Despite the high coverage of HIV service for pregnant women (PW), Cambodia has faced the low uptake of HIV service for HIV-exposed infant (HEI), only 35% of HEI received a first HV-DNA-PCR test and 41.3% started on Cotrimoxazole before the age of two months (eMTCT-Roadmap 2018). This study explores the knowledge, practice of HIV-infected PWs and the providers' perception about the low service uptake for HEIs. The mixed method design was used. Quantitative analyzed data obtained from the national follow-up-database between 2014 and 2016 using STATA14, supplemented by qualitative study using NVivo10 to analyze data of in-depth-interview with 38 HIV-infected PWs and 9 providers at local antenatal and antiretroviral therapy clinics in Battambang, Siem Reap and Phnom Penh. Among 1,118 of HIV-infected PWs registered, HEIs received 72% ARV prophylaxis, 57.3% HIV-DNA-PCR1, 56.2% Cotrimoxazole, 7.6% HIV-DNA-PCR2 and 7% HIV-antibody test. Three reasons that were found from qualitative supports those low uptake are: first, lack of transportation and the negative perception of women towards providers. Second, lack of women's knowledge and misunderstanding among providers. Third, lack of trained staff and follow-up mechanism in place to track HEIs. Only 7.6% of HEI had done HIV test after they stopped breastfed and 7% of the total HEIs had done HIV-antibody tests which is a big concerns among those HEIs to make final diagnosis. Misunderstanding of HEI's service unclear role were broadly occurred among HIV-infected PWs and providers in four provinces. Knowledge and messages about HEI's service should be promoted and reinforced use in early ANC visit and at ART clinic. Messages should be clear and standardize. Follow-up mechanism should be strengthened.

Keywords: Knowledge, Practice, HIV-infected PW, HIV-Exposed Infant (HEI).

សាកលវិទ្យាល័យ អន្តរជាតិ
INTERNATIONAL UNIVERSITY

ចំណេះដឹង និងការអនុវត្តន៍របស់ម្តាយផ្ទុកមេរោគអេដស៍ចំពោះកូនប្រឈមនៅកម្ពុជា

MATERNAL KNOWLEDGE AND PRACTICE ON HIV-EXPOSED INFANTS IN CAMBODIA

THE 5TH INTERNATIONAL MEDICAL CONGRESS

Ms. Soch Kunthea

December 14th 2018

Outline

- Background of the Study
- Methods
- Results and Discussion
- Conclusion and Recommendation

BACKGROUND OF THE STUDY

ELIMINATE VERTICAL HIV TRANSMISSION IS A GLOBAL POLICY

- Cuba Validated as the first country to officially declared successful of eMTCT, June 30th 2015
- Thailand Announced as the first country in Asia to validate the eMTCT by WHO, June 2016
- Malaysia declared Successful of eMTCT Validation In October 2018
- Cambodia eMTCT's Validation plan by 2025. The Cambodia eMTCT Roadmap was approved and launched on November 30th 2018

Cambodia's Elimination Goals By 2025

Objectives

- **Eliminate** new **HIV** and **congenital syphilis** infections through mother-to-child transmission
- **Reduce** **mortality** and **morbidity** of HIV-exposed infants through **early infant diagnosis** and **treatment**
- **Reduce** **mortality** and **morbidity** of HIV-positive children

Impact Indicators

- ✓ <50 MTCT cases syphilis per 100,000 live births
- ✓ <50 MTCT cases HIV per 100,000 live births

and

- ✓ MTCT HIV <5% for BF or <2% FF

Process Indicators

- ✓ ANC1 > 95%
- ✓ Testing > 95%
- ✓ ART > 95%
- ✓ Syphilis Treatment > 95%

Source: eMTCT Launch by NCHADS, NMCHC, slide presented by Dr. Kim Rattana, National PMTC Manager, November 30th 2018, Phnom Penh, Cambodia

PMTCT Program Response

PMTCT Secretariat

Year 1999

SD NVP to mothers & baby at L&D

.Pilot in NMCHC, 2001, Opt-in C-T

.Scaled: 8 sites, 2003

Year 2000 - 2003

PMTCT Guideline 2005

Dual (ARV) Pro.

Mothers:

.CD4<250: HAART;

.CD4 >250: ARV Pro. (AZT at 28wk GA) + (NVP every3h thru L&D) + (1WK AZT,NVP PNC)

HEIs:

SD NVP + AZT 1 or 4 wk based mother was on AZT > or < 4 wk

Expanded training, scaled: 29 sites

Year 2004 - 2005

.LRA: NCHADS-CHAI: 5-OD (PRV, TAK)

.DP: NMCHC-USCDC: 15-HC, 2-RH (BTB)

HPITC launched

Opt-out, Scaled: 247 sites

Year 2006 - 2009

PMTCT Guideline 2010

(Option B)

Mothers:

.CD4≤350: ART;

.CD4>350: ARV pro. at 14wk GA.

HEIs:

.NVP 3-wk regardless feeding options

.continue NVP until mother's CD4>350

PAC Guideline

Introduced C/PITC

scaled: 921 sites

Year 2010 - 2013

PMTCT Guideline 2016

(Option B+, BLR)

Mothers:

Life-long ART "Test & Treat" regardless CD4 & GA

HEIs:

.HR HEIs-BF: NVP12wk,AZT 6wk,

.HR HEIs-FF: NVP,AZT 6wk,

-LR HEIs-FF: NVP 6wk

B-IACM, PNTT in 2015 HTS Guideline development

Scaled: >1000 sites

Year 2014 - 2017

Abbreviation: SD=single dose; NVP=Nevirapine; LRA= Linked response Approach; DP=Demonstration Project; HPITC=Health provider initiative testing and counseling; PAC=Pediatric AIDS Care; HR= High Risk; BLR=Boosted Linked response; GA=Gestational age; HEI=HIV-exposed infants; LR=Low risk; ANC=Antenatal care; HTS=HIV Testing Service; PNTT=Partner Notification Testing and Tracking; CPITC=community/PITC; AZT=Zidovudine; wk=week

PMTCT Service Delivery, National Guideline 2010

HC/RH | **Maternity Ward** | **Pediatric AIDS Care**

W/R/D

ANC Visit (1, 2, 3, 4, 5+)

Delivery

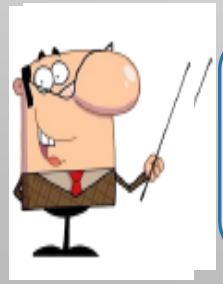
ARV Pro. Enrollment PAC

CTX, PCR1@ 6wk

PCR2@6 wk> quit BF

HIV AB test@ 18mons

HIV TESTING → ART → **HIV Testing: PCR, Antibody**
OI Pro: Cotrimoxazole



STANDARD RISK	Intensification ART	Normal Delivery	NVP 3wk	CTX starts from 6wks, stop when the result of test is negative	HEI HIV+ get ART immediately before confirmed test

Abbreviation: HC= health centre; RH=Referral Hospital; ANC=Antenatal care; W/R/D= PMTCT Code number; ART= Antiretroviral therapy; Neo.=Neonatal; ARV=Antiretroviral; CTX= Cotrimoxazle; PCR= Polymerase Chain Reaction; AB test= HIV-antibody test; OI=opportunistic infection; NVP= Nevirapine; AZT= Zidovuldine; HEI= HIV-exposed infant.

PMTCT Service Delivery, National Guideline 2016

HC/RH

ART

Maternity Ward

Pediatric AIDS Care

W/R/D

ANC visit
(1, 2, 3, 4, 5+)

Delivery

ARV Pro.,
PCR1@birth

CTX,
PCR2@
6wk

PCR3@
6wk>
quit BF

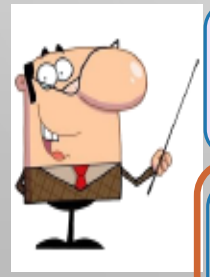
HIV AB
test at
18 mons

HIV TESTING

ART

HIV Viral Load @ 3 months of Treatment

HIV Testing: PCR, Antibody
OI Pro: Cotrimoxazole



STANDARD RISK	Intensification ART	Normal Delivery	NVP 6wks
HIGH RISK	Intensification ART	Normal Delivery	BF: NVP 12wk + AZT 6wk FF: NVP + AZT = 6wks

CTX starts from 6wks, stop when the result of test is negative

HEI HIV+ get ART immediately b4 confirmed test

Problem Statement

The coverage of HIV testing and ART among PWs were high (93% knew HIV status; 77% on ART), the HEI's service were low:

- 75% of total HEIs had ARV prophylaxis,
- 35% of total HEIs received HIV-DNA-PCR1 (infants<8 weeks of age),
- 41.3% of HEI started on CTX before the age of 2 months,
- MTCT rate 6.2% among HEIs and 13% among Breastfed HEIs

Source: eMTCT Roadmap, 2018

OBJECTIVE: to Explore Knowledge and Practice of HIV-infected Pregnant Women and Providers' Perception about the low uptake of HEI's Service

Methods

Mixed Methods

- Quantitative: NCHADS Database for HIV-infected PWs and HEIs, 2014-2016 (n=1,118)
- Qualitative: IDI with 38 HIV-infected PWs, 9 providers in 4 RHs: ROKA, Sampov Loun, Social Health Clinic (SHC) of Battambang, Siem Reap province and PHN.
- Data Analysis:
  - Quantitative: Descriptive using STATA 14
  - Qualitative: Content analysis using NVivo 10
- Data triangulation: merge results: QAN & QUAL
- Ethical Consideration: Approval from NECHR

RESULTS AND DISCUSSION

Table 1: Characteristic of HIV-infected PWs Registered in NCHADS' Database 2014-2016 (N=1,118)

		Rural		Urban		Total	
Provinces		Number	%	Number	%	Number	%
	Battambang	276	46.6	132	22.2	408	34.3
	Banteaymeanchey-Odormeanchey	121	20.4	115	19.3	236	19.9
	Pailin	15	2.5	24	4	39	3.3
	Siem Reap	26	4.4	110	18.5	136	11.5
	Pursat	54	9.1	41	6.9	95	8
	Kampong Cham	70	11.8	73	12.3	143	12
	Sihanuk	21	3.6	16	2.7	37	3.1
	Phnom Penh	9	1.5	85	14.3	94	7.9
	Total	592	100	596	100	1,188	100
Age group							
	25 or below	99	16.7	120	20.1	219	18.4
	26 to 35	325	54.9	332	55.7	657	55.3
	36 and above	168	28.4	144	24.2	312	26.3
	Total	592	100	596	100	1,188	100
Actual Delivery							
	Had delivery information	390	73.7	375	70.6	765	72.2
	No delivery information	139	27.3	156	29.4	295	27.8
	Total	529	100	531	100	1,060	100
Place of delivery							
	Referral Hospital	355	67.1	319	60.1	674	63.6
	Health Centre	23	4.3	14	2.6	37	3.2
	Home	11	2.1	8	1.5	19	1.7
	Private clinics	27	5.1	54	10.2	81	8.5
	Unknown	113	21.4	136	25.6	249	24.2
	Total	529	100	531	100	1060	100
Feeding Choices							
	Breast feeding (BF)	159	30.6	73	15.1	232	22.4
	Formula feeding (FF)	192	37.0	264	51.0	456	44.0
	Mixed feeding (MF)	29	5.6	17	3.3	46	4.4
	Unknown	139	26.8	164	31.7	303	29.2
	Total	519	100	518	100	1,037	100

Table2: Characteristics of HIV-infected PWs (N=38) And Providers (N=9) in In-depth Interview

		Women		Providers	
		N=38	%	N=9	%
Provinces					
	Battambang	13	34.2	4	44.5
	Siem Reap	16	42.1	3	33.3
	Phnom Penh	9	23.7	2	22.2
Age group					
	25 or below	5	13.2	0	0
	26 to 35	17	44.7	0	0
	36 and above	16	42.1	9	100
Occupation					
	Housewife	13	34.2	0	0
	Workers	11	29	0	0
	Sallers	5	13.2	0	0
	Farmer	4	10.6	0	0
	Entertainment worker	2	5.3	0	0
	Others	3	2.6	0	0
	ANC counselor/clinicians	0	0	3	33.3
	ART counselor/clinicians	0	0	6	66.7
Education					
	none	13	34.2	0	0
	grade 1-6	15	39.5	0	0
	grade 7-9	7	18.4	0	0
	grade 10-12	3	7.9	0	0
	Medical Doctor	0	0	4	44.5
	Medical Assistant	0	0	1	11.1
	Midwife	0	0	2	22.2
	Nurse	0	0	2	22.2

Table 3: The Utilization of HEI' s Service, NCHADS Database 2014-2016

Factors (	HIV-Exposed Infants Received their Requirement Services				
	Received NVP	Received PCR1	Received CTX	Received PCR2	Received AB test
Overall N (%)	747 (72%)	594 (57.3%)	583 (56.2%)	129 (12.3%)	73 (7%)
Age (n=1,118, %)					
≤ 25 (18.4)	130 (17.4)	105 (17.7)	104 (17.8)	23 (17.8)	10 (13.7)
26 - 35 (55.3)	411 (55.0)	327 (55.1)	320 (54.9)	64 (49.6)	37 (50.7)
≥ 36 (26.3)	206 (27.6)	162 (2731)	159 (27.3)	42 (32.6)	27 (35.6)
Pearson Chi2 , P. value	Pr = 0.251	Pr = 0.638	Pr = 0.724	Pr = 0.295	Pr = 0.161
Rural - Urban (n=1,118, %)					
Rural(50.1)	384 (51.4)	318 (53.5)	312 (53.5)	52 (32.9)	37 (50.7)
Urban(49.9)	363 (48.6)	276 (46.5)	271 (46.5)	27 (17.1)	36 (49.3)
Pearson Chi2 , P. value	Pr = 0.132	Pr = 0.009	Pr = 0.011	Pr = 0.066	Pr = 0.910
Actual Delivery (n=1,060, %)					
Had information (72.2)	705 (94.4)	555 (93.4)	553 (93.3)	129 (100)	73 (100)
No information (27.8)	42 (5.6)	39 (6.6)	40 (6.7)	0 (0)	0 (0)
Pearson Chi2 , P. value	Pr = 0.000	Pr = 0.000	Pr = 0.000	Pr = 0.000	Pr = 0.000
Feeding Choices (n=1,037, %)					
Breastfeeding (22.4)	227 (30.4)	184 (31.0)	179 (30.7)	52 (40.3)	17 (23.3)
Formula feeding (44.0)	450 (60.2)	365 (61.5)	358 (61.4)	50 (38.8)	47 (64.4)
Mixed feeding (4.4)	44 (5.9)	43 (7.24)	43 (7.4)	27 (20.9)	9 (12.3)
Unknown (29.2)	26 (3.5)	2 (0.3)	3 (0.5)	0	0 (0)
Pearson Chi2 (3) = 48.4400, Pr = .000	Pr = 0.000	Pr = 0.000	Pr = 0.000	Pr = 0.000	Pr = 0.000

Note: NVP=Nevirapine; PCR= Polymerase Chain Reaction ; CTX=Cotrimoxazole; AB test= Antibody test

The Utilization of Nevirapine (NVP)

Main Barriers	72% HIV-exposed Infant (n=474) received NVP. Those women who reported having actual delivery and feeding information were more likely to report NVP (Chi2 (3) = 48.4400, Pr = .000). Qualitative data supported this finding.	
	HIV-infected Women	**Providers' Perception**
Knowledge	"I do not know what kind of services my child should receive; I think after birth I will ask to provider, OR, I bring my baby there…but what I could recall I must deliver through cesarean section and feed by child formula milk...I need to give medicine to my child", W38. "I don't know what HEI's service; I'll follow what are told",W18. "I remember only vaccination…and testing at birth…test every 6 mons…use syrup 1.5mons" W37	"We told PWs a few key messages; we expect the maternity staff would explain more…I think that women could be possible to forget if I gave them a lot of messages at HC", P2. "What I remember if mother are known HIV-positive give [NVP] less but if mother are newly identified, give more NVP (6 weeks)", P5 "The high risk baby gives dual ARV pro. if mother had ART <4 weeks, breastfed & her VL>1000cell/ml", P9 "In general, women do not know the services [for HEIs], it is the role of providers to let women aware of. It should be responsible by ANC and maternity service about the use of ARV prophylaxis and cotrimoxazole", P3. "I, at Maternity, give only 6 weeks ARV pro. and continue at PAC for another 6weeks if a baby born from high risk mothers", P7
Practice	"To prevent my child, first take medicine regularly; second, give medicine for about one month and a half…bring her to see provider monthly until she reached one year and a half", W17. "my child was given syrup…I don't know what was that"W1	

The Utilization of First HIV-DNA-PCR (PCR1)

	N = 1, 037	
Main Barriers	57.3% HIV-exposed Infant (n=594) received PCR1. Those women who reported having actual delivery and feeding information were more likely to report PCR1 (Chi2 (3) = 48.4400, Pr = .000). Qualitative data supported this finding.	
	HIV-infected Women	**Providers' Perception**
Knowledge	"I was not told in advance about services my child will get", W26 "I was told to test my child at 1mon and a half, at 6 mons, at18 mons." W1 "My child tested negative…I was told to test once again", W32	"We did not explain the utilization of HEI service, we thought women will not remember, we will explain when women show up for delivery; …at delivery…we give medicine…refer [HEIs] to PAC for further service needed", P7 "If women understand the importance of services their infants' needs, they would follow; however, most women don't know the services for their infants, they can't decide" P8 "Lost HEIs, most cases occurred among women who do not have married certificate, factory workers and did not disclose their HIV-status" P4 "If a woman has drug user partner; women do not care for HEIs', P8
Practice	"I am sick but I don't have money to travel to hospital; I owe Mototaxi 300 Baht up to now", W13. "My husband threaten me to never bring my children to hospital…because he hate provider … once I gave birth on the car without help when I was referred to RH"W7	

The Utilization of Cotrimoxazole (CTX)

	N = 1, 037	
Main Barriers	56.2% HIV-exposed Infant (n=594) received Cotrimoxazole (CTX). Those women who reported having actual delivery and feeding information were more likely to report CTX (Chi2 (3) = 48.4400, Pr = .000). Qualitative data supported this finding.	
	HIV-infected women	Providers' Perception
Knowledge	"I was told to give Cotrimoxazole until my child had 3 times negative HIV-tests", W9 "Every visit, beside the explanation of adherence and condom use; provider say nothing" W13	"I told women to take CTX daily…", P8 "Because my site do not give birth to HIV-infected women, I thought the HEI's service message should not be given to women, just refer hem to hospital", P2 "Baby less than one year was referred to NPH and they will be enrolled here [ART clinic] after a year if found positive", W3 "Here, we can do tests for HEI as other PAC does" W4
Practice	"I got two bottles of CTX to give my child for 40days; next time I came I will be given the tablet instead", W29 "Providers at PAC are rude, I was not told [to bring my child] , I was blamed if I did not bring him in… my child was injected 3-4 times to get a correct one…they collected two syringe of blood but [they] did not tell me for what…we waited until 11am"W26	

The Utilization of Second HIV-DNA-PCR (PCR2)

	N = 1, 037	
	12.3% HIV-exposed Infant (n=594) received PCR2. Those women who reported having actual delivery information and BF were more likely to report PCR2 (Chi2 (3) = 48.4400, Pr = .000). Qualitative data supported this finding.	
	HIV-infected Women	Providers
Knowledge	"Provider told me to breast my child for 6 months… but I do not have money to buy formula milk",W7 "I fed my child my breast milk for 3 months.; then my child tested negative, I was told to not bring my child to clinic any more. Now my child is 5 Yrs. He had never tested again" W19	"I think the reason women unaware of HEIs service due to some women might first not be interested in …second, it might not clear explanation from HC providers", P7 "BF can give to baby up to 1,5Yrs or 2Yrs…some women wanted to breast their children but ANC/ Maternity told them to give FF… this can get women confuse; I want ANC/MAT to corporate with our clinic [ART clinic] and use one message"P3 "About tests… I am not clear…baby tests once and again at 7 and half months", P8
Practice	"My children have done first test, it is time to have a second test but I do not have money to travel there…and I have nothing [to eat] at home"W6. "BF is much better…but I hesitate to apply because I could not believe in it", W1	

The Utilization of HIV-antibody Test (AB Test)

	N = 1, 037	
Main Barriers	7% HIV-exposed Infant (n=73) received HIV-Antibody test. Those women who reported having actual delivery information and feeding options were more likely to report AB test (Chi2 (3) = 48.4400, Pr = .000). Qualitative data supported this finding.	
	HIV-infected women	**Providers' Perception**
Knowledge	"I need to follow-up my child until he reached 1 year as I had done with my previous one; my older child is negative…now is 2 years and a half", W17. "I was told to bring my child to test at least 5 times up to 2 years started from one month and do again in between 2 to 3 months", W22.	"Asked women whether they did PCR1 to their children… if they said yes…then I told [them] to bring for AB-test at 1 year and half but I lost a lot of children for AB-test" P3.
Practice	"I will never bring my kids to see providers due to the loud providers stared angrily at me, blaming me…no…unless they call for" W6. "After a month of blood testing, my husband was called in and asked whether the child name's…is mine…then told my husband that my child has HIV-positive, ask to meet them tomorrow…my husband and I got shock", W5	

Additional Barriers

- **Socio-Economic:**

  "One homeless patient living in the forest visited clinic irregularly and one patient live at the border was always missed appointment due to the lack of transportation cost", P1.

  "Woman live on husband' supports … she is worried that she would be abandoned or stopped supporting her living", P4.

- **Workload and Staff shortage:**

  "Lack of human resource remains a challenge, we have 4 to 5 staff who could provide service to only 100 patients per day instead of 300 patients from the list", P9.

- **Weak Data Linkage and Data management:**

from ANC, Delivery, ART to Pac services

  "We use paper base registration, mobility could lead to data duplication and missing", p7.

- **Poor Follow-up Mechanism:**

No system in place for HEI reducing of CB prevention, care and support network

  "I told women to bring HEIs for AB-test but we lost a lot of children" P3

- **Stigma and Discrimination**

  "Some cases, women drop off medicine and went back to hometown for delivery where she could hide her HIV-positive status to others", P3.

Conclusion and Recommendation

- Gaps of HEI distribution services were found between the providers and women. Most PWs were not aware what services and how to use them for their infants.
  - To prevent Lost-to-Follow-up, feedback mechanism and routinely check for patients' awareness and satisfaction should be enhanced.
  - The benefits of giving requirement HEI's service following the latest national guideline should be strongly promoted and take into account
  - HIV-positive PWs should be empowered to disclose their status
  - The importance of having baby born free of AIDS should be inspired.
  - Clear and standard messages of HEI's service should be done repeatedly at either ANC, delivery or ART clinic to refresh and engage women to access service for their HEIs.
- Scale-up B-IACM approach covering PMTCT cascade. Increase role of MAT providers in FU effort in at birth test services. PAC counselors are closely FU testing at cession of breastfeeding. Connect PLHIV/KP/community network
- Continue service integration-PHC. Explore MOHs scheme regarding results-based performance. Explore technology-based interventions—less paper based
- Strengthen implementing of monitoring and tracking tools. Regular PMTCT meeting via pro-TWG, NTWG. Introduce Unique identification system (PMRS, finger print)

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Acknowledgement

Thanks to HIV-infected PWs and ANC counselors, ART counselors and clinicians who Involved In the study In ROKA, Sompov Loun, Social Health Clinic, Siem Reap Referral Hospitals, national and provincial AIDS, STI program managers, PHD directors, PMTCT Coordinators. Their enthusiastic participation was essential to the reported outcomes.

In Addition, without the support of International University and NCHADS and NMCHC, the study would not have been possible.

Update to Treatment Hepatitis-C

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HCV TREATMENT 2018

Dr. Ashish Garg
Associate Consultant
Department of Gastroenterology

Introduction

- Hepatitis C virus (HCV) infection is one of main causes of chronic liver disease worldwide.

- Long-term impact of HCV infection is highly variable,
  - Ranging from minimal histological changes to extensive fibrosis
  - Cirrhosis with or without hepatocellular carcinoma (HCC)

- Clinical care for patients with HCV-related liver disease has advanced considerably during the last two decades:
  - Enhanced understanding of the pathophysiology of the disease
  - Developments in diagnostic procedures and improvements in therapy and prevention.

EASL Recommendations on Treatment of Hepatitis C 2014.

Incidence of HCV Infection in India: WHO

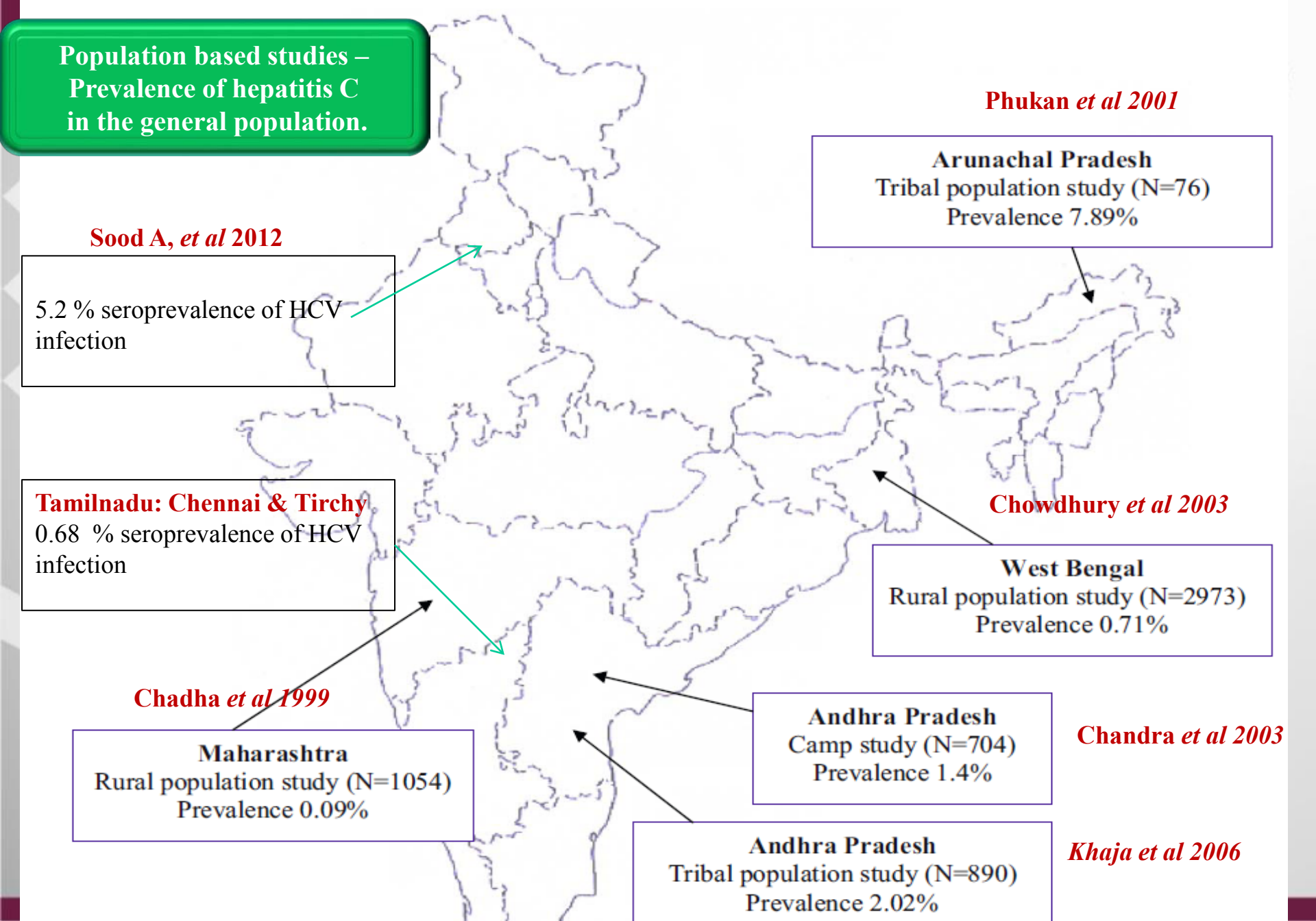
- About 12 million in India, and most do not know they are infected.

- Of these, about 25% are symptomatic, but 60 to 80% may progress to chronic liver disease, and 20% of these develop cirrhosis.

- Associated with high mortality : 5%-7%

http://www.who.int/csr/disease/hepatitis/Hepc.pdf

Population based studies – Prevalence of hepatitis C in the general population.



Hepatitis C virus (HCV) genotype epidemiology in India

Genotypes	(%)
1a	9%
1b	16%
1 other	3%
1	28%
2	-
3	64%
4	7%
5	0
6	0
Other	

Year of Estimate: 2012

Saraswat V, Norris S, de Knegt RJ, et al. Historical epidemiology of hepatitis C virus (HCV) in select countries - volume 2. J Viral Hepat. 2015 Jan;22 Suppl 1:6-25.

When and in Whom to Initiate HCV Therapy Table 1. Factors Associated With Accelerated Fibrosis Progression

Host	Viral
Nonmodifiable	HCV genotype 3
Fibrosis stage	Coinfection with hepatitis B virus or HIV
Inflammation grade	
Older age at time of infection	
Male sex	
Organ transplant	
Modifiable	
Alcohol consumption	
Nonalcoholic fatty liver disease	
Obesity	
Insulin resistance	

HCV DAA

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Protease Inhibitors	Polymerase Inhibitors		NS5A Inhibitors	Other
	Nucleotide	Nonnucleoside		
Simeprevir	Sofosbuvir		Ledipasvir	Ribavirin
Paritaprevir/ ritonavir		Dasabuvir	Ombitasvir	
			Daclatasvir	

Velpatasvir

Grazoprevir

Elbasvir

Glecaprevir

Pibrentasvir

DAAs for HCV in the region

Sovaldi® (sofosbuvir)

Harvoni® (ledipasvir/sofosbuvir)

Daklinza®

Generic sofosbuvir

Generic ledipasvir/sofosbuvir

Generic daclatasvir

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DAAs in the region: SEARO

Country	Sofosbuvir	Ledipasvir/ sofosbuvir	Daclatasvir	Olysio®	Velpatasvir/ sofosbuvir	Status
Bangladesh	✓	✓	✓	x	✓	Widely available
India	✓**	✓	✓	x	✓	Widely available
Indonesia	✓**	x	x	✓*	x	Limited availability through referral hospitals as part of "special assistance scheme"
Myanmar	✓	✓	✓	x	x	Widely available
Nepal	✓	✓	✓	x	✓	Widely available
Thailand	✓*	✓#	✓*	x	x	Widely available, except for Harvoni®

Source – Hepcasia.com

DAAs in the region: WPRO

Country	Sofosbuvir	Ledipasvir/ sofosbuvir	Daclatasvir	Viekira pak®	Velpatasvir/ sofosbuvir	Zepatier®	Status
Cambodia	✓	✓	X	X	✓	X	Widely available
Malaysia	✓*	X	X	✓	X	X	Widely available
Philippines	✓*	X	X	X	X	X	Widely available
Vietnam	✓	✓	✓	X	X	✓*	Limited availability through referral hospitals as part of "special import quota"

All DAAs are generic versions unless otherwise noted.
**Branded product **Both branded and generic products*

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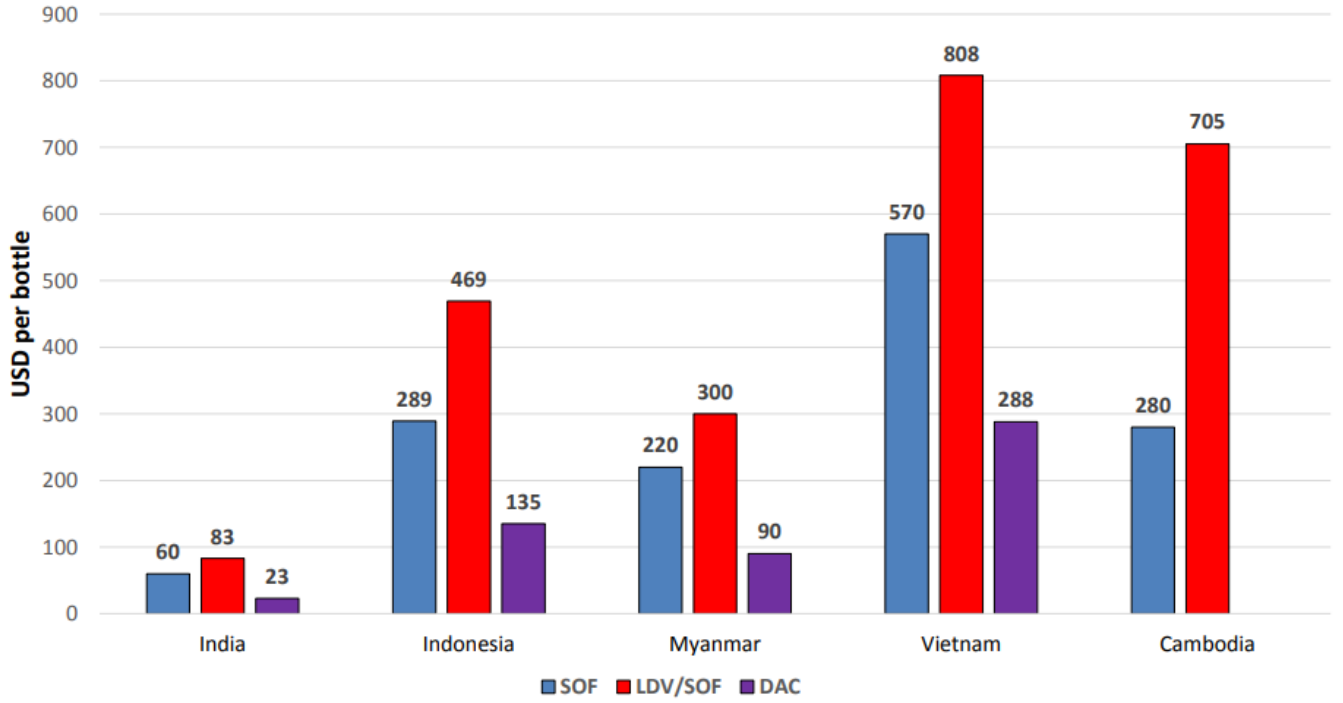
Pricing variations between countries



Source: www.hepcasia.com
Personal communications, regional civil society organizations

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Genotype 1 recommendations

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Elbasvir (50 mg) + Grazoprevir (100mg)

- 12 weeks - with or without cirrhosis

Glecaprevir (300mg) + Pibrentasvir (120mg)

- 8 weeks – without cirrhosis
- 12 weeks – with compensated cirrhosis

Sof (400mg) + Velpatasvir (100mg)

- 12 weeks - with or without cirrhosis

Ledipasvir (90 mg) + Sofusbuvir (400mg)

- 12 weeks – With or without cirrhosis
- 8 weeks – non –blacks, HIV uninfected, HCV RNA <6 million IU/ml without cirrhosis

Genotype 4 recommendations

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Glecaprevir (300mg) + Pibrentasvir (120mg)

- 8 weeks – without cirrhosis
- 12 weeks – with compensated cirrhosis

Sofusbuvir (400mg) + Velpatasvir (100mg)

- 12 weeks - with or without cirrhosis

Elbasvir (50 mg) + Grazoprevir (100mg)

- 12 weeks - with or without cirrhosis

Ledipasvir (90 mg) + Sofusbuvir (400mg)

- 12 weeks – With or without cirrhosis

Genotype 5,6 recommendations

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Glecaprevir (300mg) + Pibrentasvir (120mg)

- 8 weeks – without cirrhosis
- 12 weeks – with compensated cirrhosis

Sofusbuvir (400mg) + Velpatasvir (100mg)

- 12 weeks - with or without cirrhosis

Ledipasvir (90 mg) + Sofusbuvir (400mg)

- 12 weeks – With or without cirrhosis

Genotype 3 recommendations

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Glecaprevir (300mg) + Pibrentasvir (120mg)

- 8 weeks – without cirrhosis
- 12 weeks – with compensated cirrhosis

Sofusbuvir (400mg) + Velpatasvir (100mg)

- 12 weeks - with or without cirrhosis

Daclatasvir (60 mg) + Sofusbuvir (400mg)

- 12 weeks – Without cirrhosis (alt)
- 24 weeks – With cirrhosis (with or without wight based ribavarin) (alt)

Genotype 2 recommendations

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Glecaprevir (300mg) + Pibrentasvir (120mg)

- 8 weeks – without cirrhosis
- 12 weeks – with compensated cirrhosis

Sofusbuvir (400mg) + Velpatasvir (100mg)

- 12 weeks - with or without cirrhosis

Daclatasvir (60 mg) + Sofusbuvir (400mg)

- 12 weeks – Without cirrhosis (alt)
- 16 - 24 weeks – With cirrhosis (alt)

Monitoring during treatment

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Staging of hepatic fibrosis is essential prior to HCV treatment

Within 12 weeks prior to starting

- CBC, INR, LFT
- TSH (IFN) , GFR

At any time prior to starting the treatment

- HCV GENO/SUB
- HCV QUANTITATIVE

HBV coinfection - HBsAg, anti-HBs, and anti-HBc

After starting treatment

- CBC, Creat, GFR, LFT - 4 Weeks and SOS
- TSH – Every 12 weeks (IFN)

Monitoring during treatment

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ALT –

>=10 times (wk 4) – discontinue

< 10 times (wk 4) + N/V/J/ALP/INR – discontinue

Asymptomatic <10 times (wk 4) – repeat at wk 6 & 8. If remain increased consider of stopping

Monitoring during treatment

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HCV RNA QUANTITATIVE

4 Weeks of therapy. 12 weeks post completion

No requirement to change therapy if RNA not available

Can be done after 24 weeks or longer post completion

Positive after 4 weeks, repeat at 6 weeks – Increase in > 10 times – discontinue

No change if remain positive at 6/8 weeks but lower than week 4

Monitoring during treatment

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When achieved SVR

- F0 – F2 – Same as normal population
- Assessment for HCV recurrence or reinfection : ongoing risk for HCV infection or otherwise unexplained hepatic dysfunction develops.
- F3 – F4 – HCC surveillance
- Baseline endoscopy for cirrhosis
- Assessment of other causes who have persistently abnormal tests
- Assessment for HCV recurrence or reinfection not routinely recommended in ongoing immunosuppresive treatment

Recommended Monitoring for Pregnancy-related Issues Prior to and During Antiviral Therapy that Includes Ribavirin

- Women of childbearing age : Not to become pregnant, upto 6 months of stopping
- Serum pregnancy testing is recommended
- Male partners: prevent pregnancy, upto 6 months of stopping

- Safety of DAA regimens that do not include ribavirin has not been established during pregnancy

Patients with decompensated cirrhosis

Patients with HCV infection who have decompensated cirrhosis(moderate or severe hepatic impairment; CTP B/C) should be referred to a medical practitioner with expertise in that condition (ideally in a liver transplant center).

Treatment in Decompensated cirrhosis

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1,4,5,6 (Rb Eligible)

Val + So + weight based Rb – 12 weeks

Le + So + low initial dose Rb – 12 weeks

Da + So + low initial dose Rb – 12 weeks (1,4)

1,4,5,6 (Rb Ineligible)

Val + So – 24 weeks

Le + So – 24 weeks

Da + So + low initial dose Rb – 24 weeks (1,4)

Treatment in Decompensated cirrhosis

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2,3 (Rb Eligible)

Val + So + weight based Rb – 12 weeks

Da + So + low initial dose Rb – 12 weeks

1,4,5,6 (Rb Ineligible)

Val + So – 24 weeks

Da + So + low initial dose Rb – 24 weeks (1,4)

Treatment in Renal imapairment

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CKD – Stage 1,2,3 (eGFR > 30ml/min)

No dosage adjustment required –

- Daclatasvir (60 mg)
- Elbasvir (50 mg)/grazoprevir (100 mg)
- Glecaprevir (300 mg)/pibrentasvir (120 mg)
- Ledipasvir (90 mg)/sofosbuvir (400 mg)
- Sofosbuvir (400 mg)/velpatasvir (100 mg)
- Sofosbuvir (400 mg)

Treatment in Renal imapairment

CKD Stage 4,5

Glecaprevir + Pibrentasvir – 8-16 weeks
(1,2,3,4,5,6)

Elbasvir + Grazoprevir – 12 weeks
(1,4)

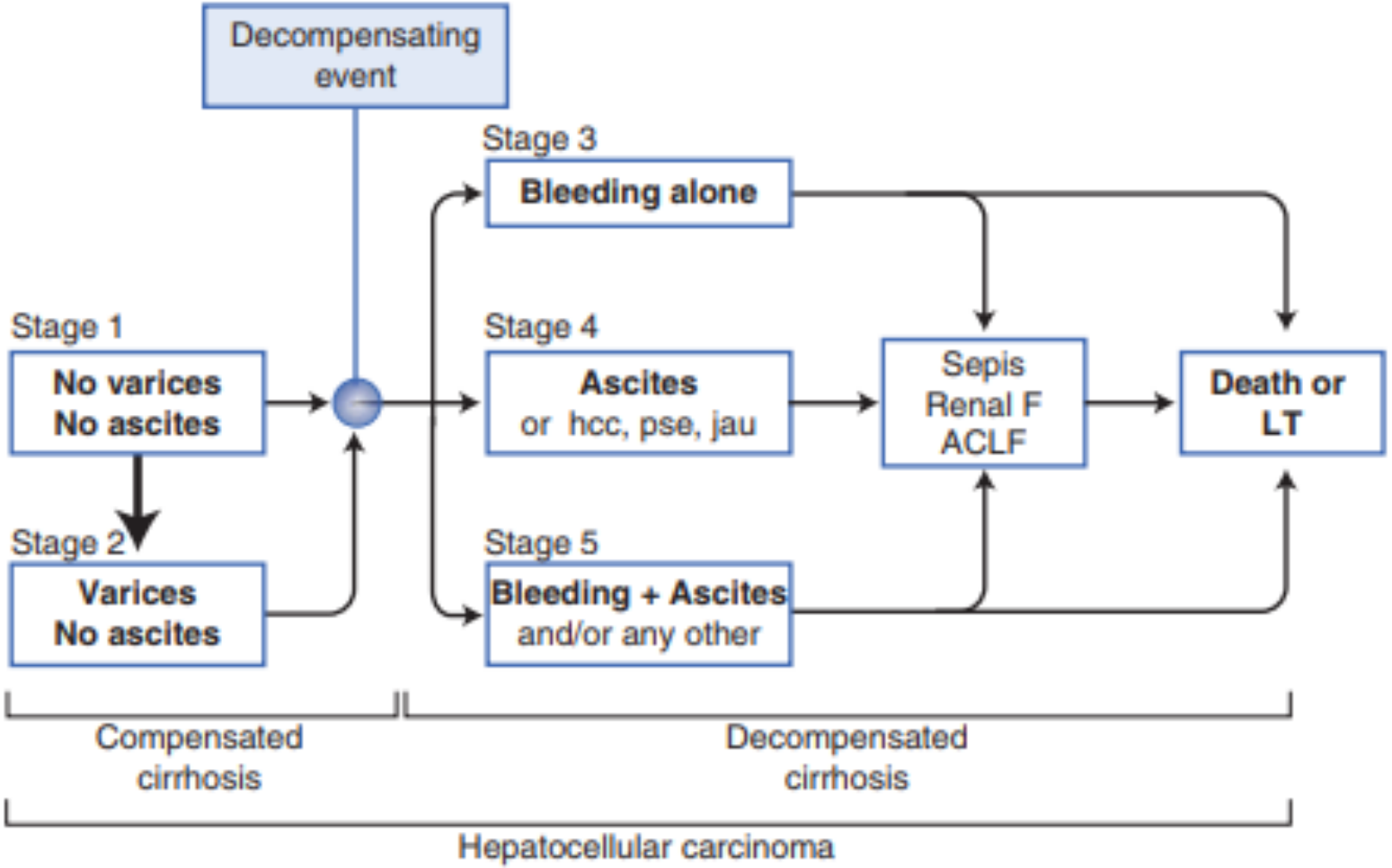
ALL pts are candidates for HCV therapy, regardless of disease stage

If possible, acid-suppressing medications should be held prior to and during the HCV treatment period to optimize ledipasvir exposure

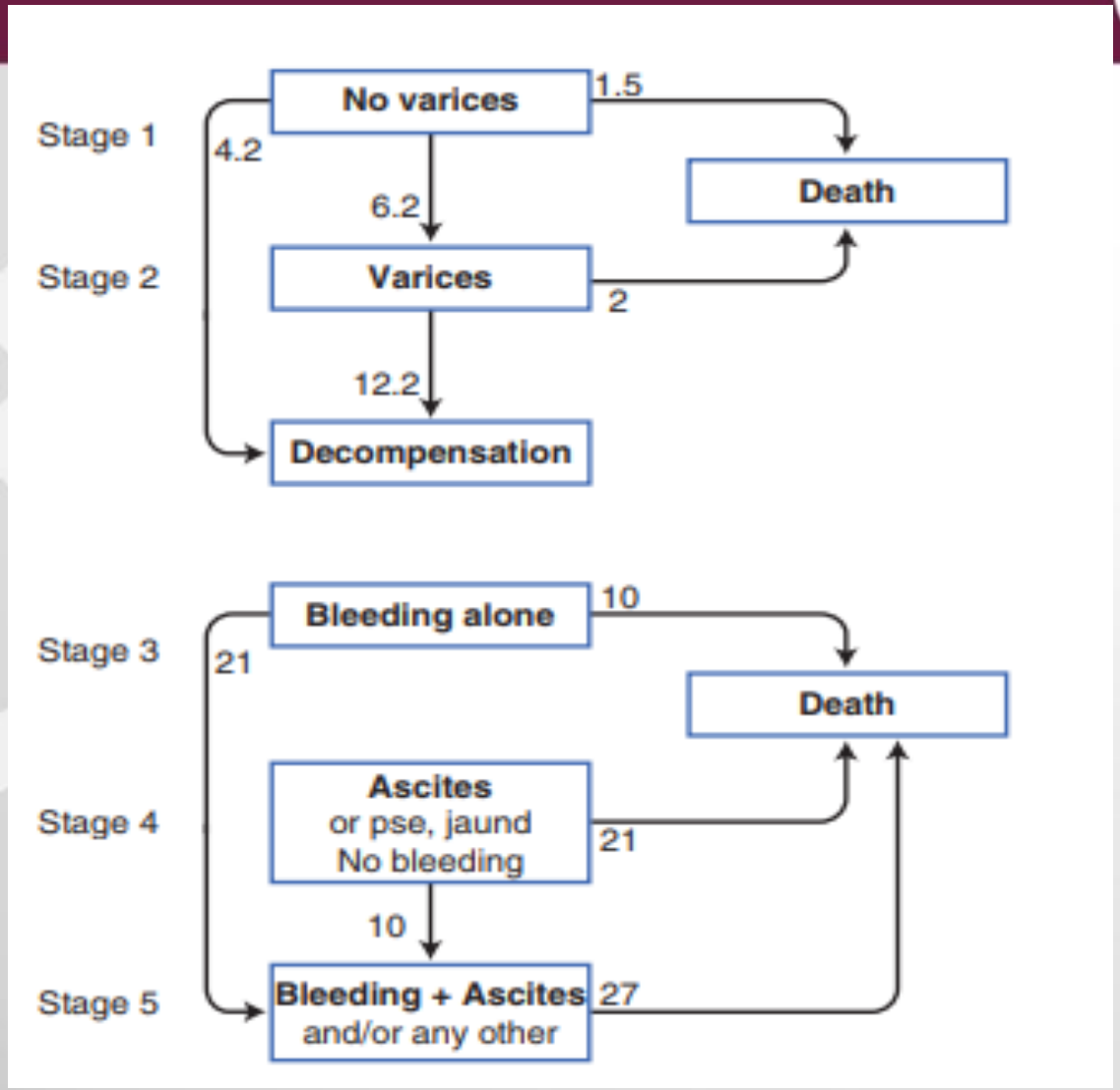
Serious symptomatic bradycardia with amiodarone use with sofosbuvir/led

Indications of liver transplant

1. Acute Liver Failure
2. Chronic liver disease
   - Decompensating event
   - MELD>15
   - HCC in transplant criteria
3. Metabolic conditions
4. Systemic complications of Chronic Liver disease
   - Hepatopulmonary syndrome
   - Portopulmonary hypertension

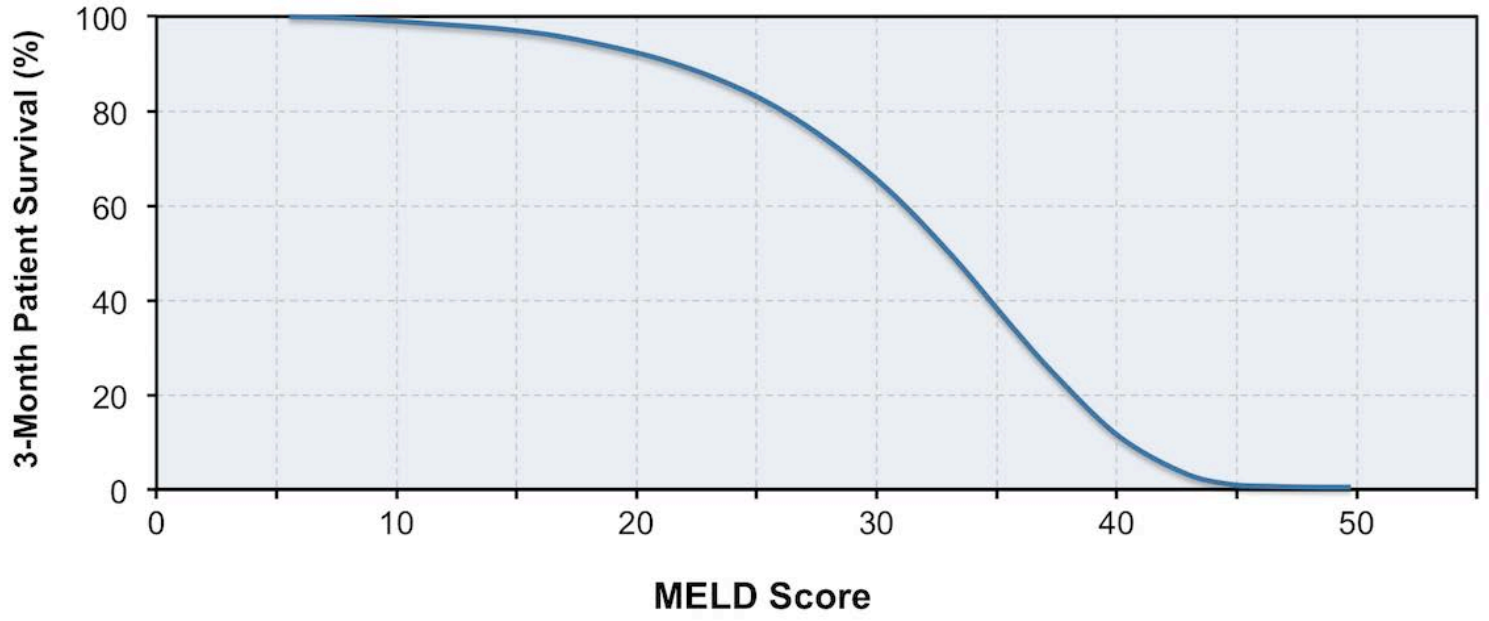


Source : Author - Gennaro D'Amico

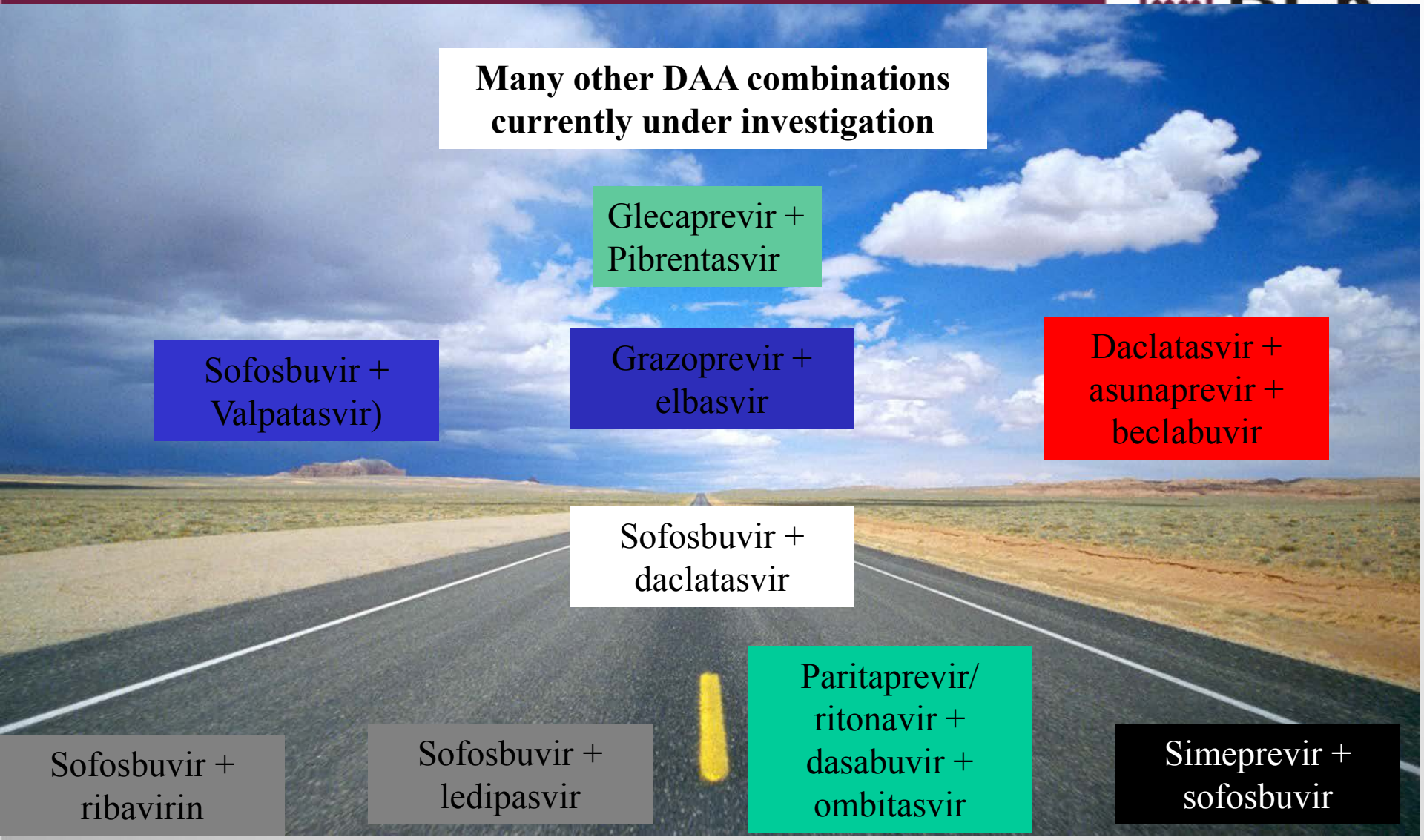


Source : Author - Gennaro D'Amico

Estimated 3-Month Survival Based on MELD Score



Source: Wiesner R, Edwards E, Freeman R, et al. Model for end-stage liver disease (MELD) and allocation of donor livers. Gastroenterology. 2003;124:91-6.


Many other DAA combinations currently under investigation
Glecaprevir + Pibrentasvir
Sofosbuvir + Valpatasvir)
Grazoprevir + elbasvir
Daclatasvir + asunaprevir + beclabuvir
Sofosbuvir + daclatasvir
Paritaprevir/ ritonavir + dasabuvir + ombitasvir
Sofosbuvir + ribavirin
Sofosbuvir + ledipasvir
Simeprevir + sofosbuvir

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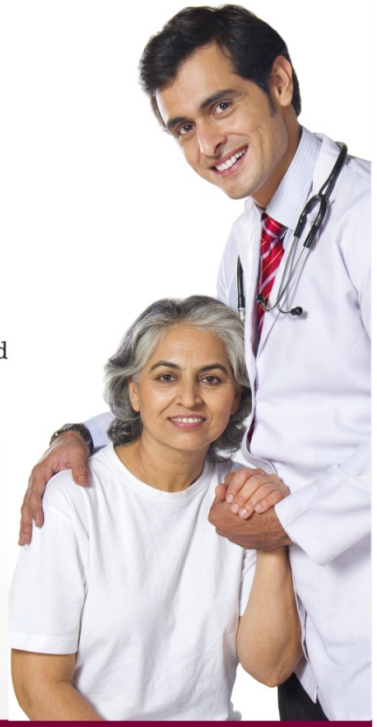
INTERVENTIONAL GASTROENTEROLOGY

- **GI Bleeding**
  - Endoscopic Variceal Ligation
  - Ulcer Endotherapy
  - Angiography and Embolization
  - TIPSS, BRTO
- **Inflammatory Bowel Disease**
- **Obstructive Jaundice**
  - ERCP and Metal Stenting
  - Radiofrequency Ablation
  - Cholangioscopy (Spyglass)
- **Pancreatic Endotherapy**
  - Management of Pancreatic Stones and Strictures
  - Endoscopic Cystogastrostomy
  - Endoscopic Necrosectomy
- **Early Diagnosis and Treatment of GI Cancers**
  - Narrow Band Imaging
  - Endoscopic Submucosal Dissection (ESD)
  - Endoscopic Mucosal Resection (EMR)



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HEPATOLOGY AND LIVER TRANSPLANT

Non-Surgical Management

- Liver Tumours
  - RFA, TACE, TARE
- Liver Dialysis
  - MARS, Plasma Exchange
- Acute Liver Failure (ALF)
  - Separate ICU for ALF patients
  - Medical Management of ALF
  - Liver Transplant for ALF
- Refractory Ascites
  - TIPSS

Surgical Management

- Living Donor Liver Transplant
- Deceased (Cadaver) Donor Liver Transplant
- Paediatric Liver Transplant
- ABO Incompatible Liver Transplant
- Simultaneous Liver Kidney Transplant
- Dual Lobe Liver Transplant
- Complex Liver and Pancreatic Resections (Adult and Paediatric)
- Hepato-Pancreatico-Biliary Cancer Surgery
- Comprehensive Management of Bile Duct Injury

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Therapy and prevention of complications of malignant tumours

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Abstract

Cancer affects all of humankind and this is an escalating health problem worldwide, because this is one of the leading causes of death. Incidence of cancer is growing in cambodia too. In that case a problem of prevention of complications of malignant tumours is relevant for Cambodia.
Mostly complications of malignant tumours can happen in patients with advanced stages of cancer (metastatic spinal cord compression, acute tumour lysis syndrome, superior vena cava syndrome, intestinal obstruction, bleeding etc.). Next two groups of problems caused by side effects of cancer treatment and low immune status of oncology patients (especially, in oncohematology).
These problems are possible to prevent by:
- early diagnosis of cancer and cancer screening,
- early treatment of malignant tumours,
- Prophylaxis of side effects of cancer treatment.
The prevention of complications of malignant tumours will increase effectiveness of the therapy, improve prognosis and survival, increase quality of life and decrease expenses of the treatment.

Keywords: Cancer, Tumor lysis syndrome, malignant tumor

Overview of Renal Transplant

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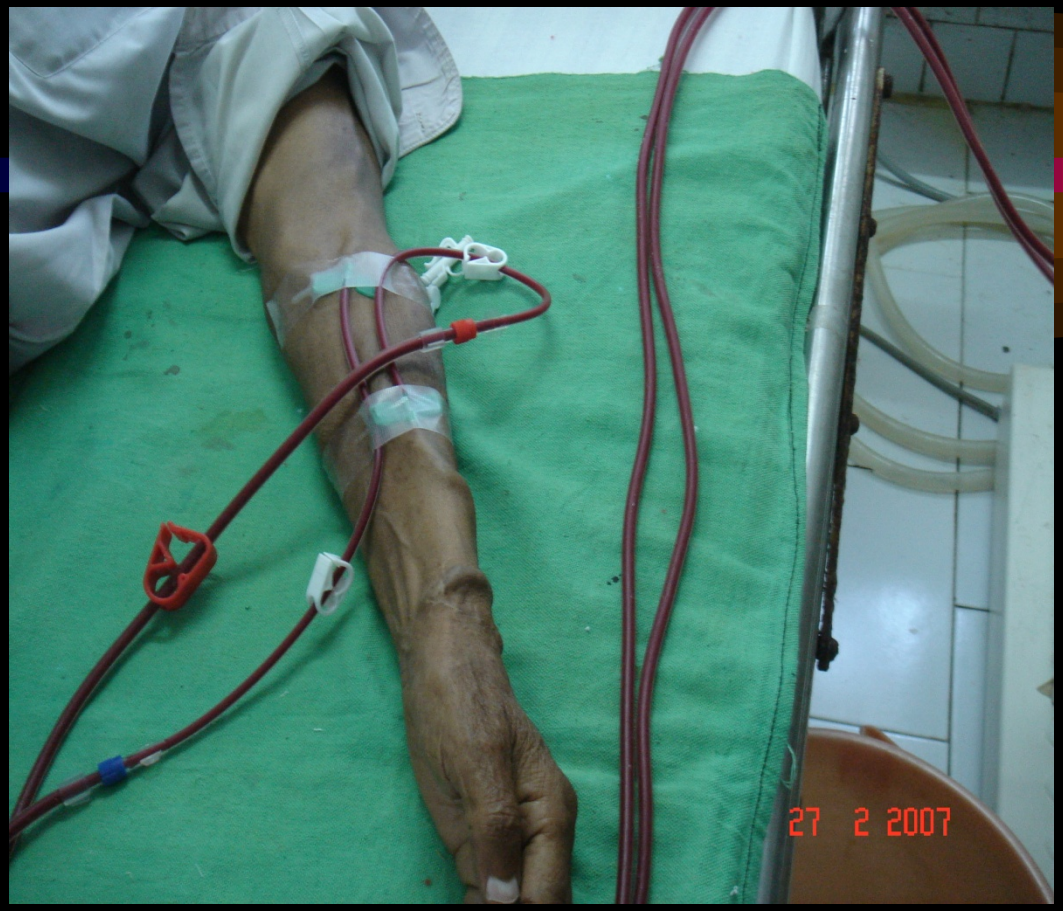
Dr Aditya Pradhan- Department of Urology AND Renal Transplant

ESRD

- Stages of CRF : 90 – 60- 30- 15
- ESRD management options
  Maintenance on Dialysis --CAPD / Haemodialysis or Renal Transplantation
- Procedure of choice : Renal Transplantation.

A_V fistula: vascular access for dialysis

- High flow rates 200ml/min
- Easy access
- So artery [flow] anastomosed to vein[lumen]


27 2 2007

Transplantation of Human Organ and Tissue Act 2013

- Governing Act for all organ transplants in India
- Only live related transplants permissible .. First degree relatives and grandparents
- Authorisation by State Committee for all unrelated transplants / foreign nationals
- All Cadaver transplants.

Magnitude

- India : 80,000 ESRD per year….. 2.4% RTx

Primary disease

Disease	Incidence
CGN (n=15)	7.6%
CPN/CIN (n=13)	6.6%
DM (n=14)	7.1%
HTN (n=12)	6.1%
Reflux (n=6)	3.0%
ADPKD (n=9)	4.6%
Urolithiasis (n=4)	2.05%
Multisystem (n=5)	2.5%
APAS (n=1)	0.5%
Previous Tx (n=10)	5.1%
Unknown/presumed	54.3%
CGN/CPN/CIN (n=106)	

Suitability of donor - recipient

Blood group compatiblity

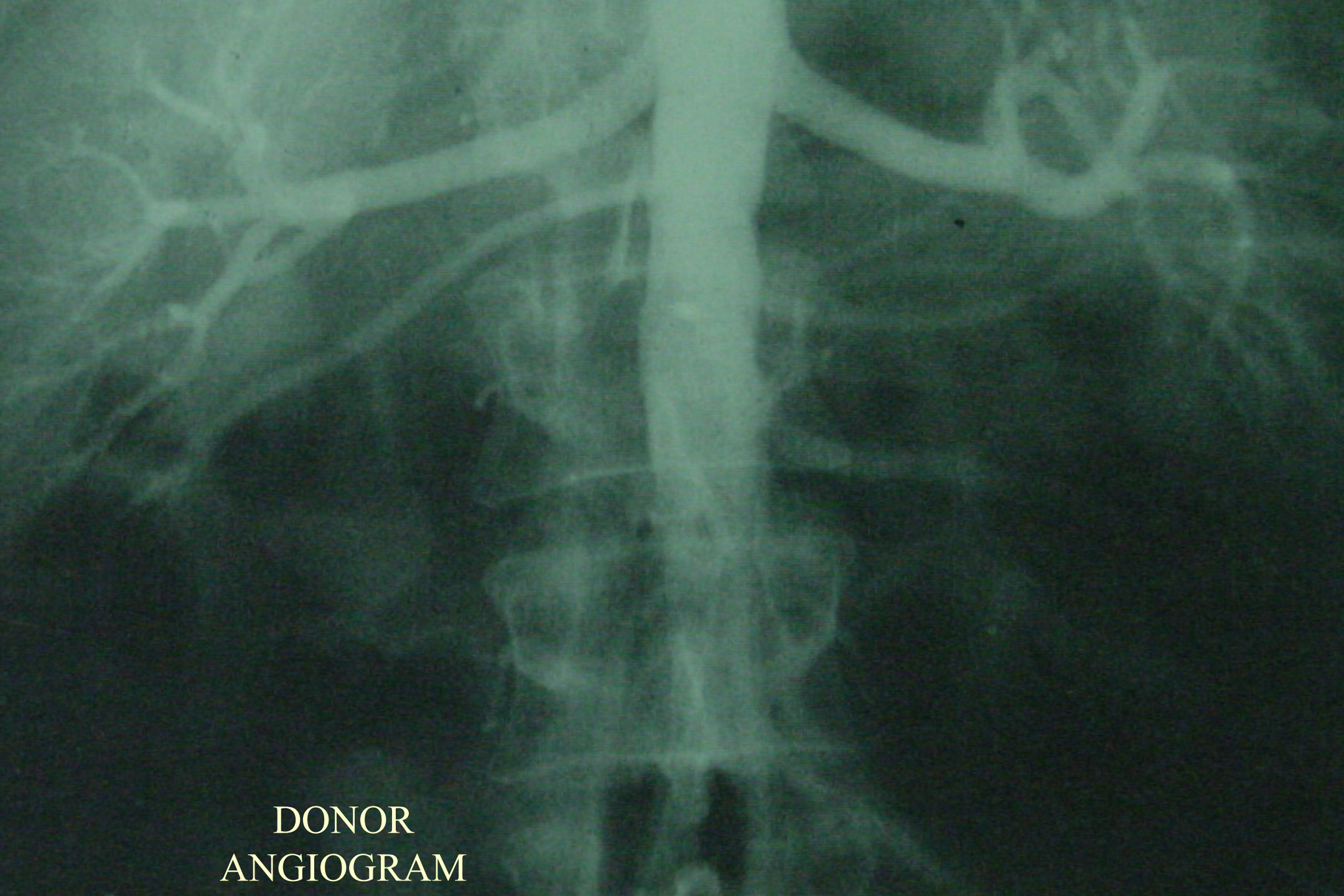
- Cross match negative

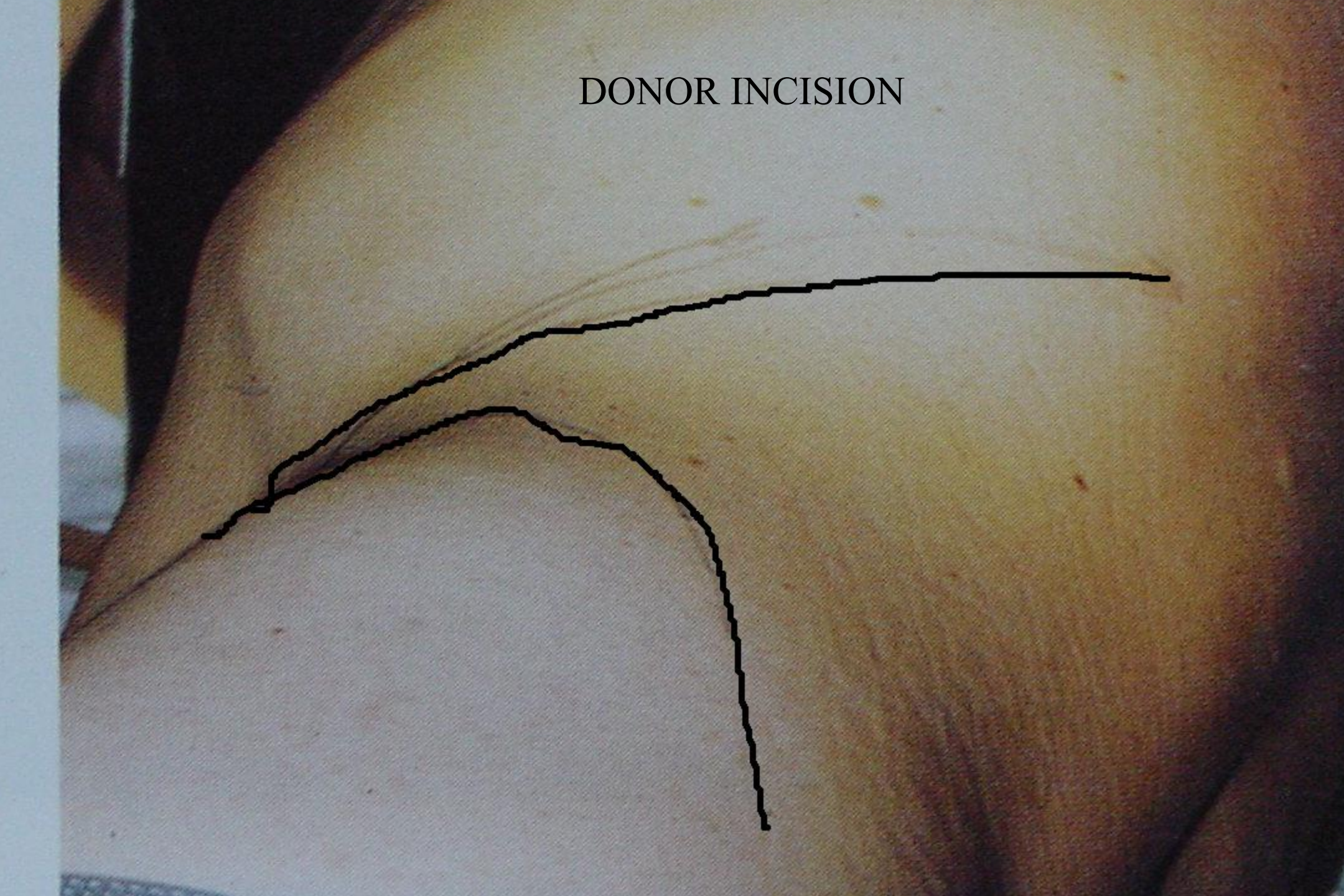
Operative Aspects

Technically demanding operations

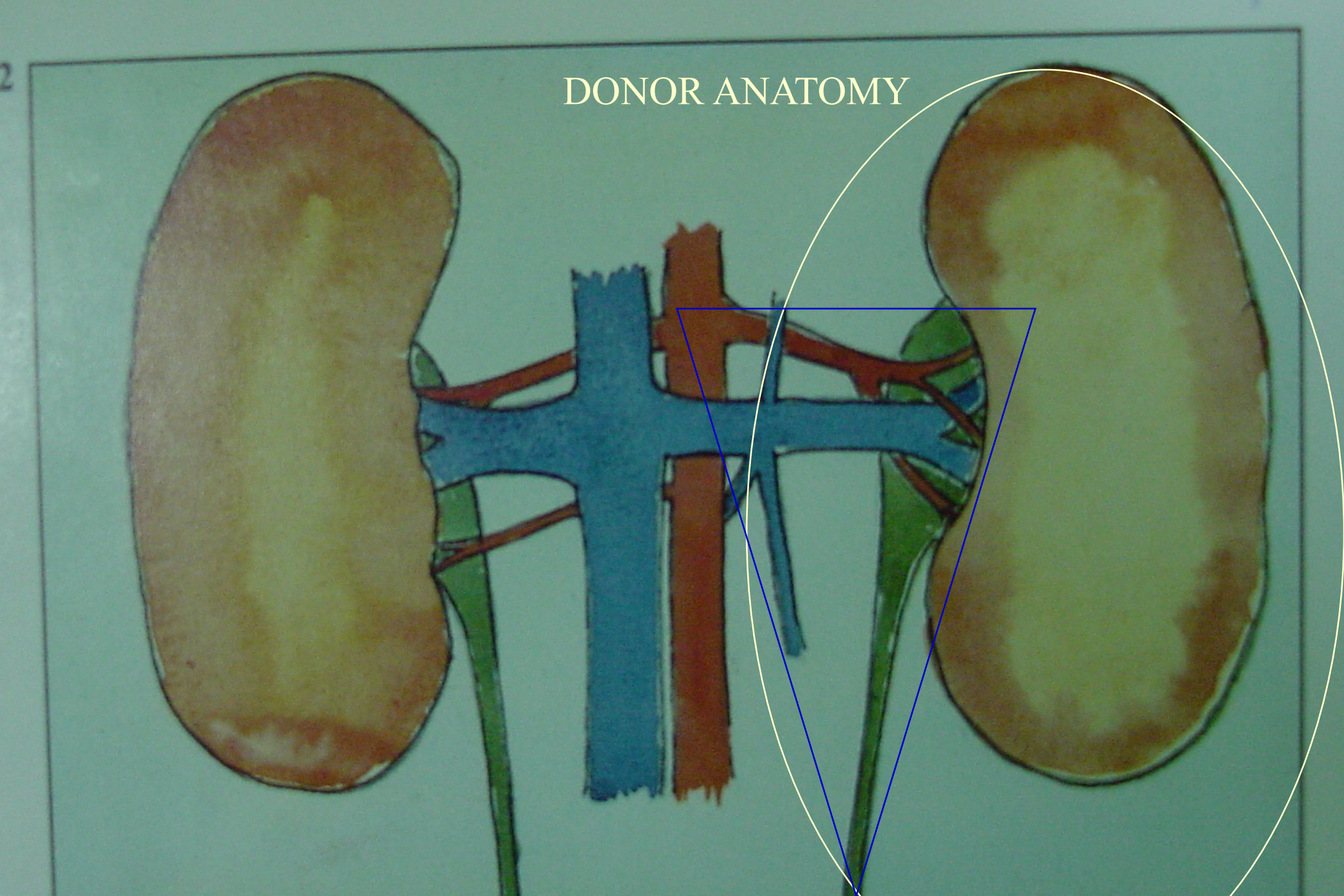
ZERO ERROR…..Donor and recipient.

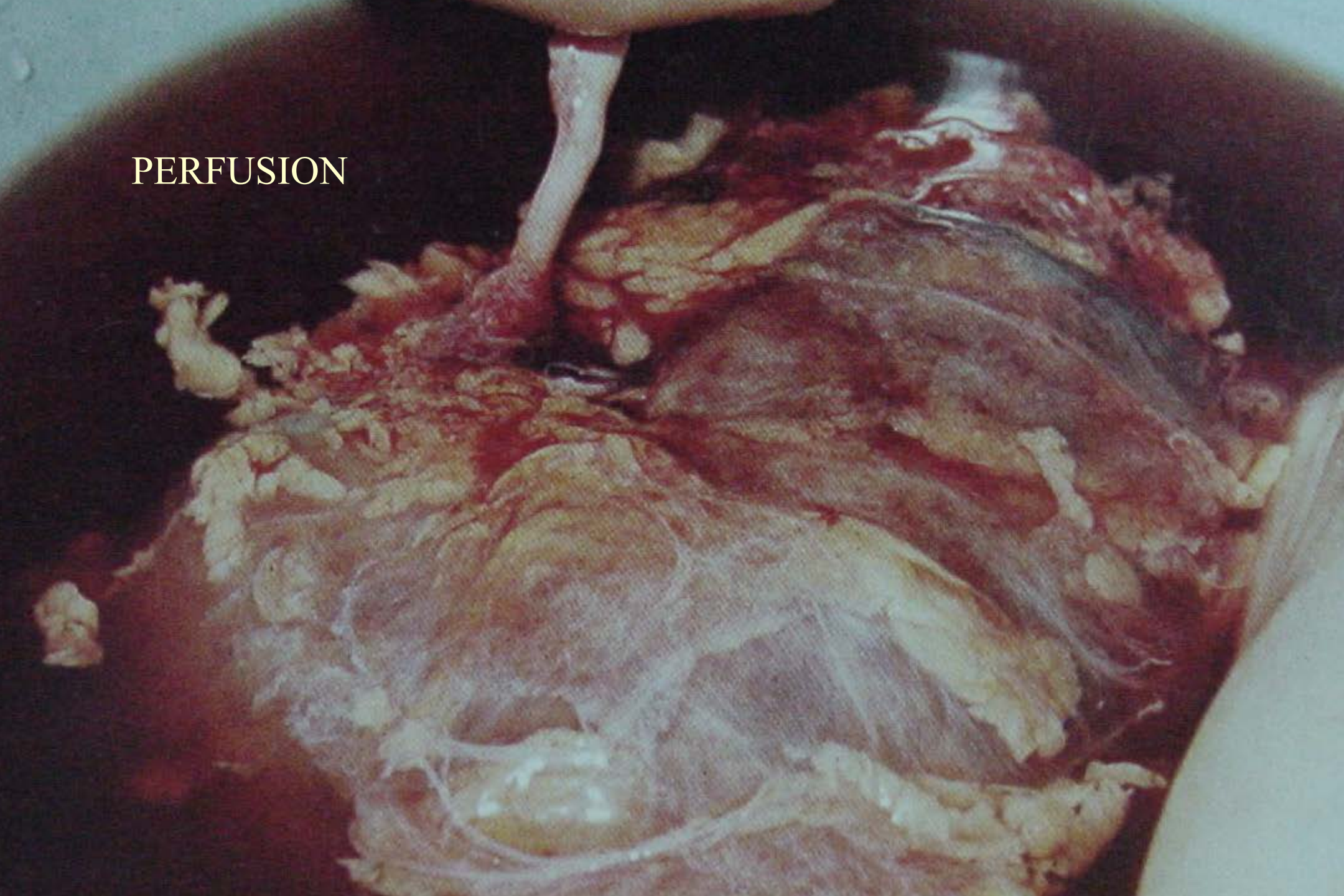
Understanding the Vascular anatomy is crucial.

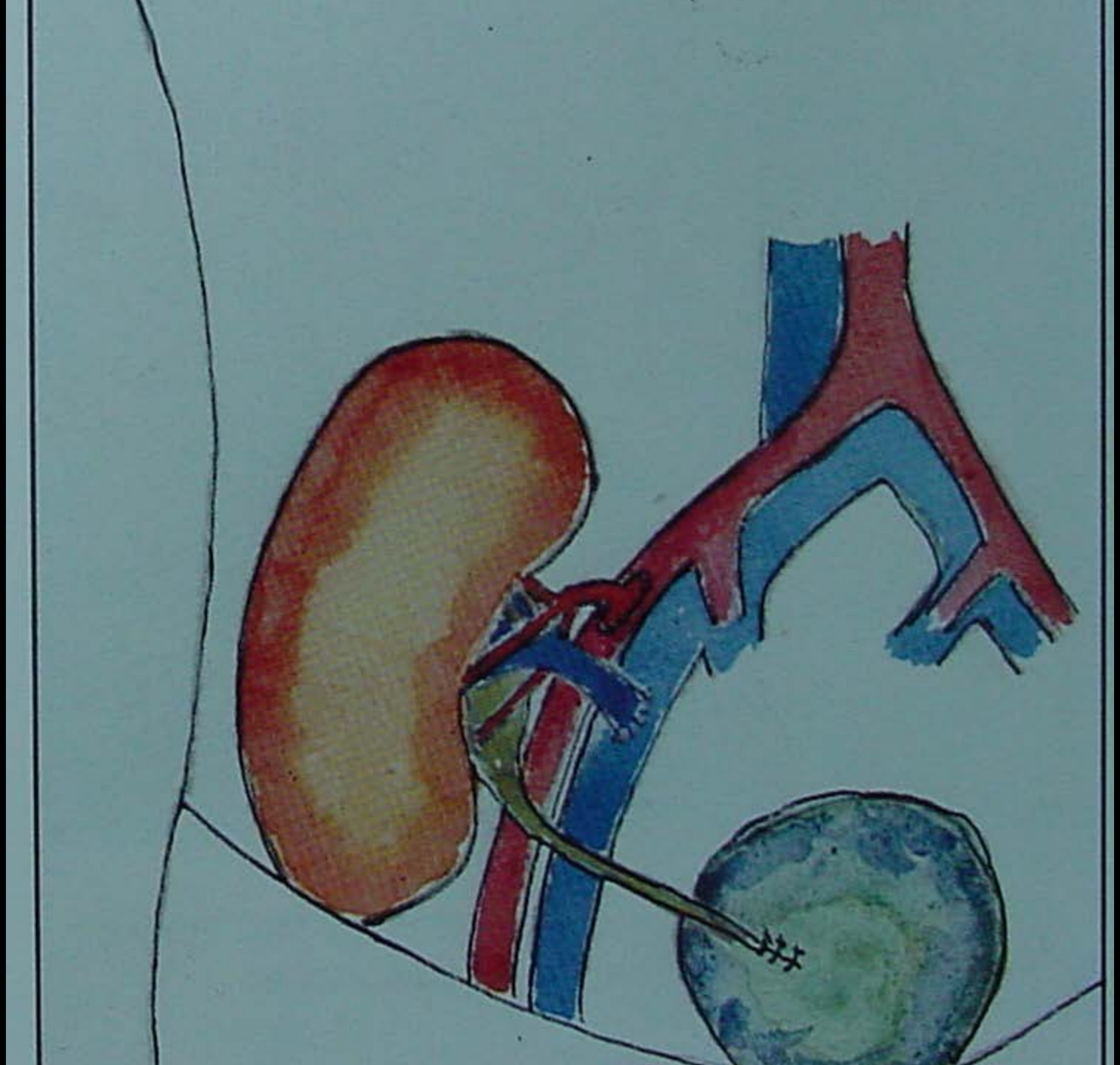

DONOR
ANGIOGRAM


DONOR INCISION

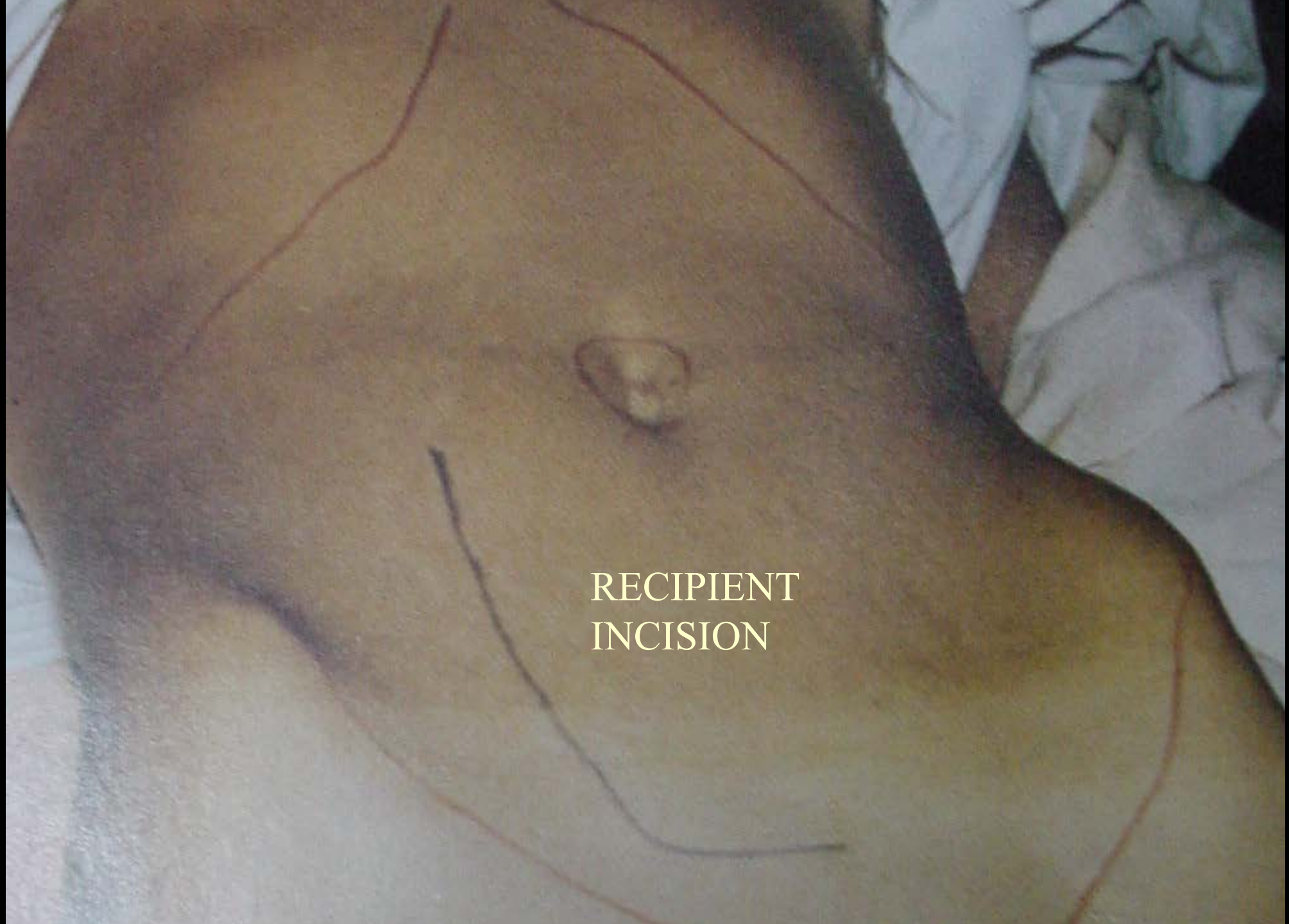
DONOR ANATOMY




PERFUSION



RECIPIENT
ANATOMY


RECIPIENT
INCISION

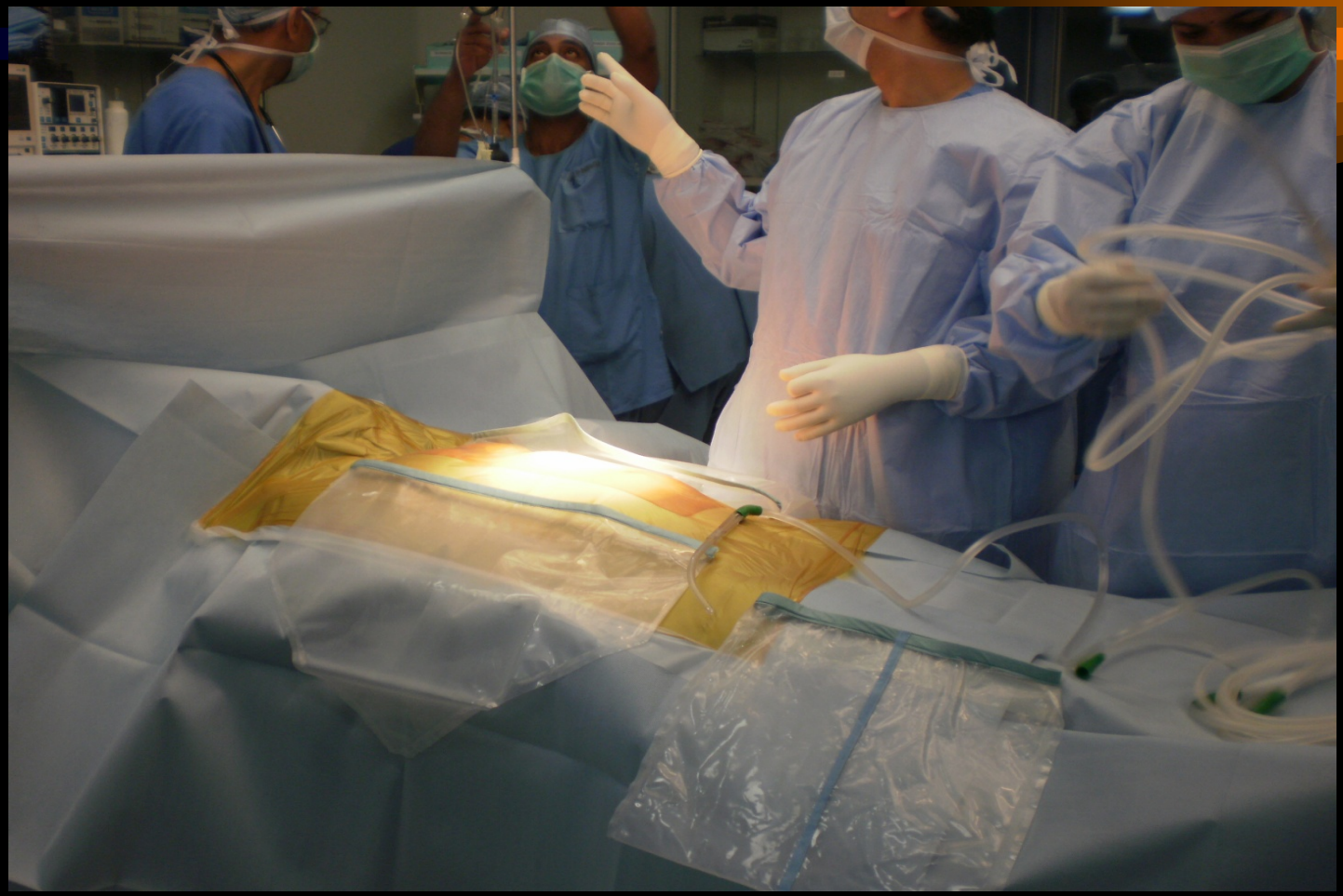
RENAL TRANSPLANT

BY
DR.ADITYA PRADHAN
&
DR.YPS RANA

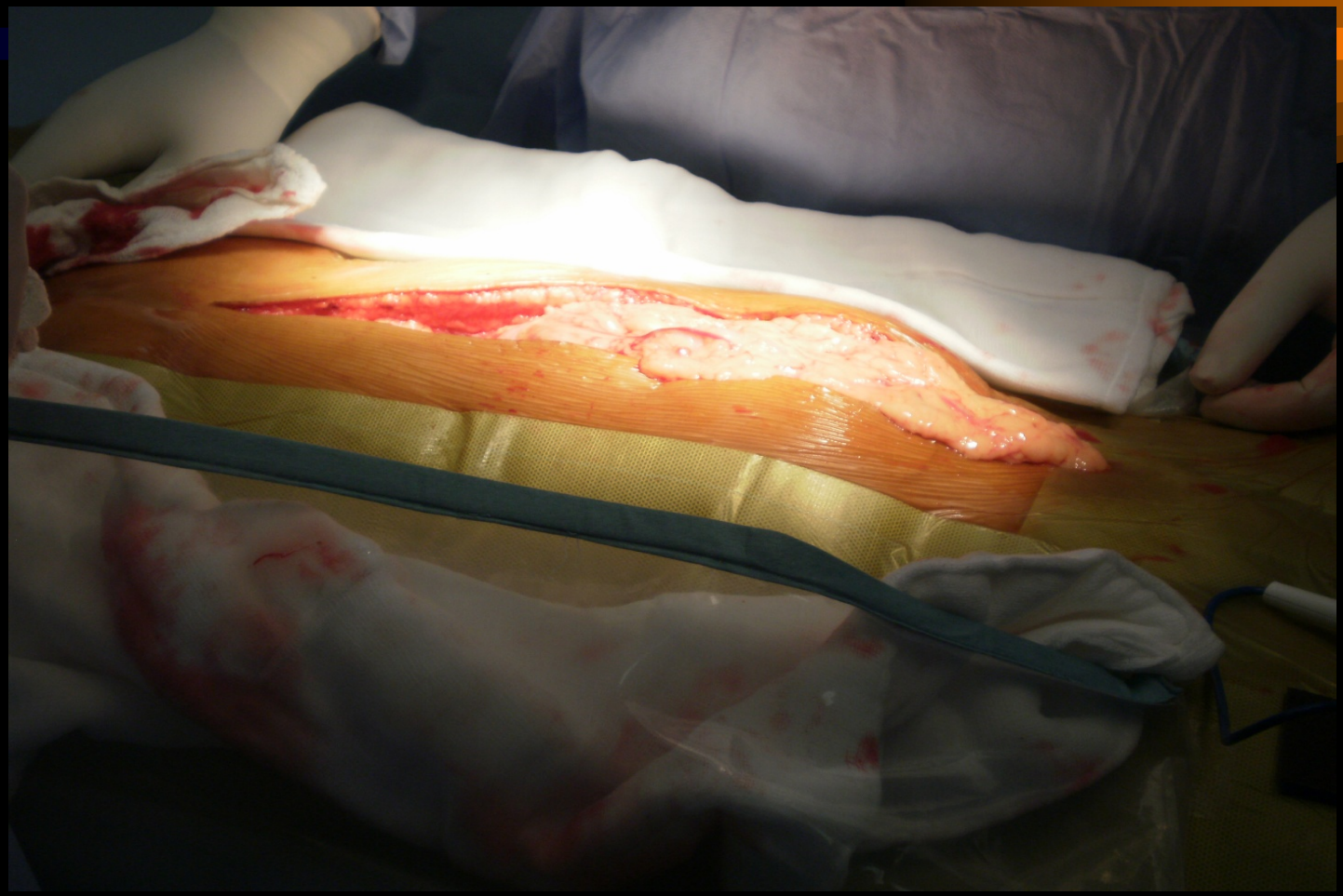
Multiorgan Harvest Procedure

- After Brain Stem Death confirmatory tests
- Multiple teams to coordinate
- Order of retrieval:Cardiac- Liver – Kidneys- Eyes

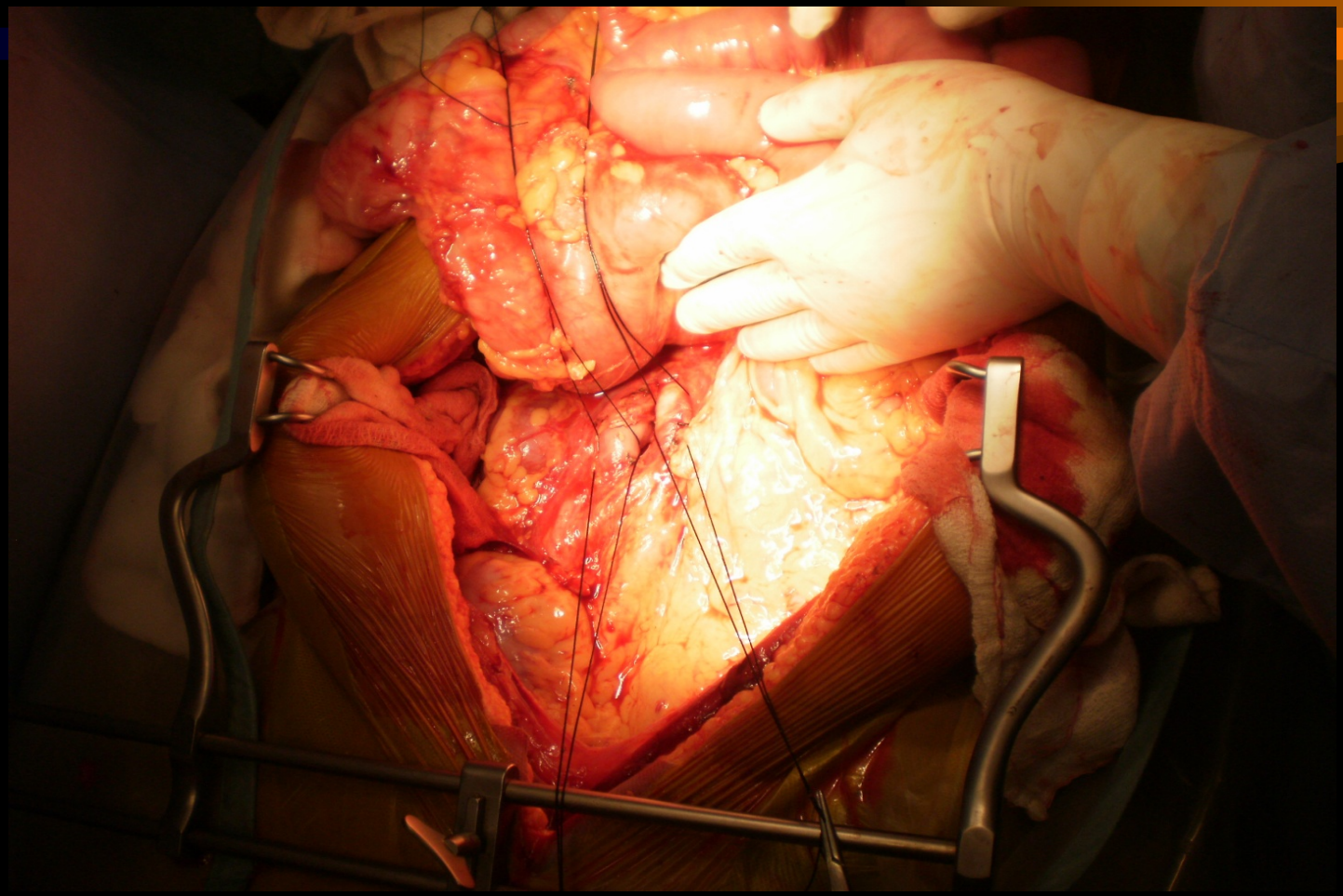
Draping of patient



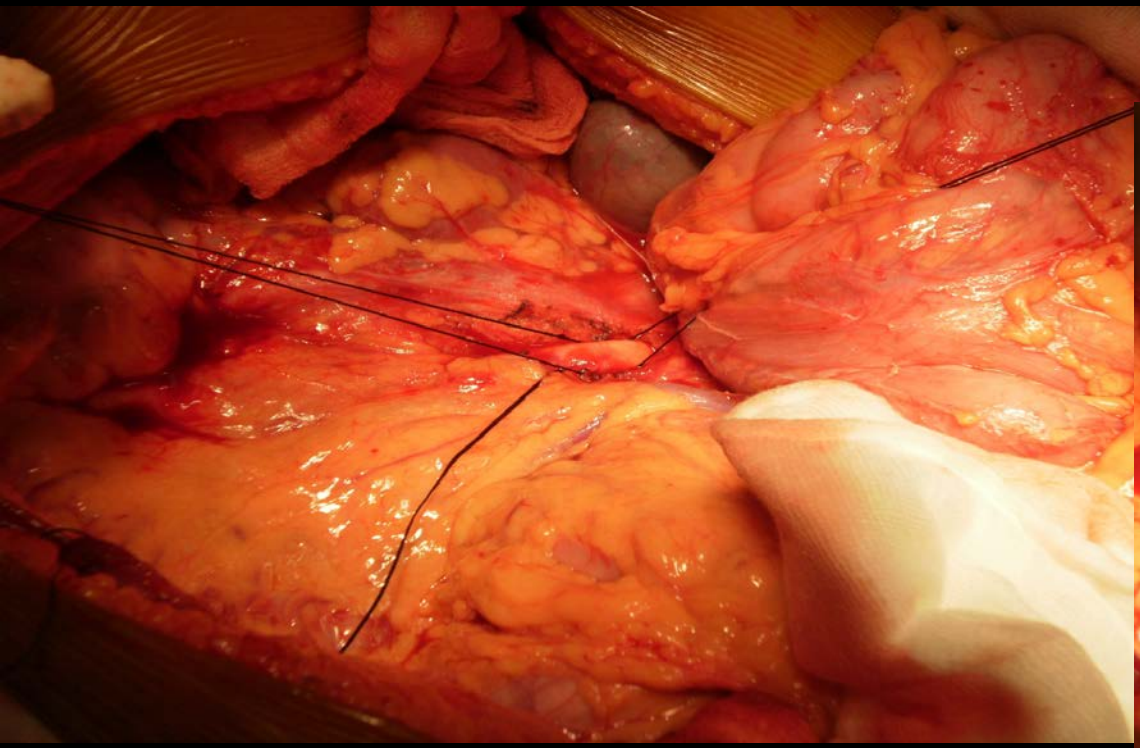
Midline laparotomy

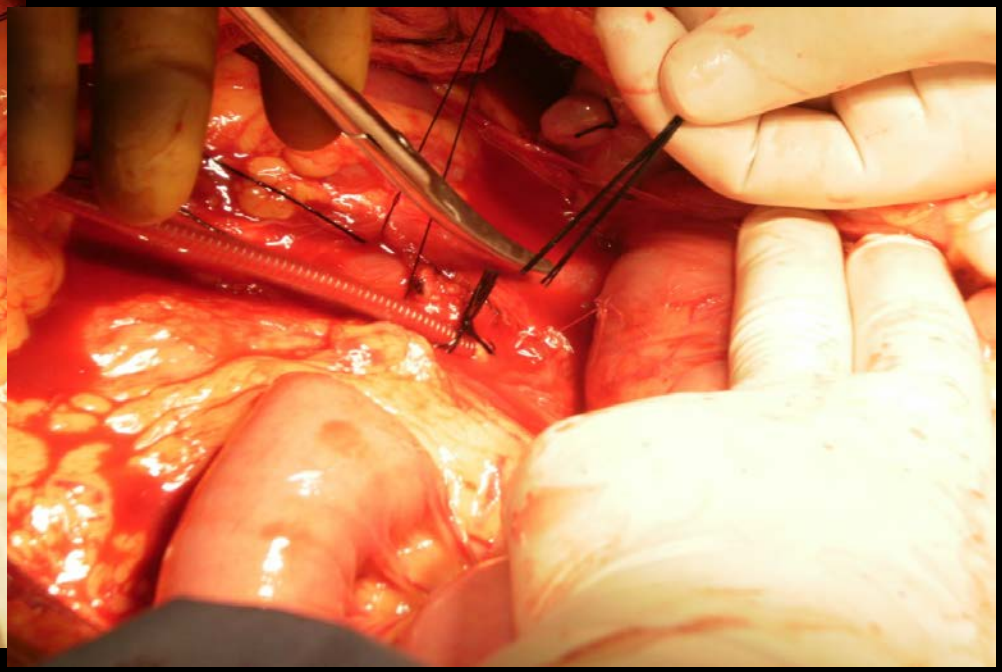


Cattle’s manouvere

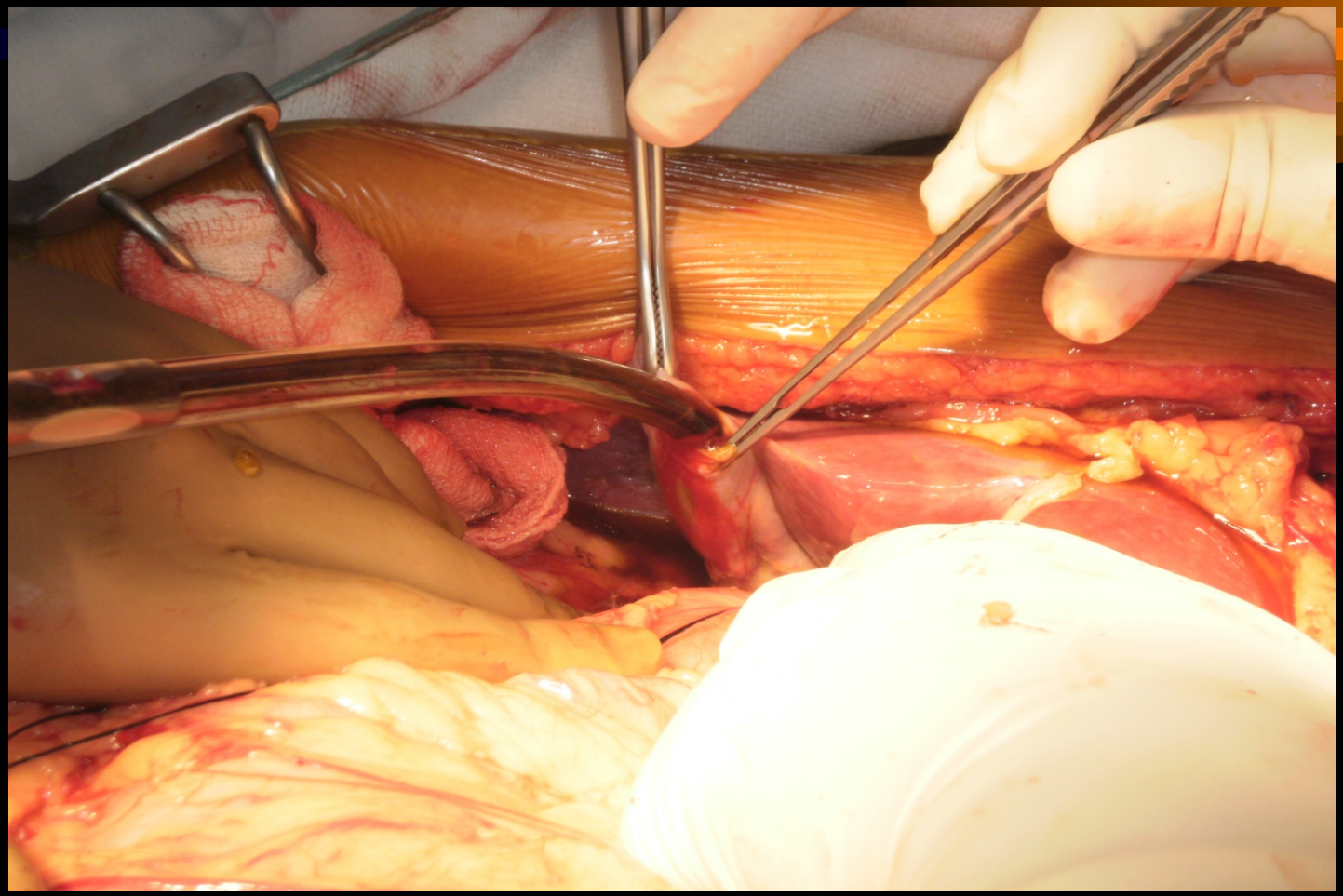


Catheter in aorta

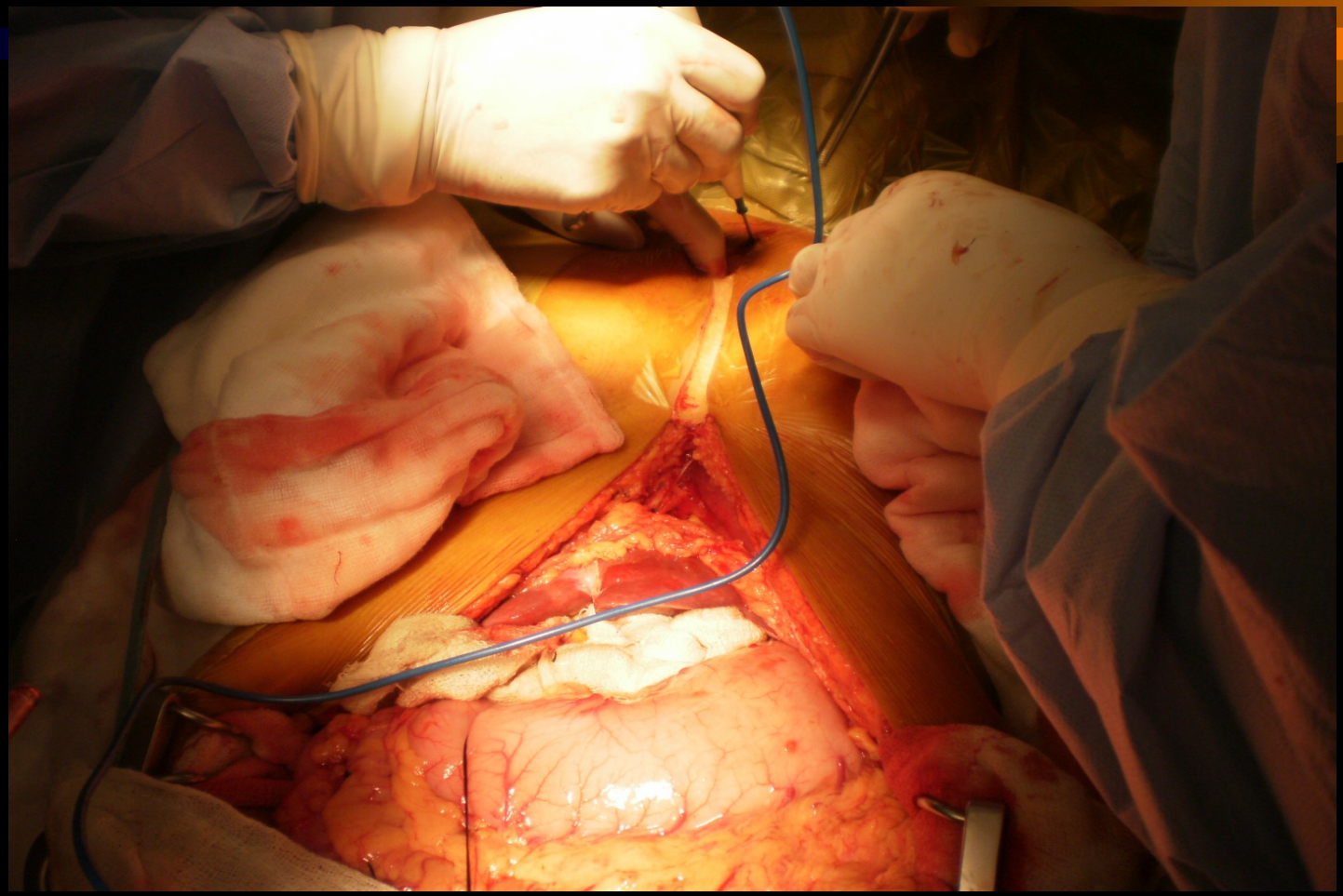




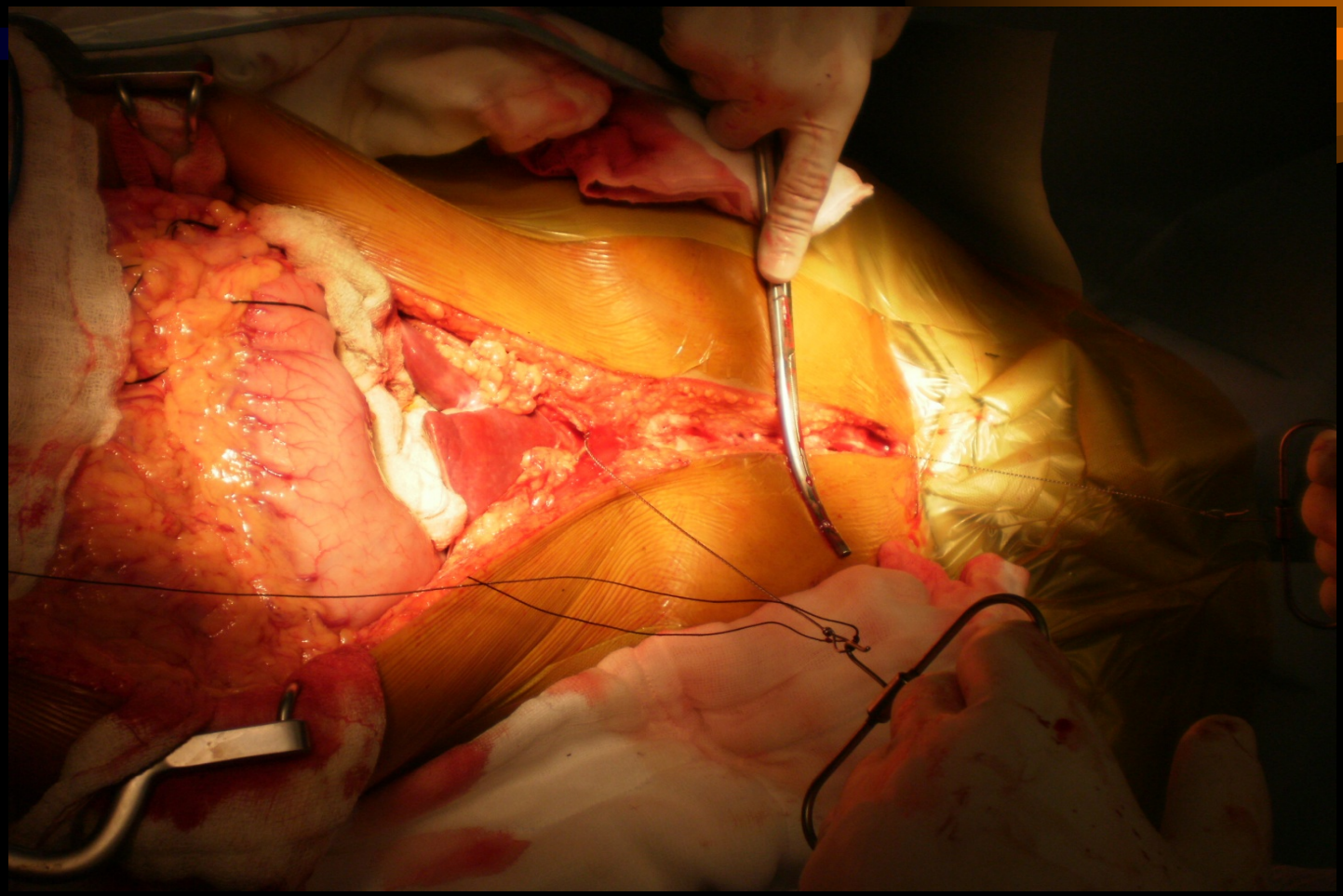
Gall Bladder emptied of bile



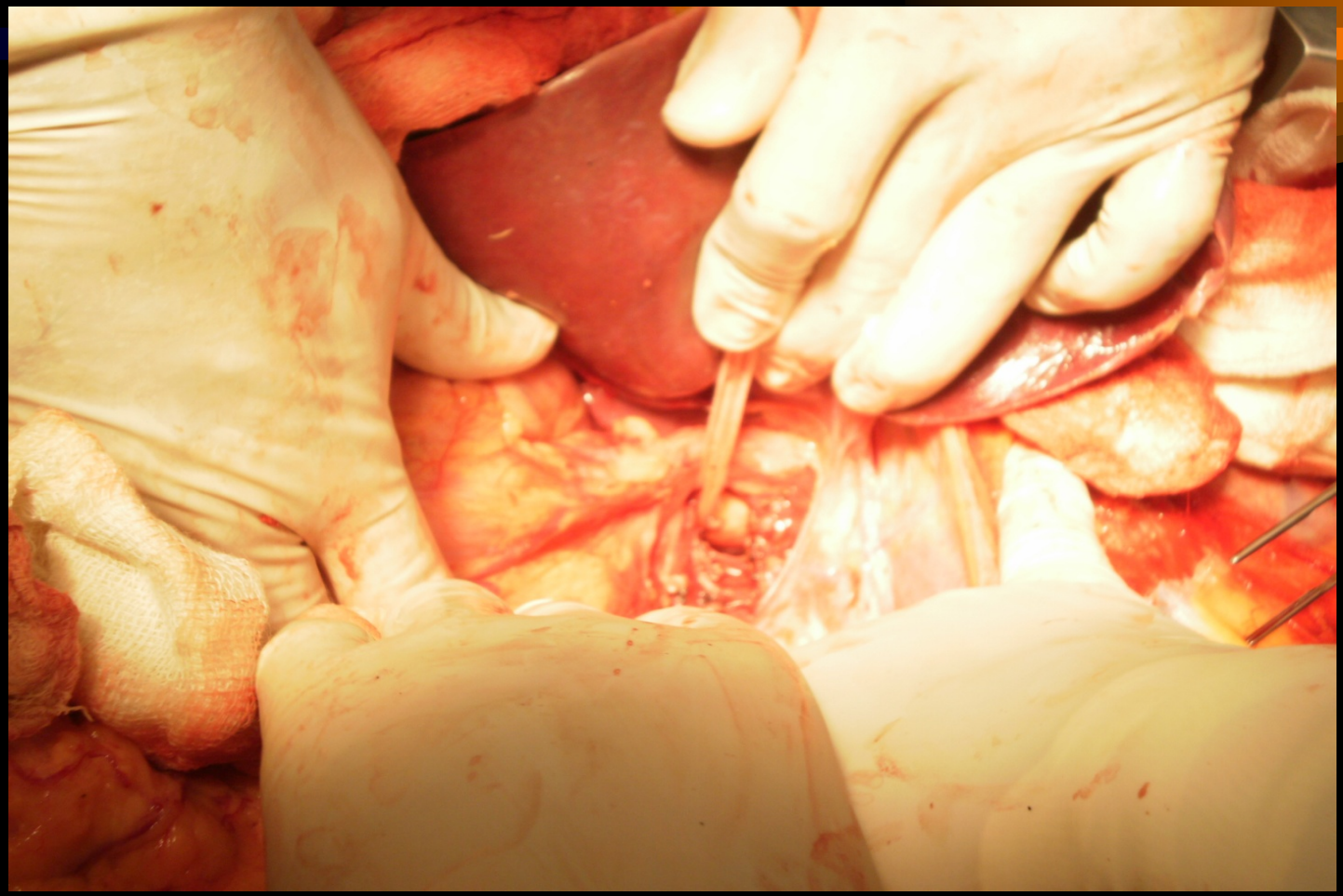
Sternal extension of incision



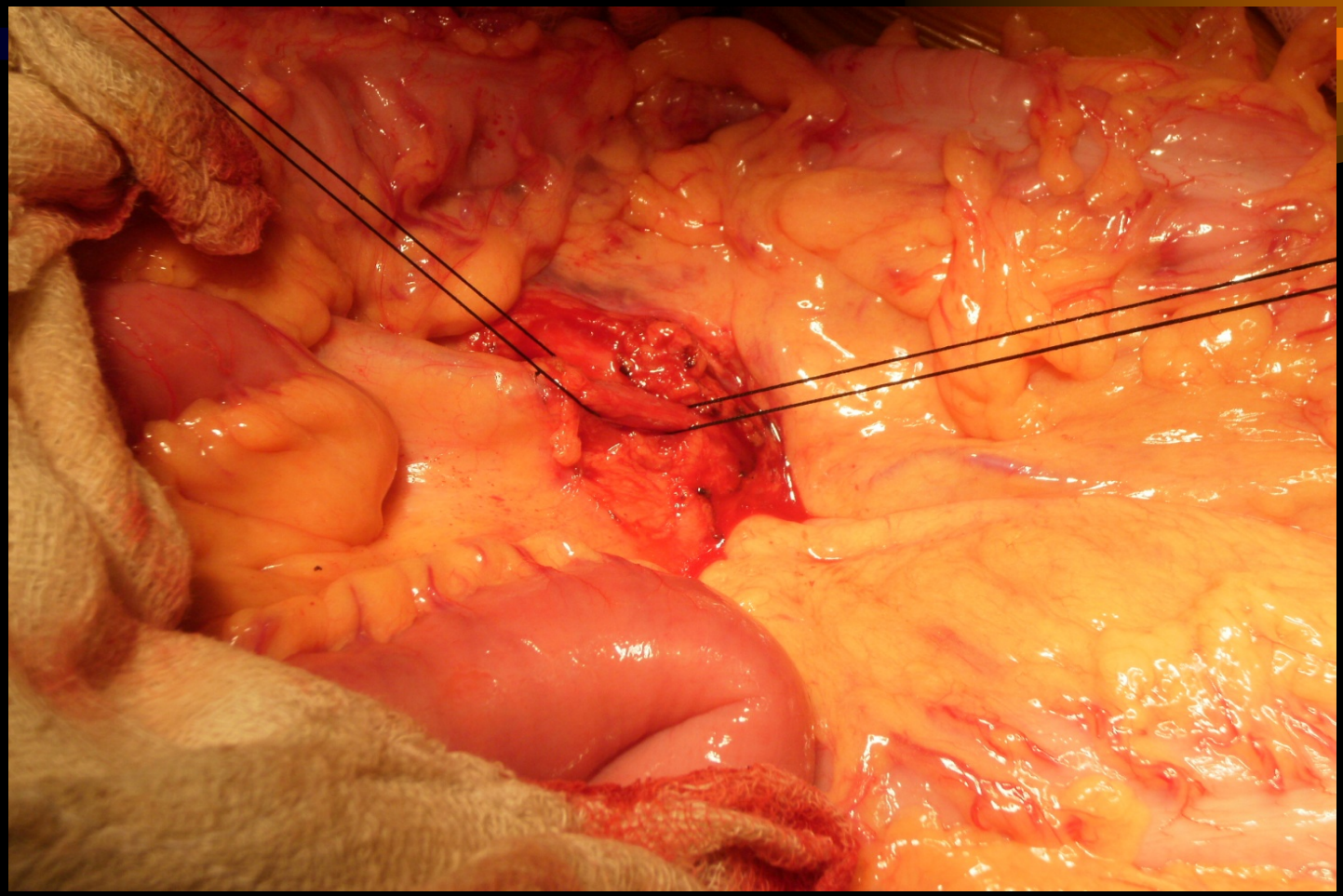
Sternotomy



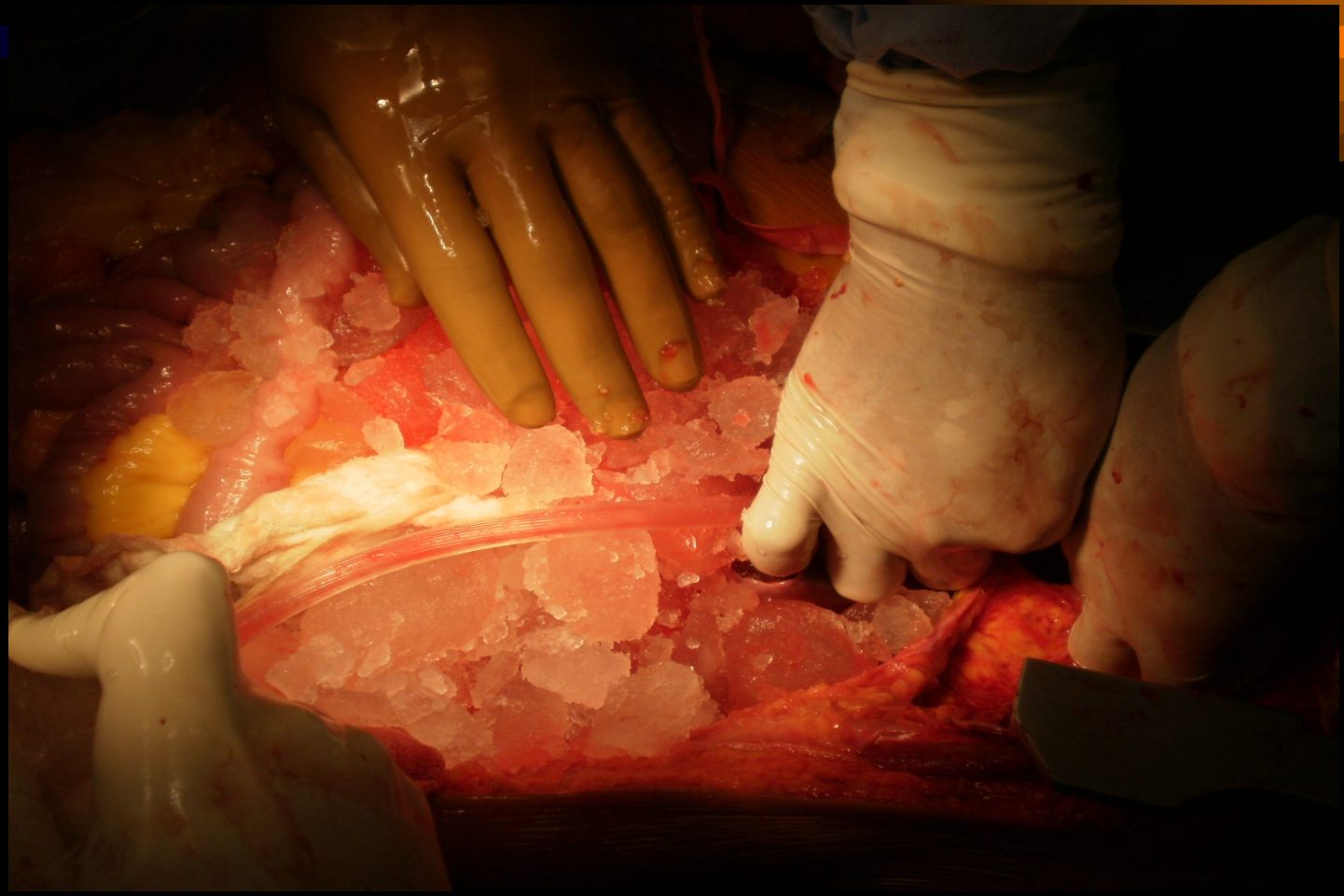
Isolation of Supra Coeliac Aorta



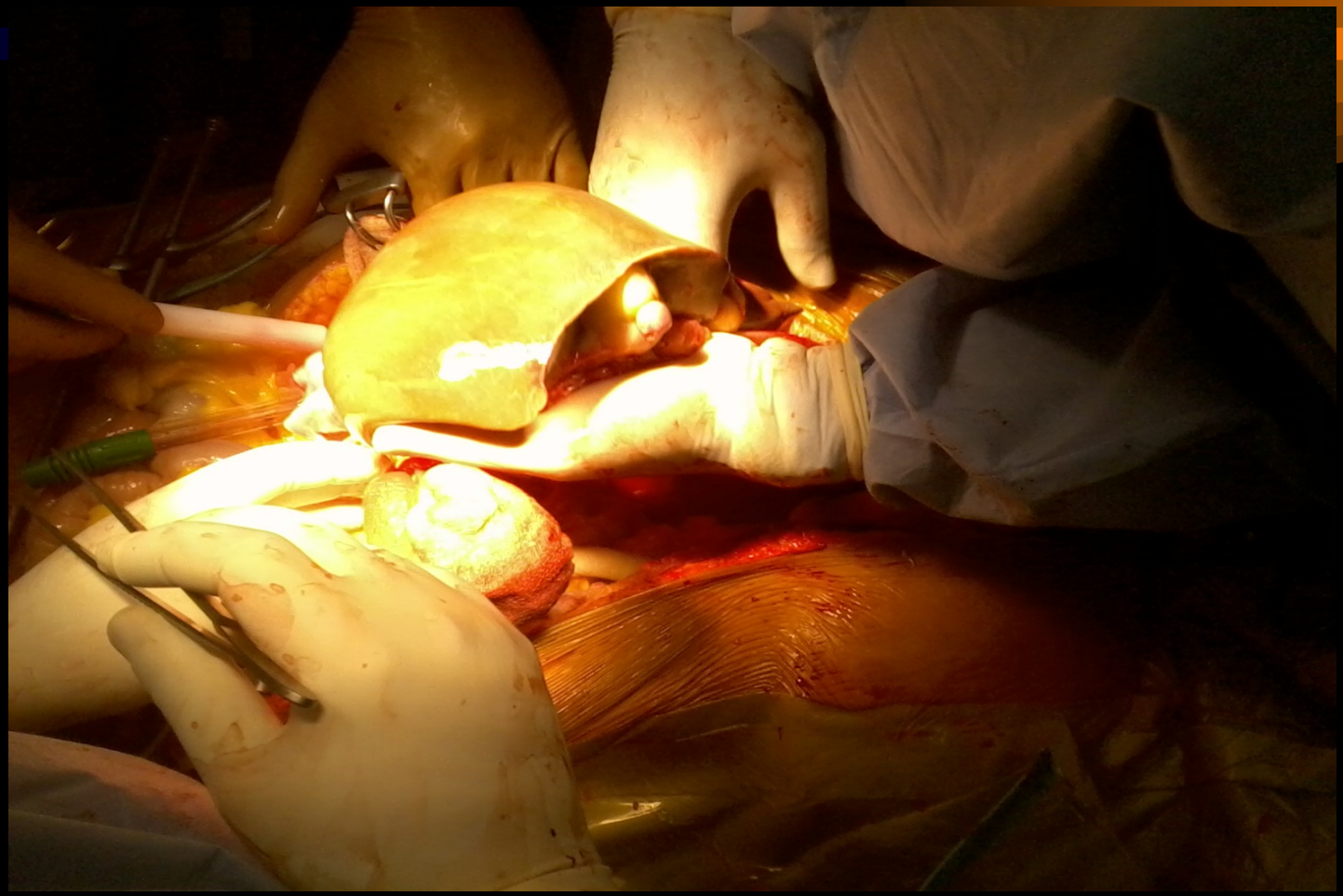
Cannulation of Sup Mes V



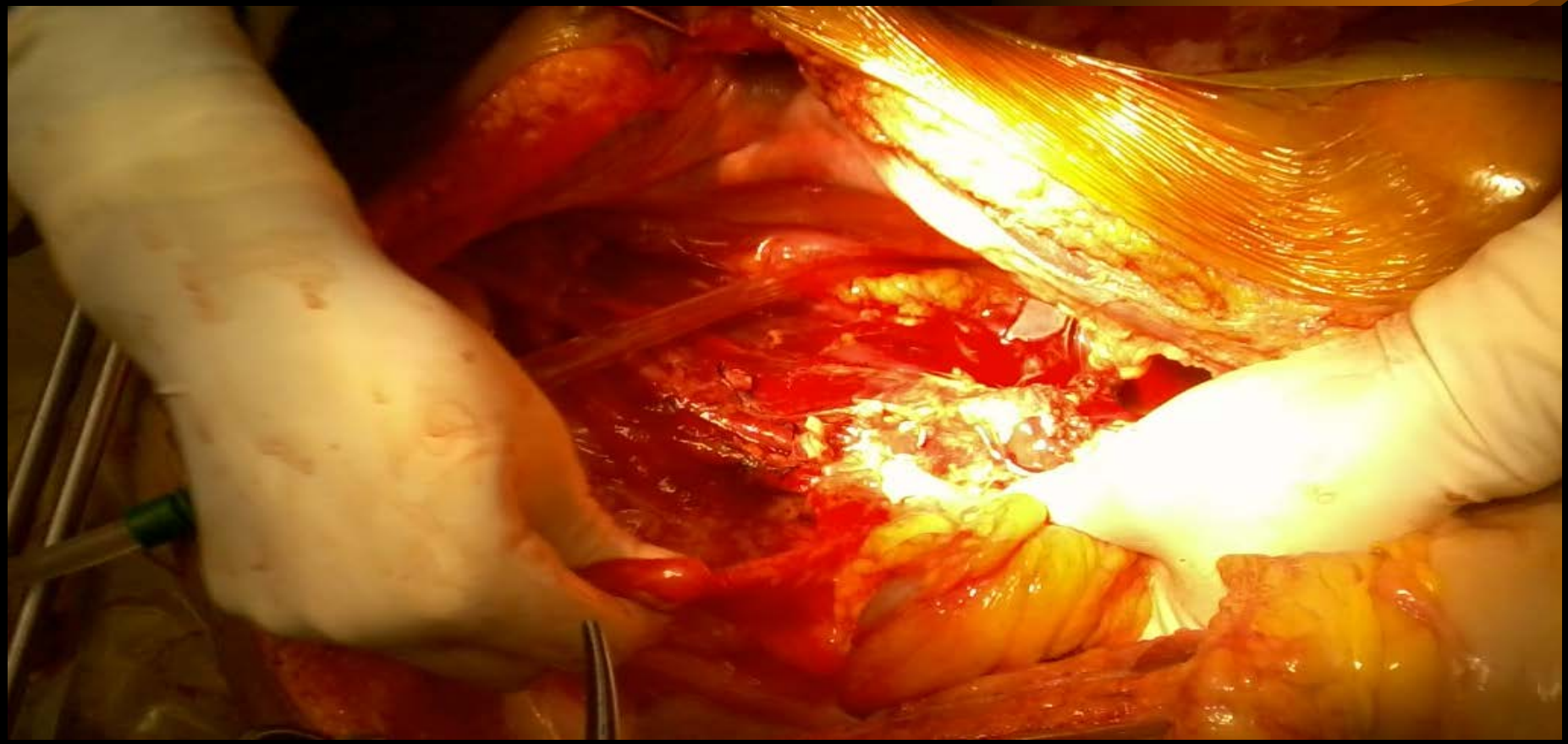
Ice slush.. Topical cooling of organs



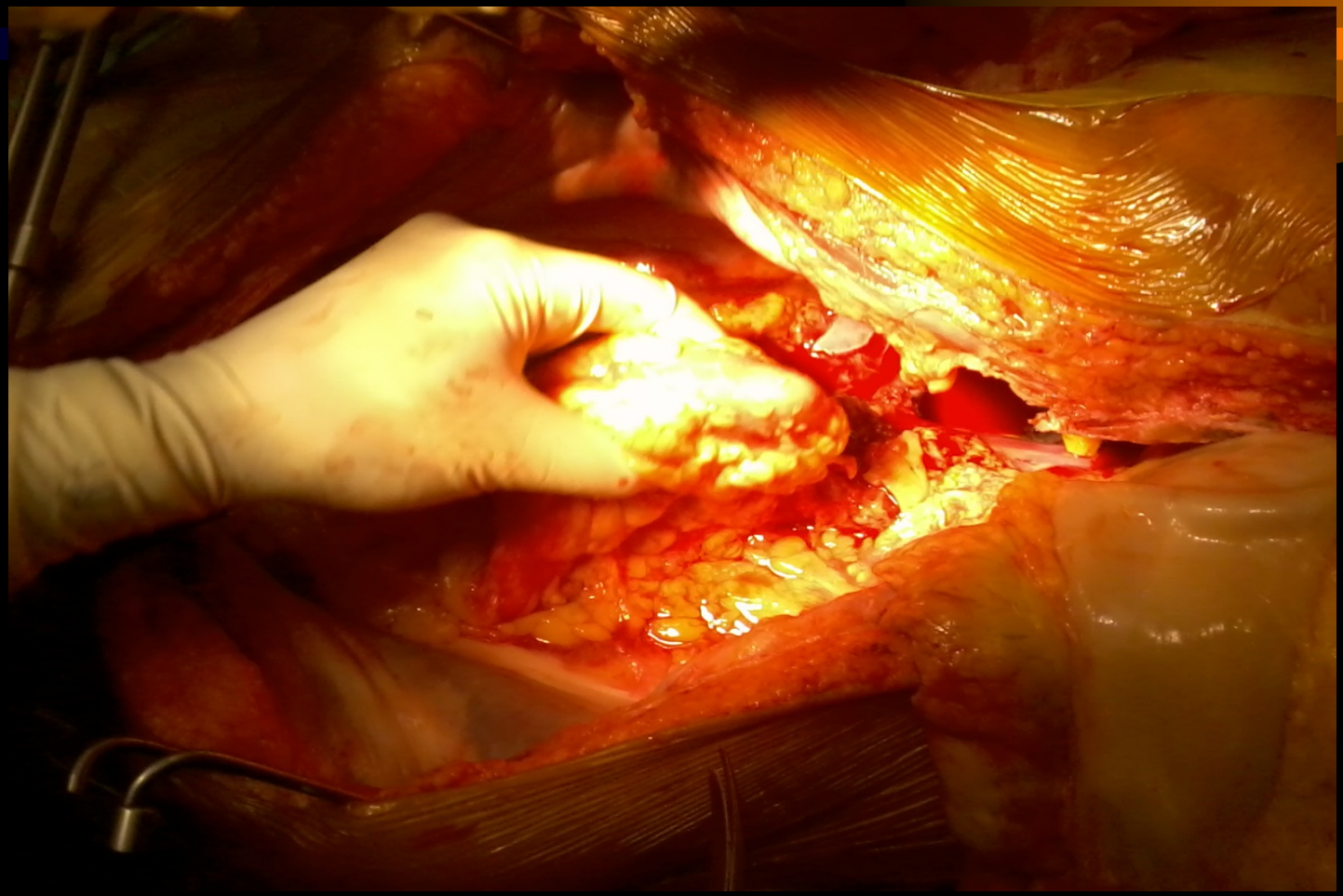
Delivery of Liver



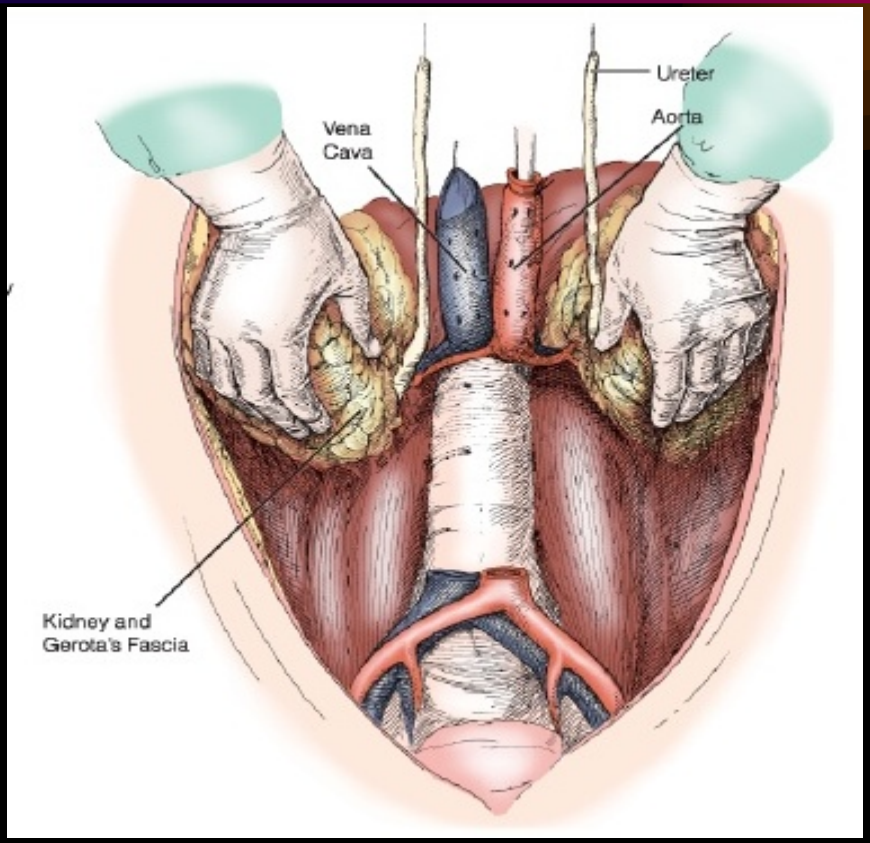
Safe renal harvest



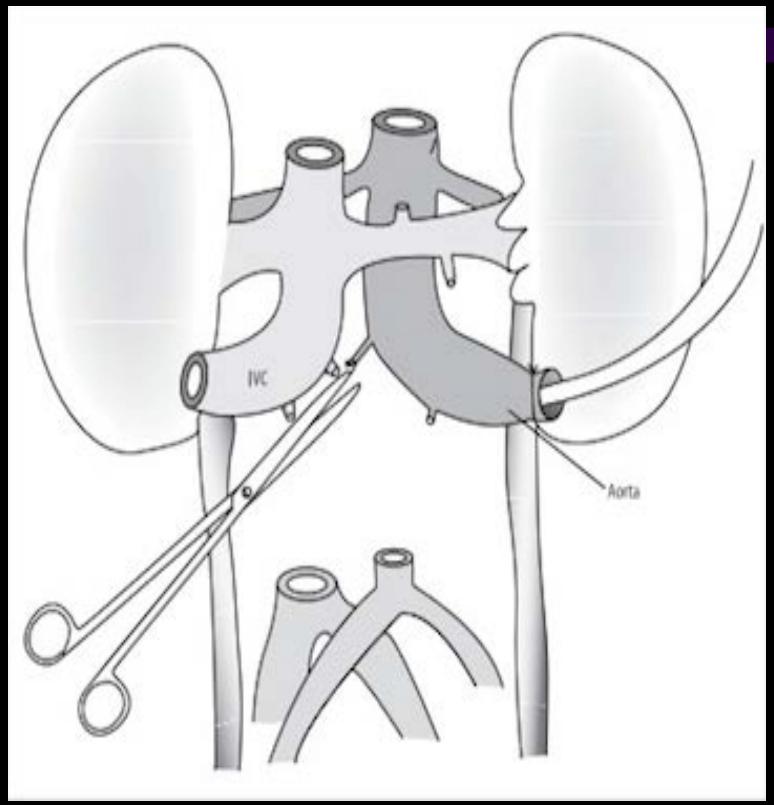
Separate Retrieval of Kidney

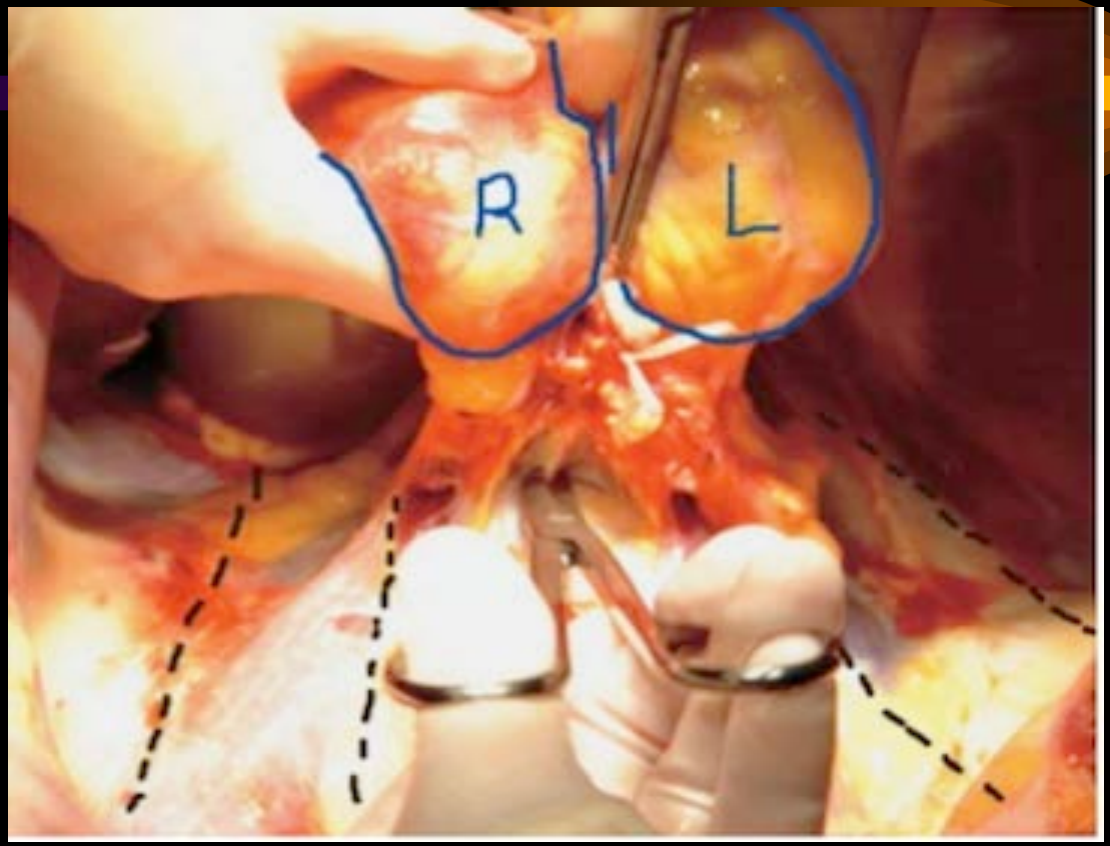


En bloc harvest of kidneys

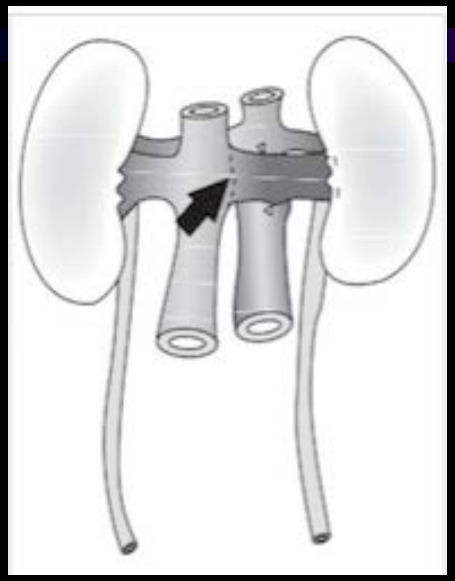


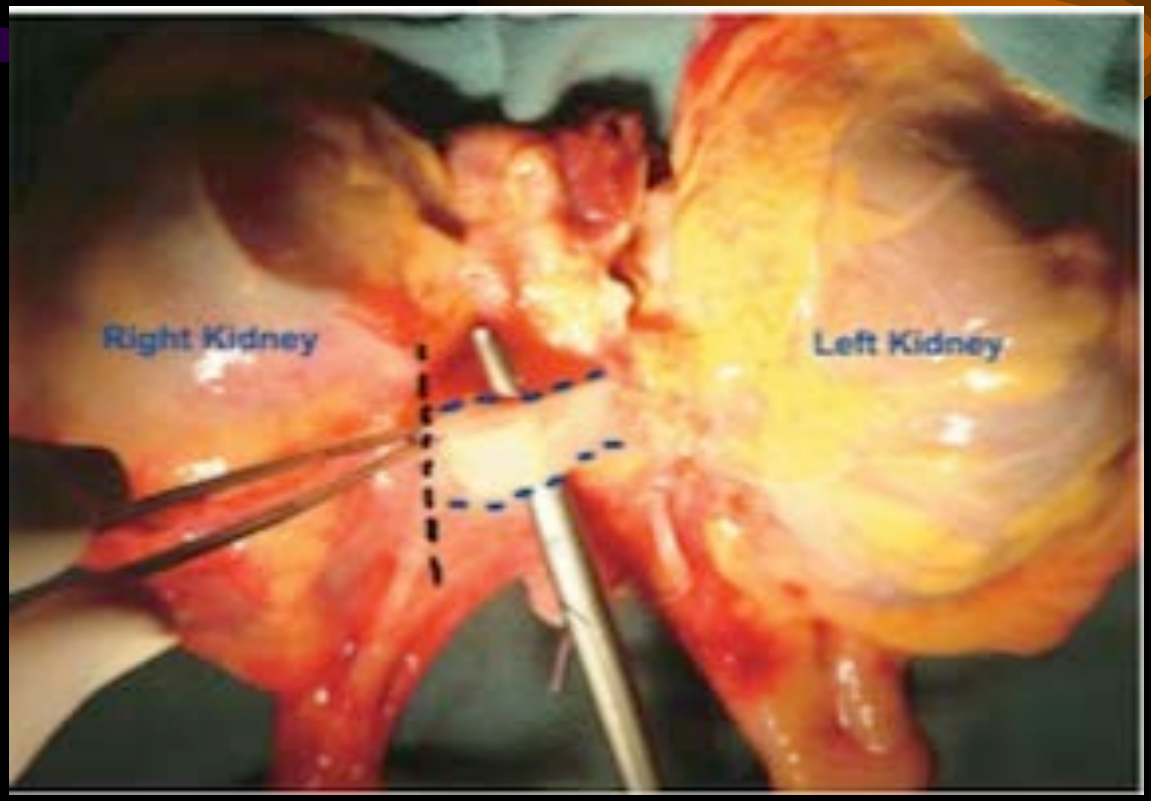
steps of en bloc kidney harvest



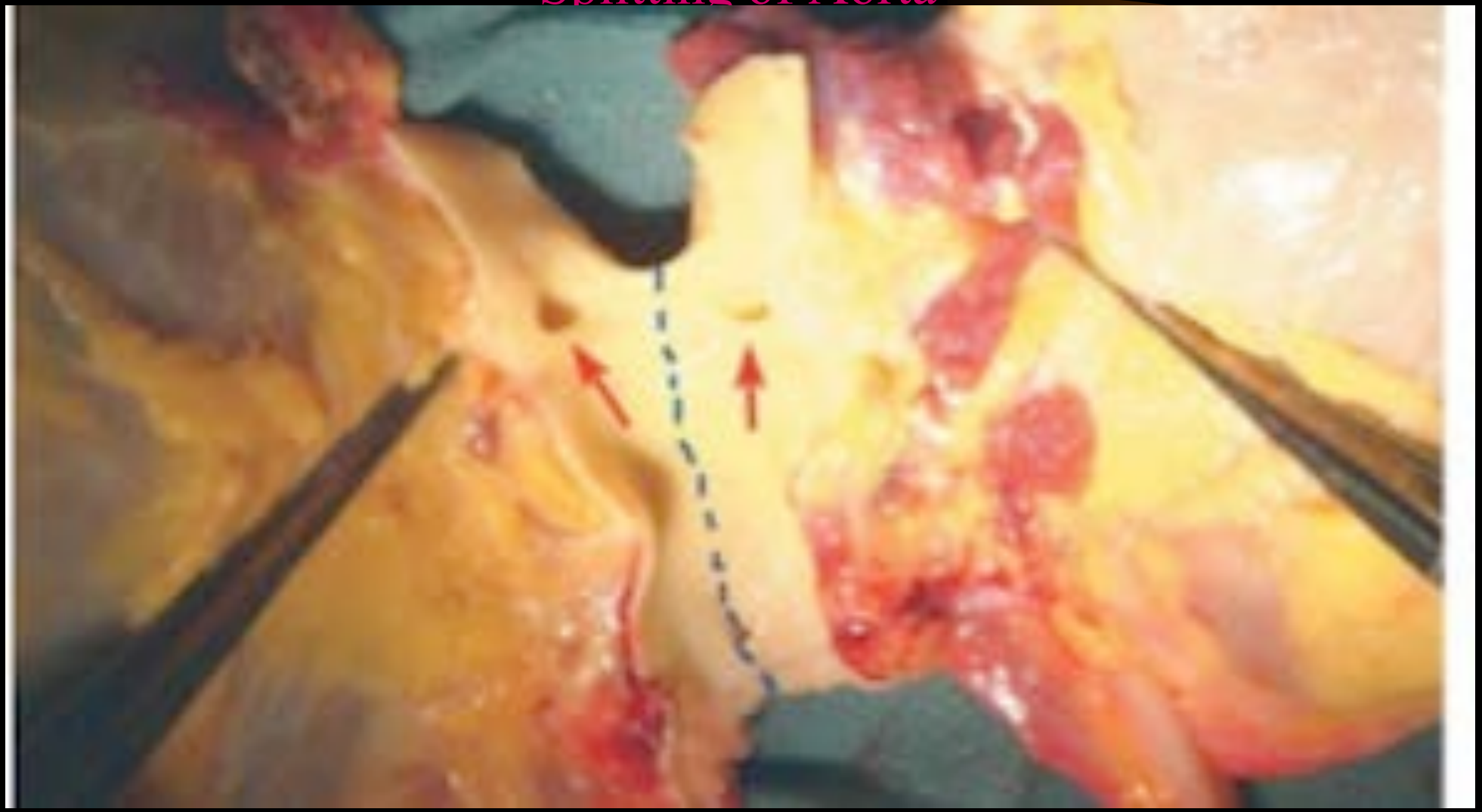


Division of L Renal Vein

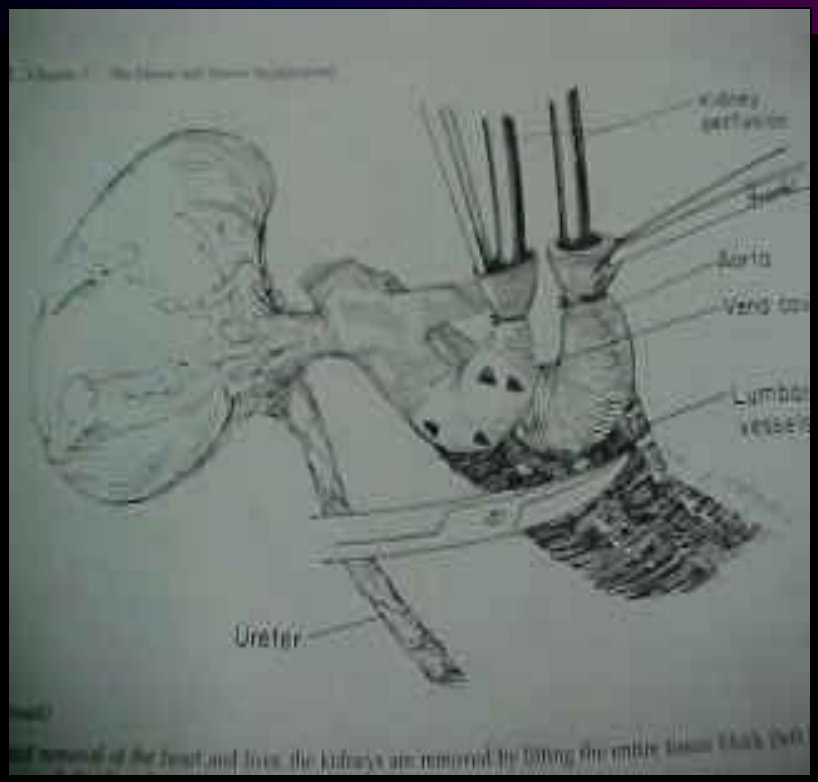


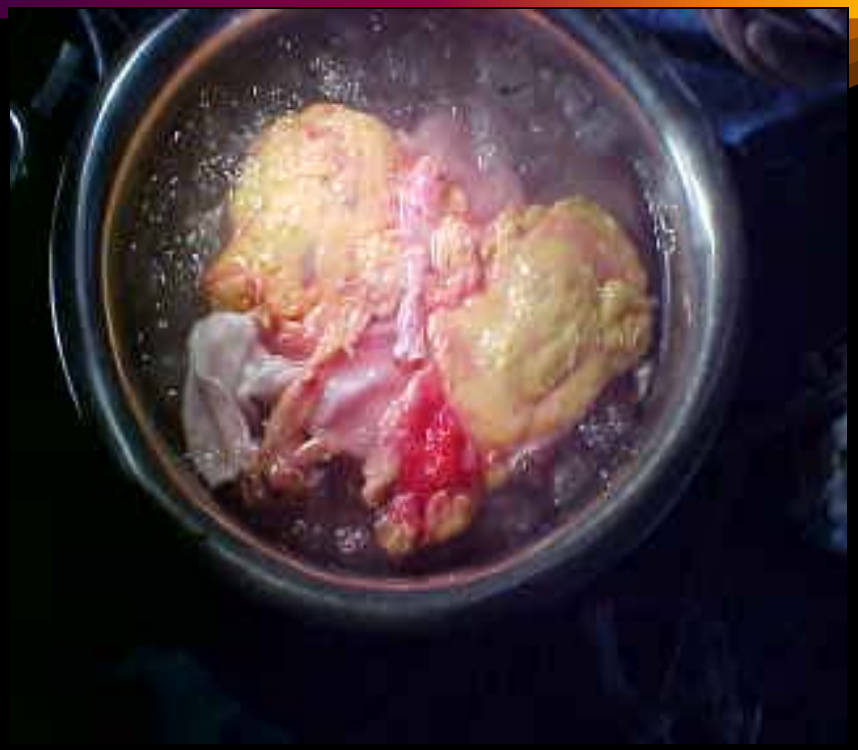


Splitting of Aorta

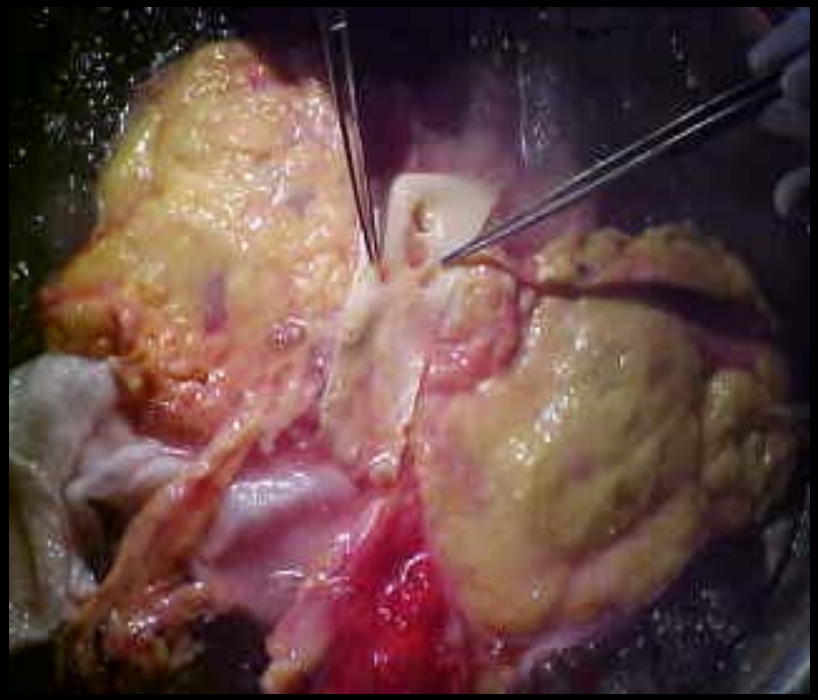


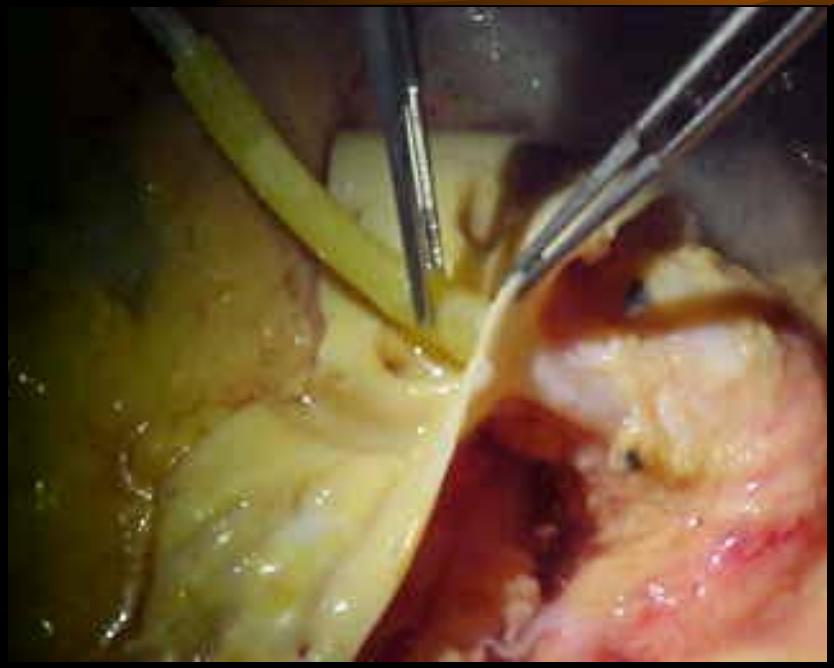
En block Recovery of Kidneys



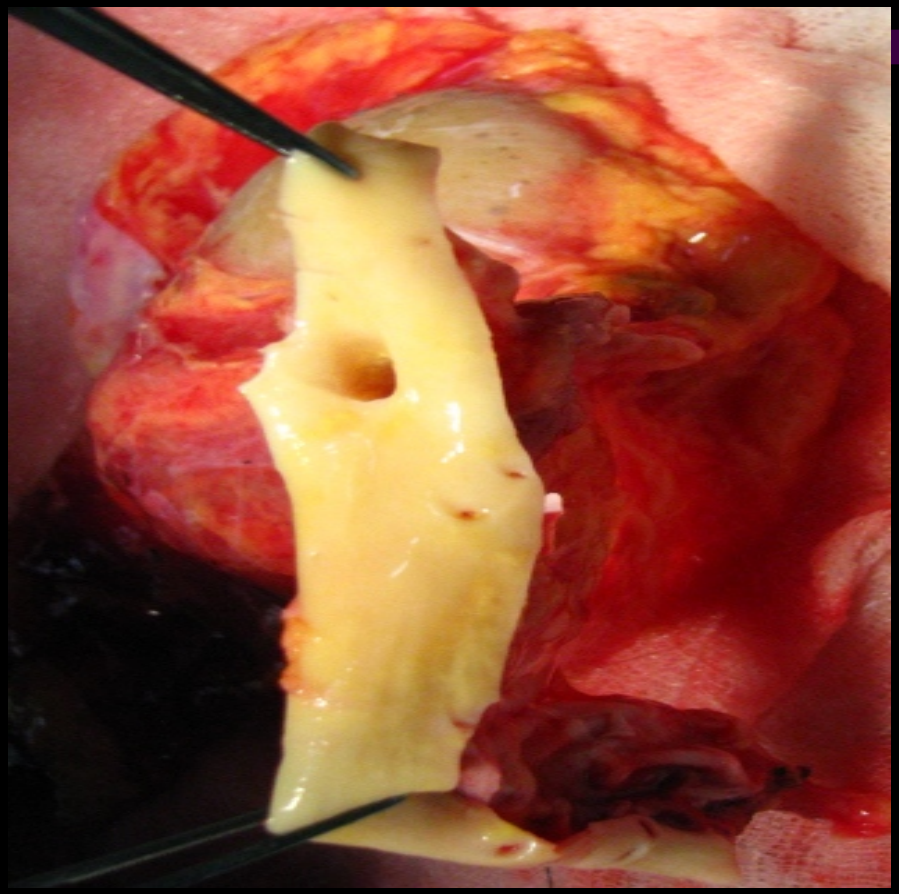


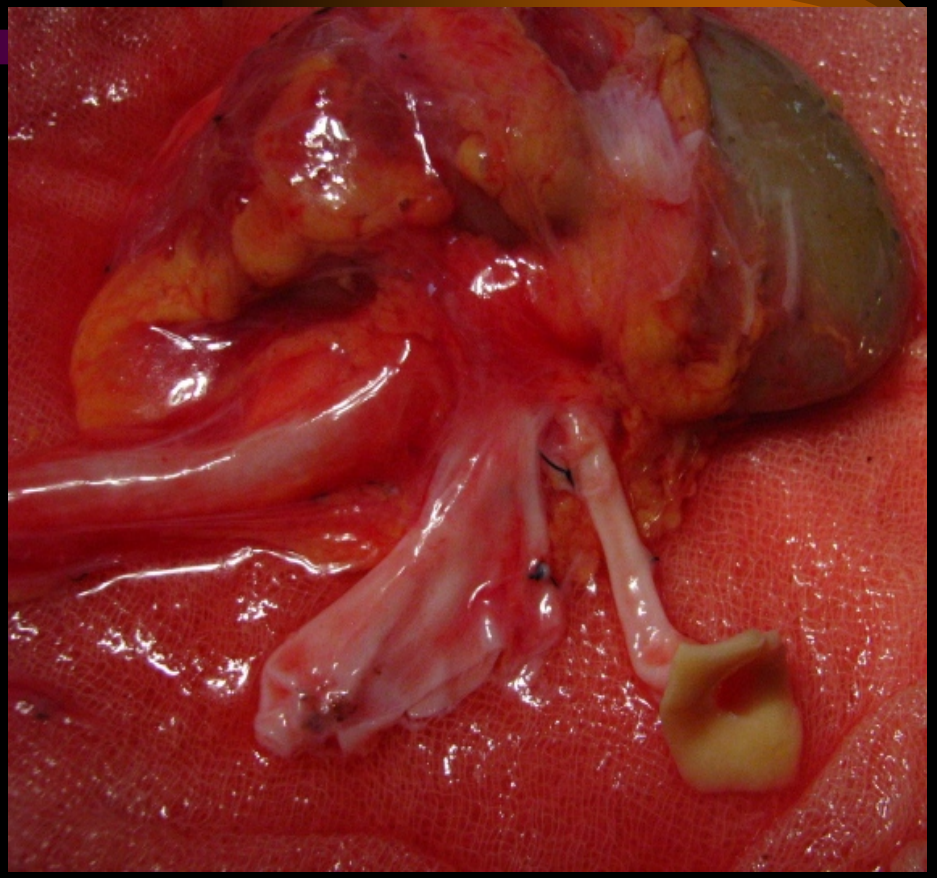
Division of Posterior wall of the Aorta
Care taken to Identify Single or Multiple Renal Arteries perfuse if needed



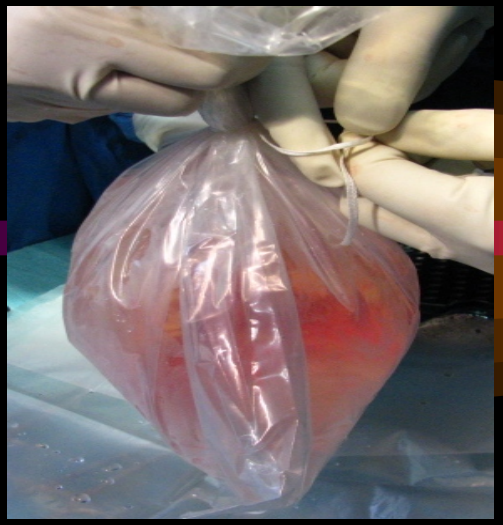
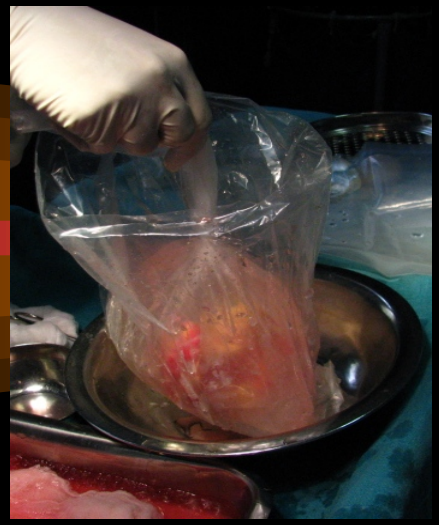


Individual Recovery of kidney



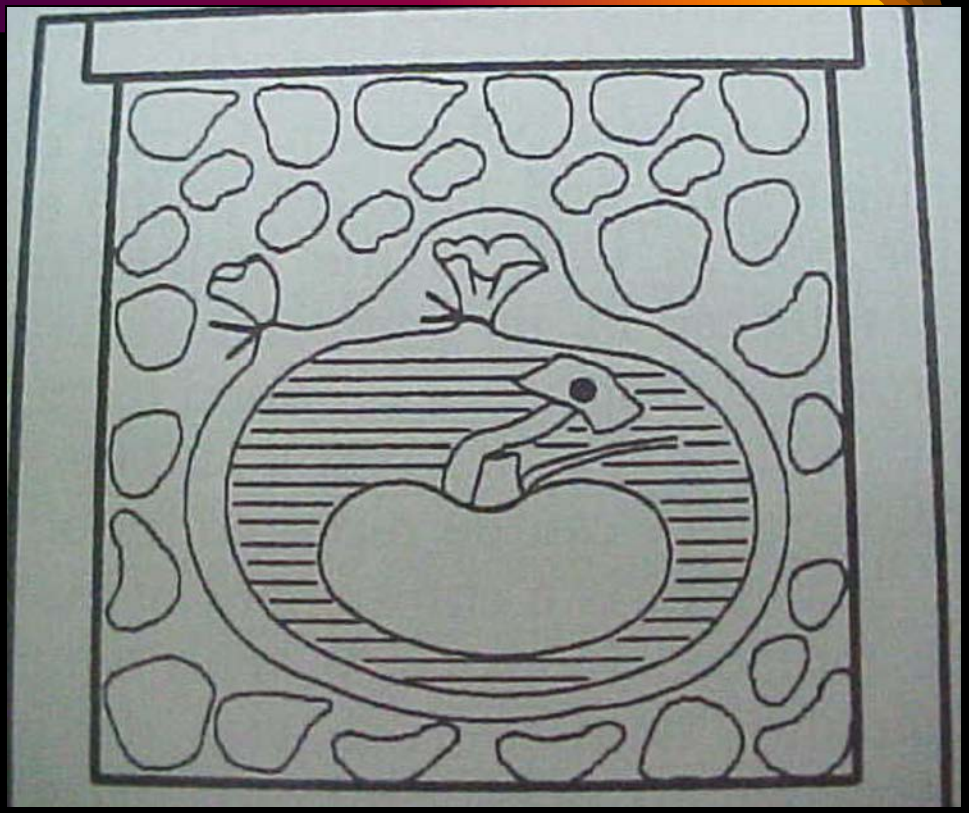


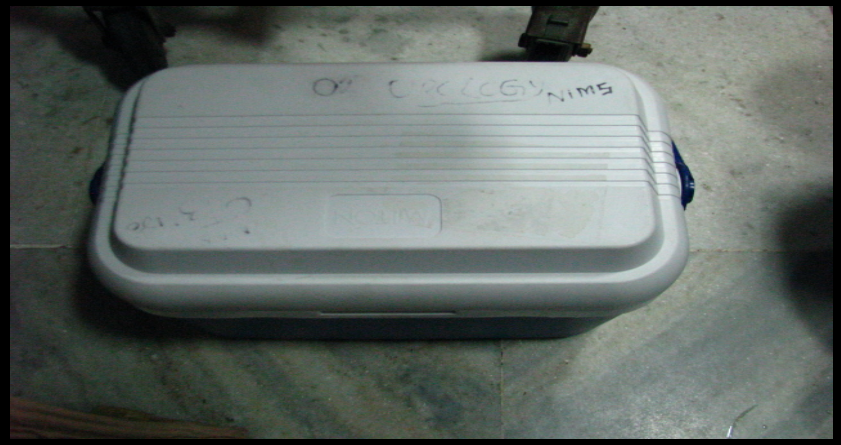



Kidney Packing

Kidney Packing & Transport





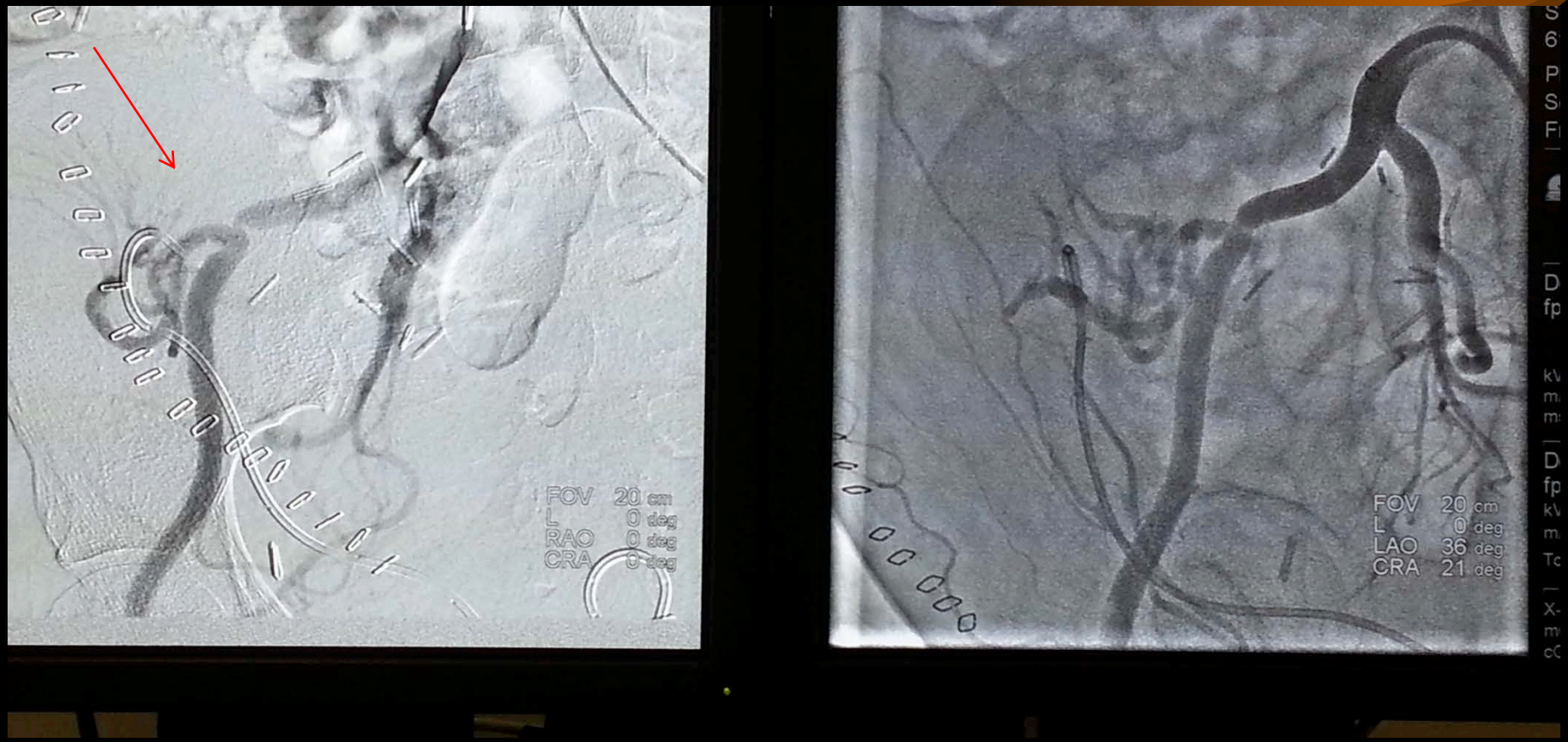
Early Complications

- Vascular thrombosis
  Haemorrhage
- Ureteral leak
- Rejection
- Infections

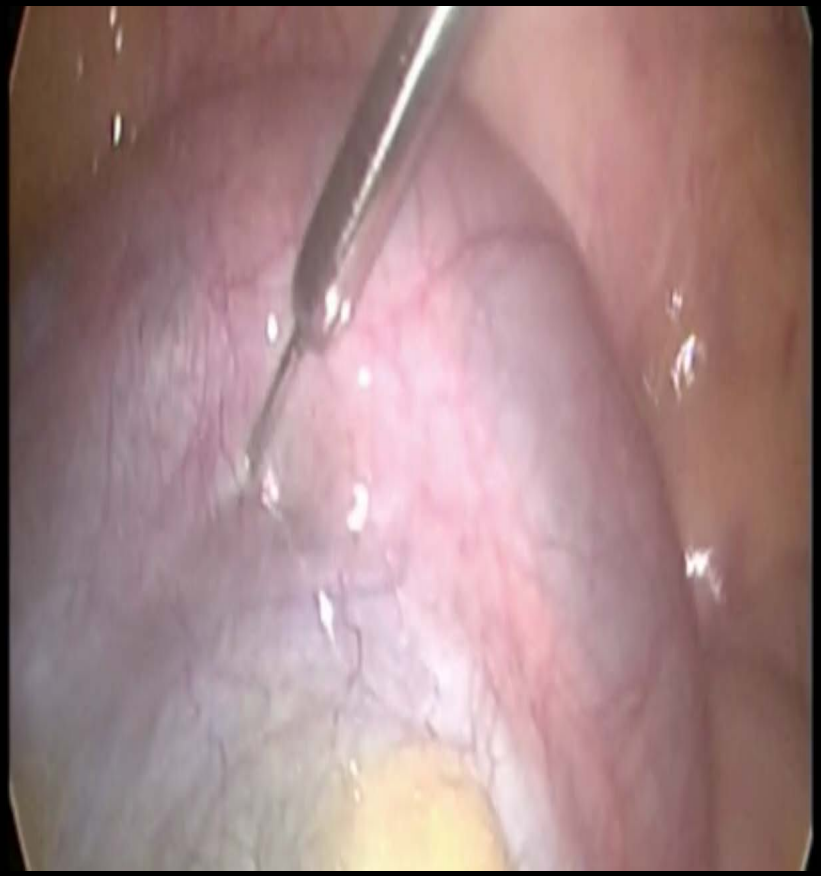
Late complications

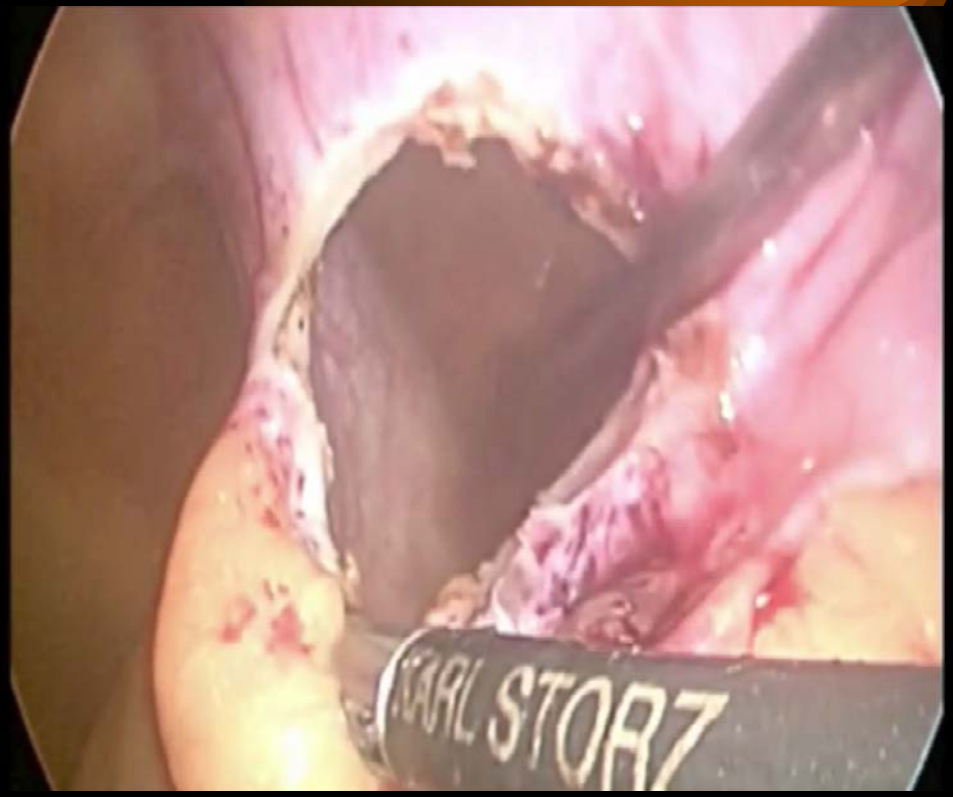
- Renal Artery stenosis
- Lymphocele
- Ureteric stenosis
- Chronic Rejectio

Renal A Stenosis- Angioplasty



Post Transplant Lyphocele- Laparoscopic Marsupialisation





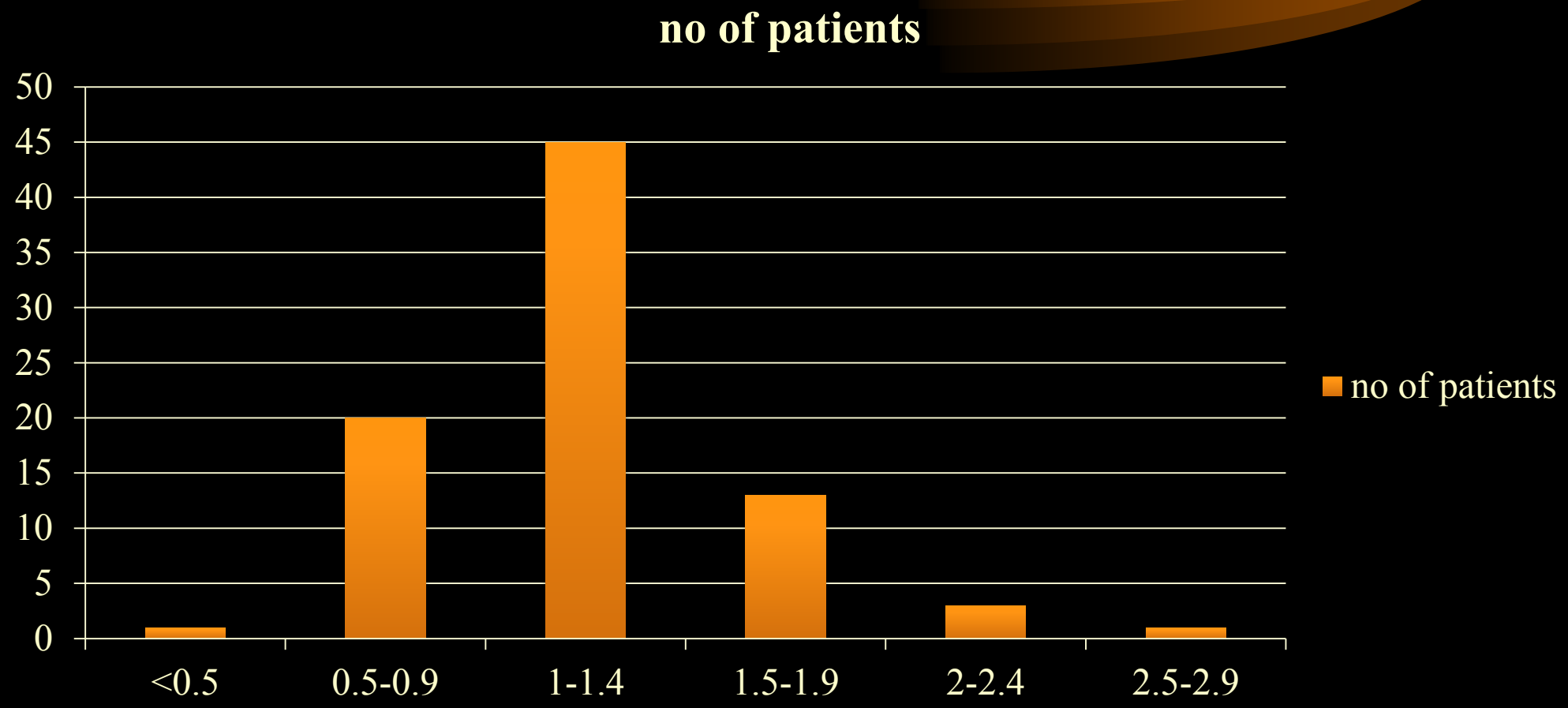
An analysis of first 100 transplants at BLK Hopsital

- Duration Aug 12 – Aug 14
- 10 Cadaver Transplants
- HIV positive , HBSAg Positive ,HCV positive
- Dual virus HBV And HCV positive
- Redo transplants – 5 patients
- Sensitised recipients 2
- 3 paediatric tranpslants – Small neurogenic bladder .. Augmented
- Foreign Nationals ; Afghansitan / Iraq/ Nepal/ Nigeria/ Kenya

Donor profile

- Parents : Father 10
  Mother 28
- Spouse: Wife 19
  Husband 3
- Sibling 19
- Children Son1
  Daughter 1
- Grandmother 1
- Unrelated 9
- Cadaver 10

Creatinine at Discharge



Recipient Data

- 6 deaths
- 5 Sepsis from Pneumonia , UTI
- 1 – bleed after graft nephrectomy

- Funcitonal grafts at 1 yr 97%

CONCLUSIONS

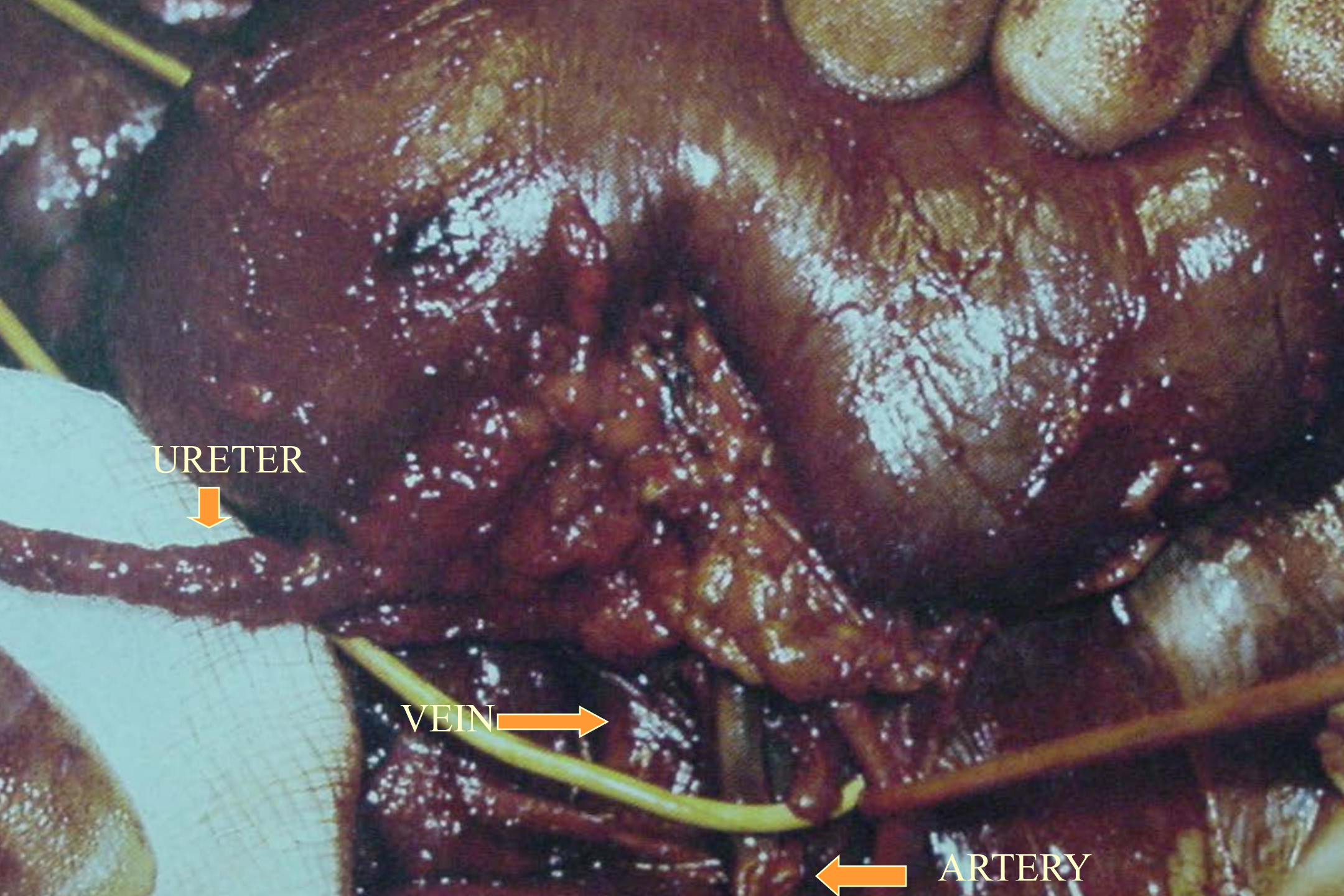
- Surgical accuracy is critical
- Cadaver transplant is possible key to supply demand gap

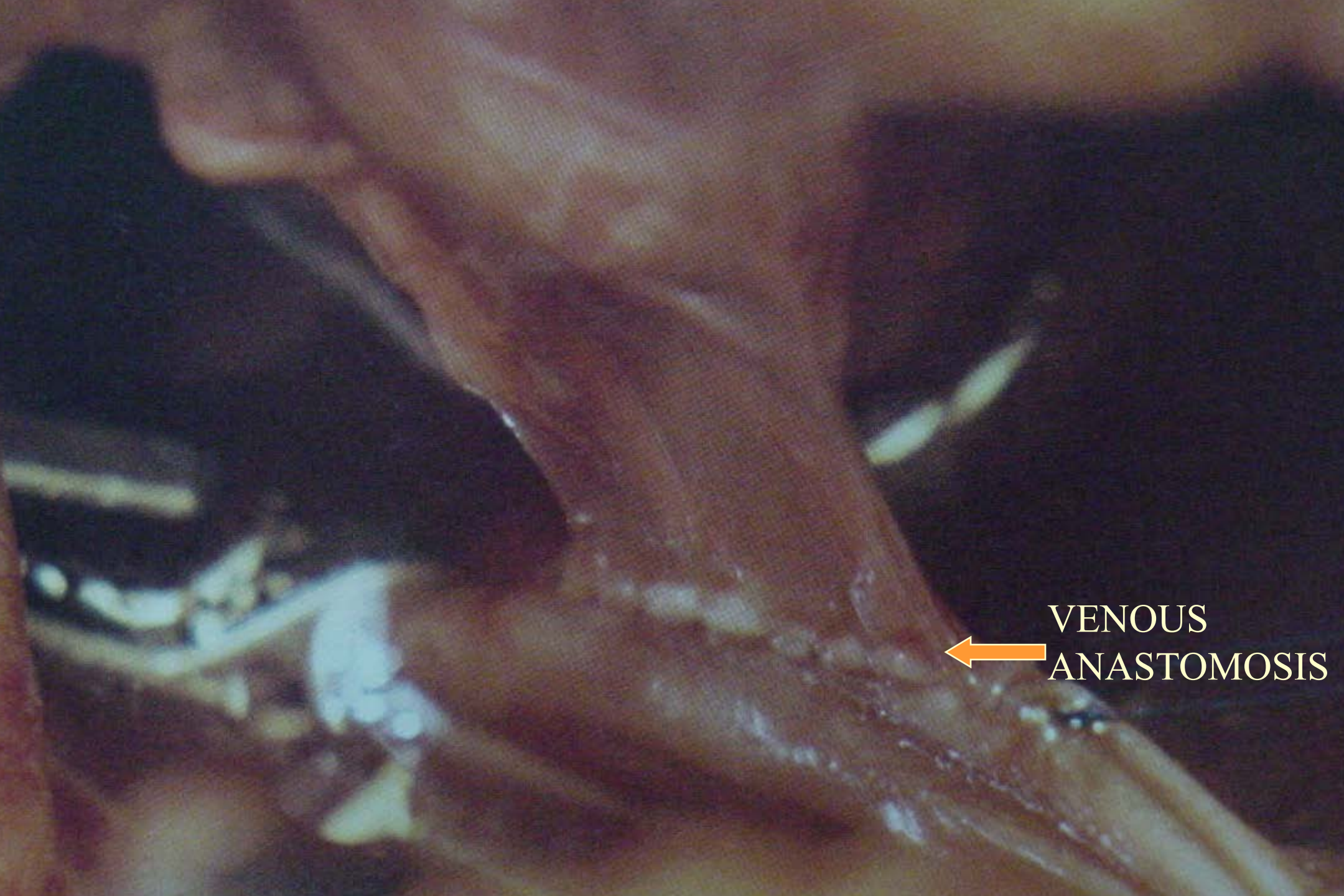
Not an operation to be taken lightly – kidneys are precious and hard to come by

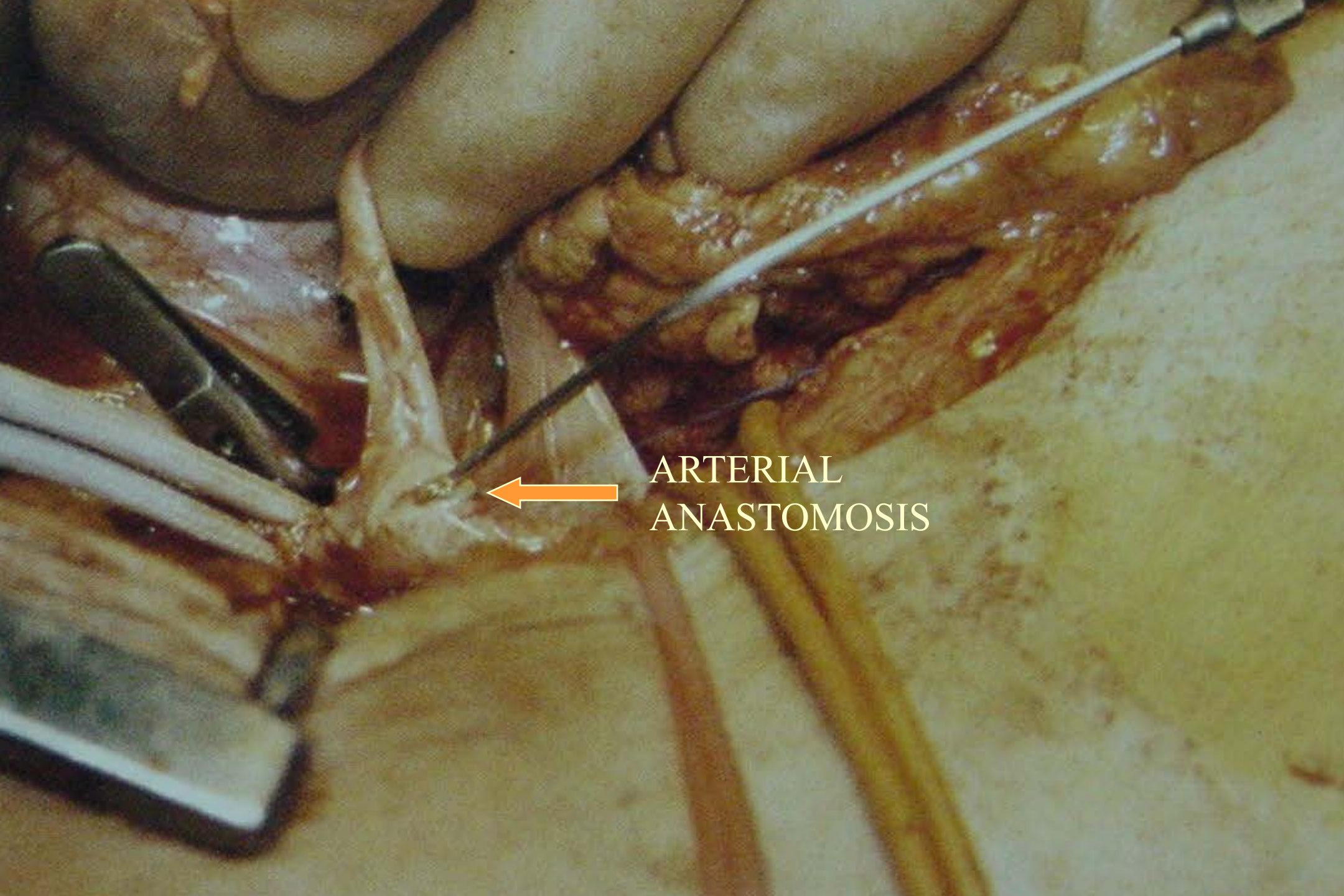
Meticulous surgical technique

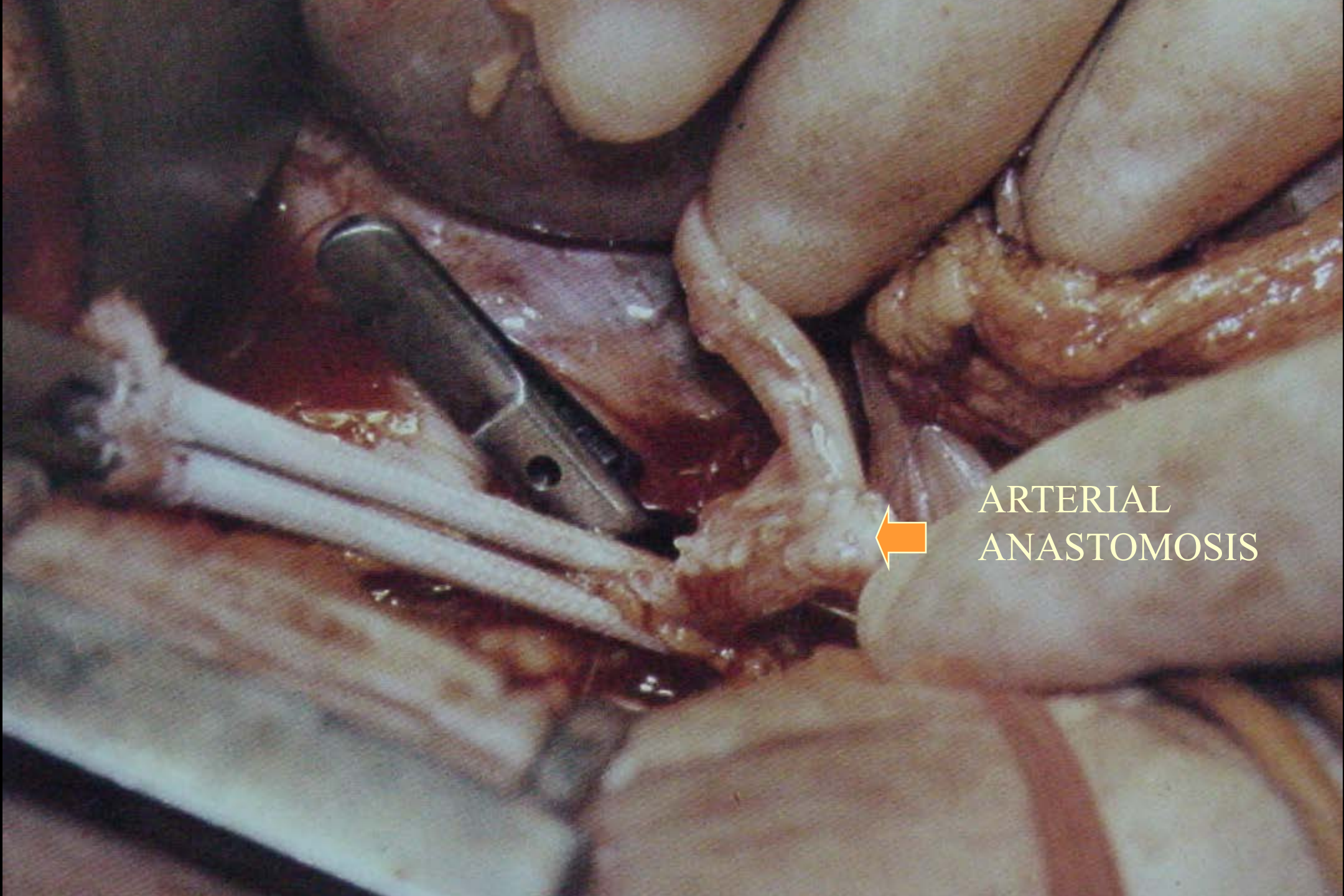
TEAM EFFORT

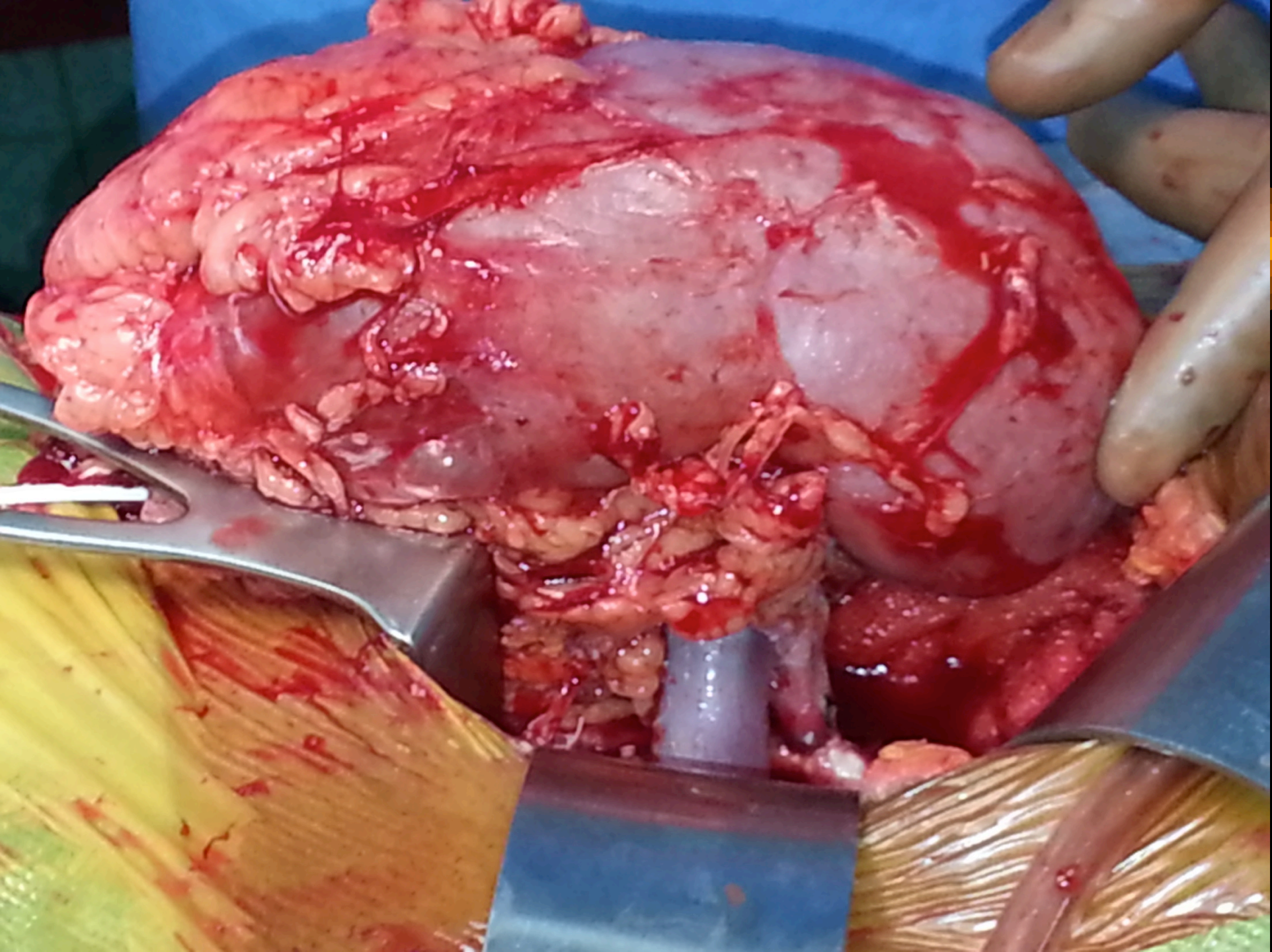

THANK YOU

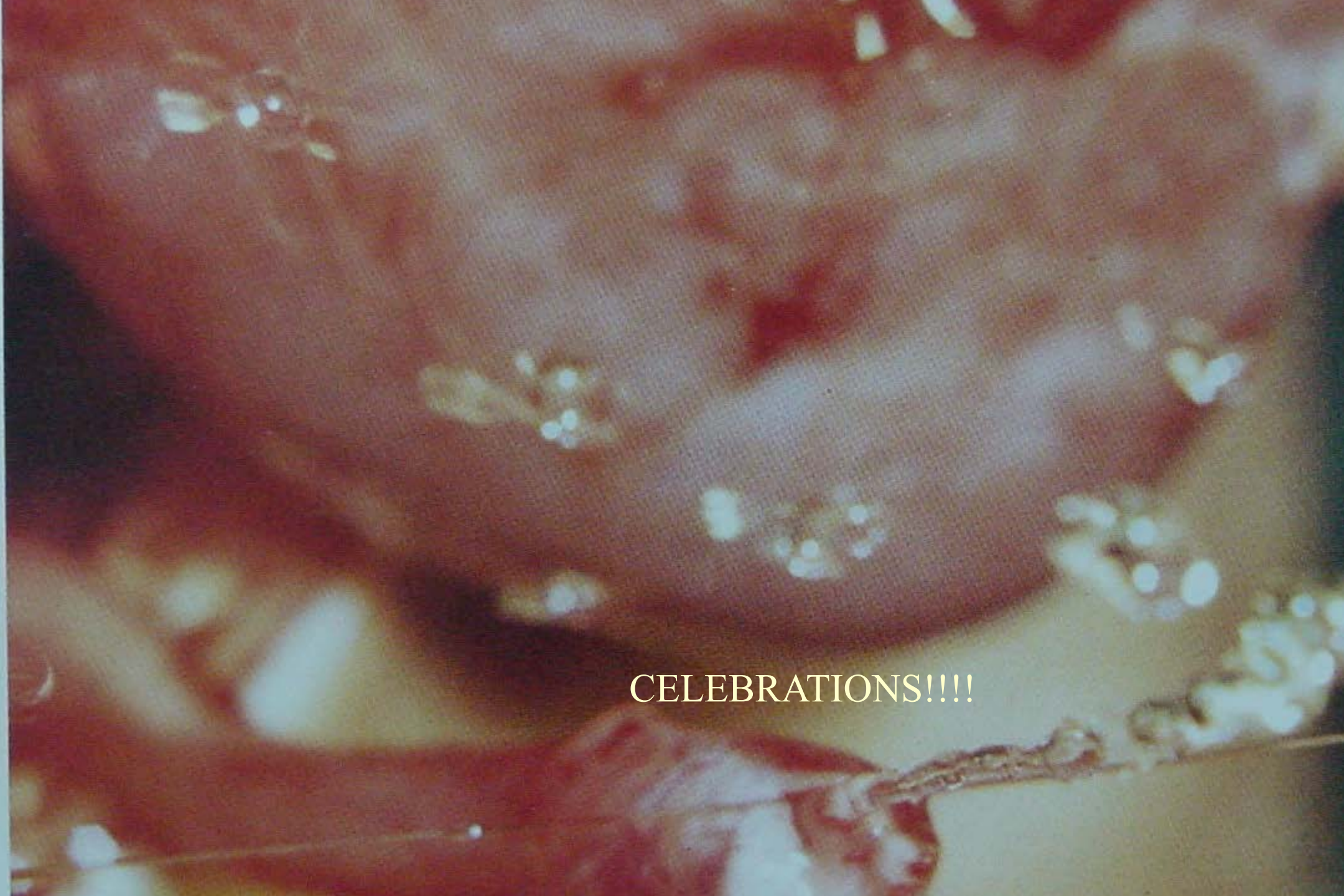

URETER
VEIN
ARTERY

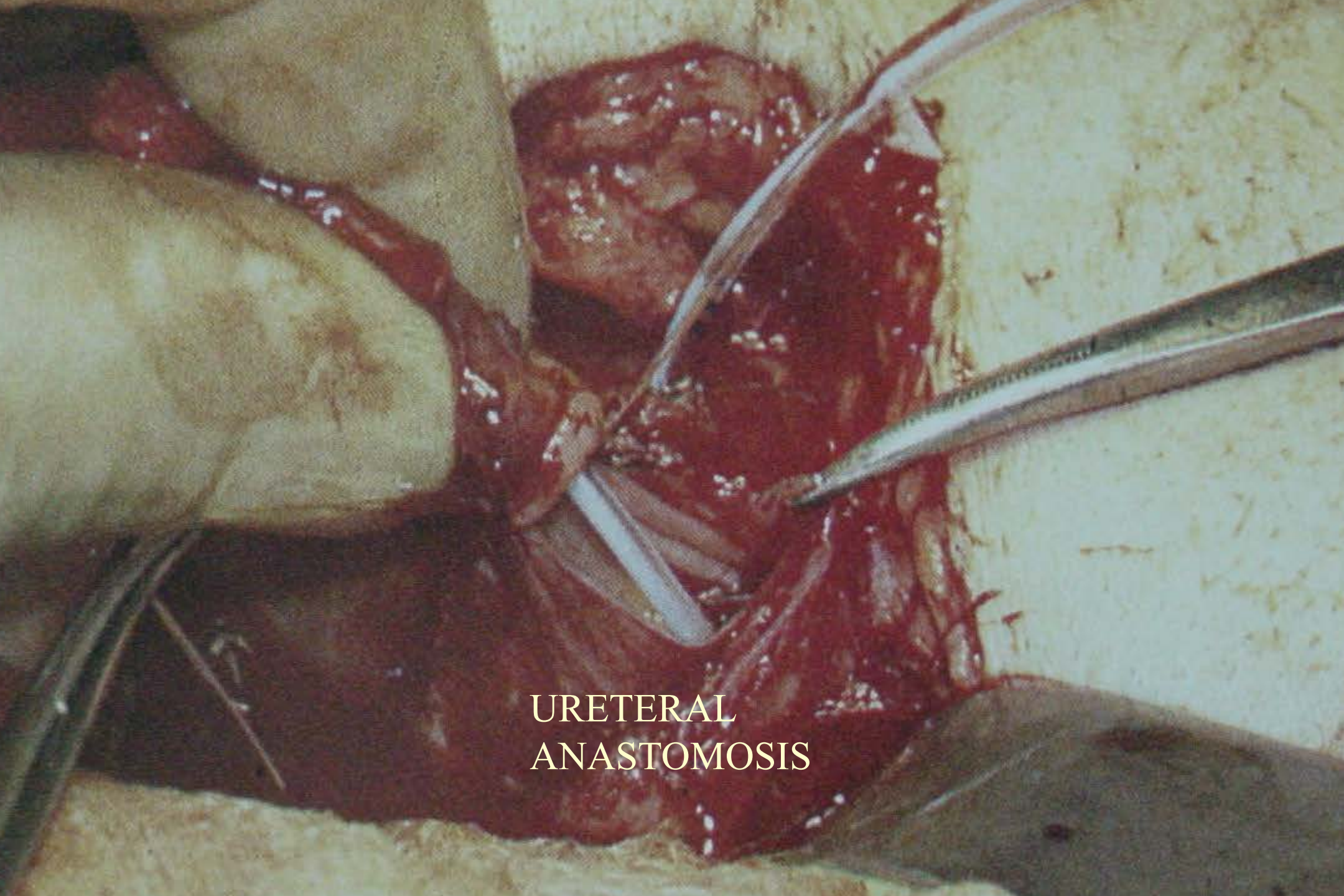

VENOUS
ANASTOMOSIS


ARTERIAL
ANASTOMOSIS


ARTERIAL
ANASTOMOSIS




CELEBRATIONS!!!!


URETERAL
ANASTOMOSIS

Difficulty in Diagnosis of Nasopharyngeal Pathology from Adults and Children

Dr. Ivan Matela.,PhD
ENT Specialist, *Sen Sok IU Hospital*
ivan_matela@mail.ru

Abstract

Diagnosis of nasopharyngeal pathology

Matela Ivan, Mao Sophea
26.04.2014
Sen Sok IU hospital

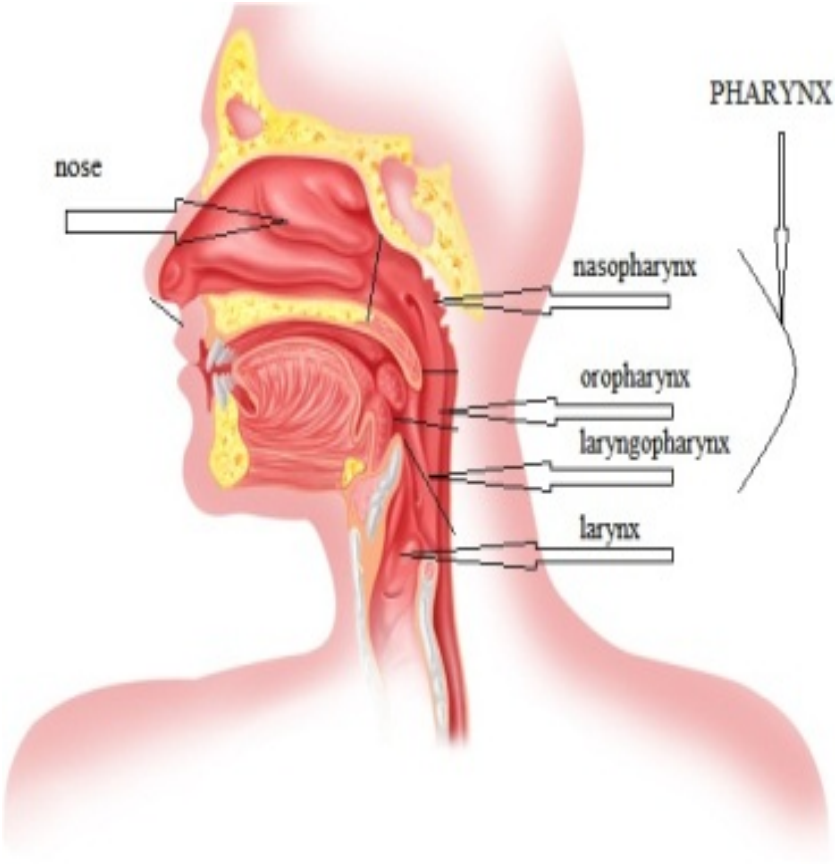
Why we have choosed this topic?

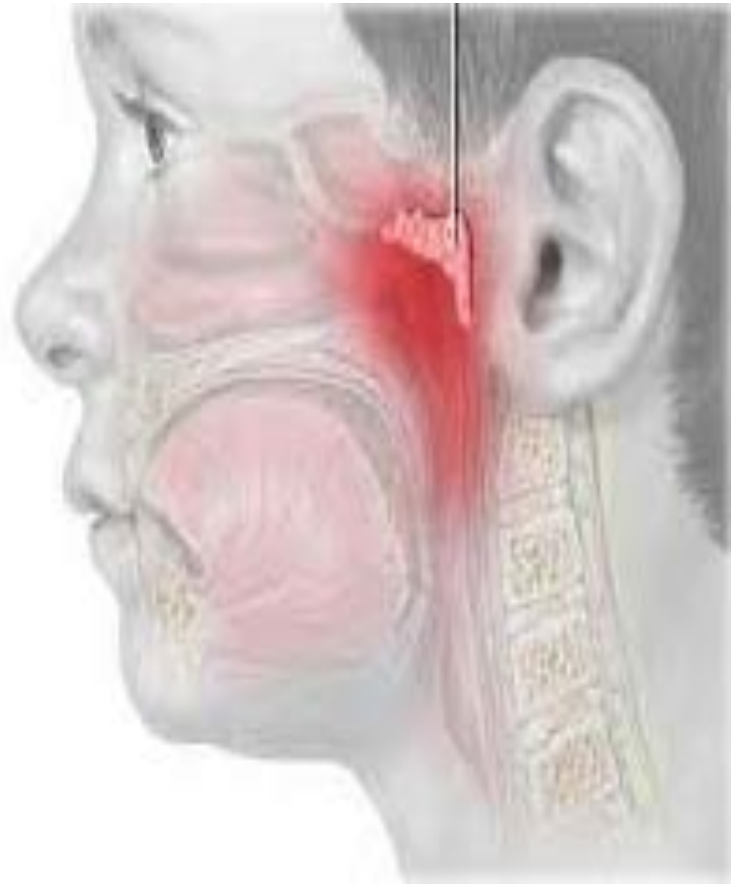
1. Nasopharynx is one of the difficult anatomical areas for diagnosis,

2. Results of examination of the nasopharynx by physicians are not always correctly interpreted. So, probability of misdiagnosis is very high and after that treatment may be not correct.

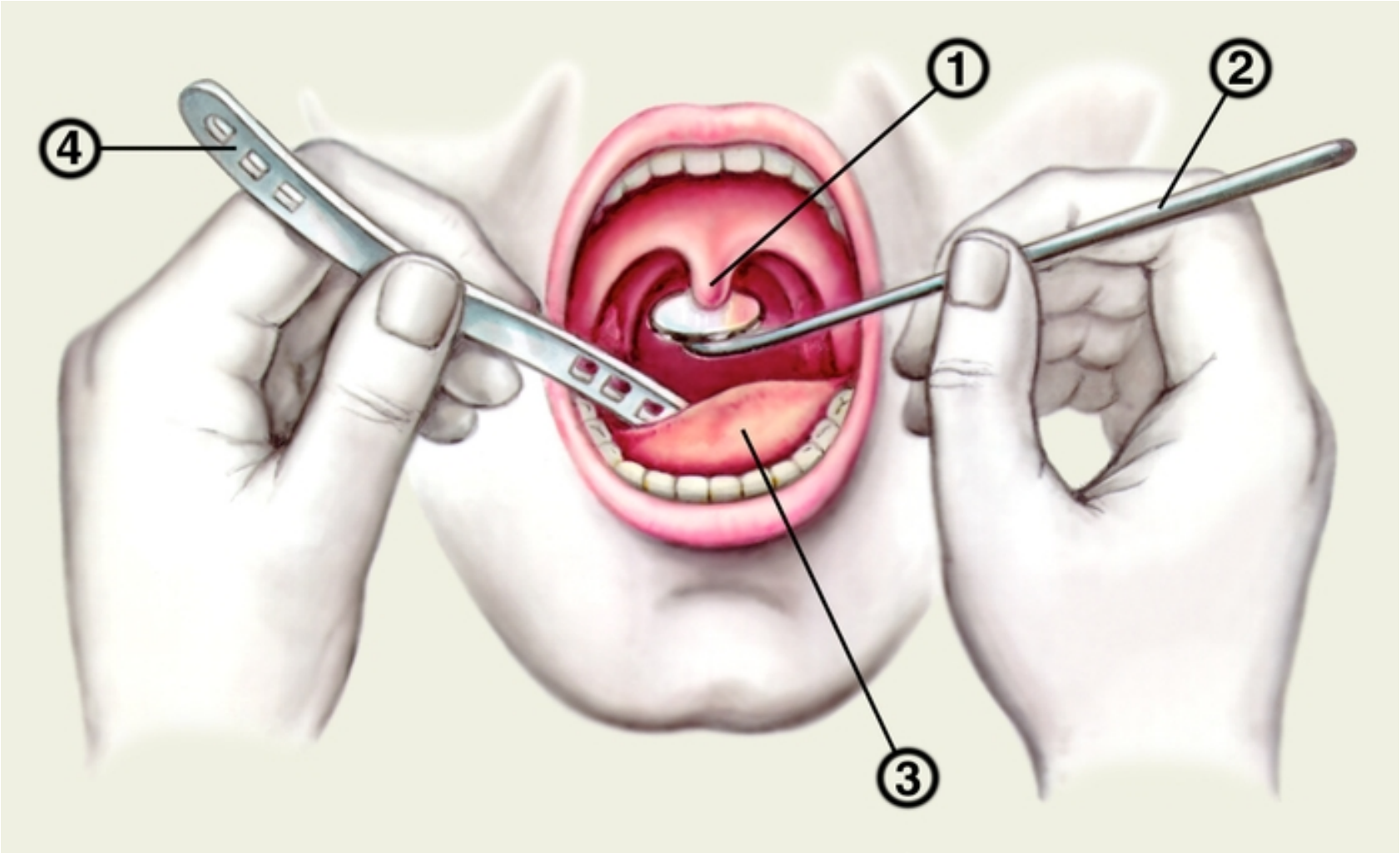
Anatomy.

The nasopharynx is an upper part of the pharynx

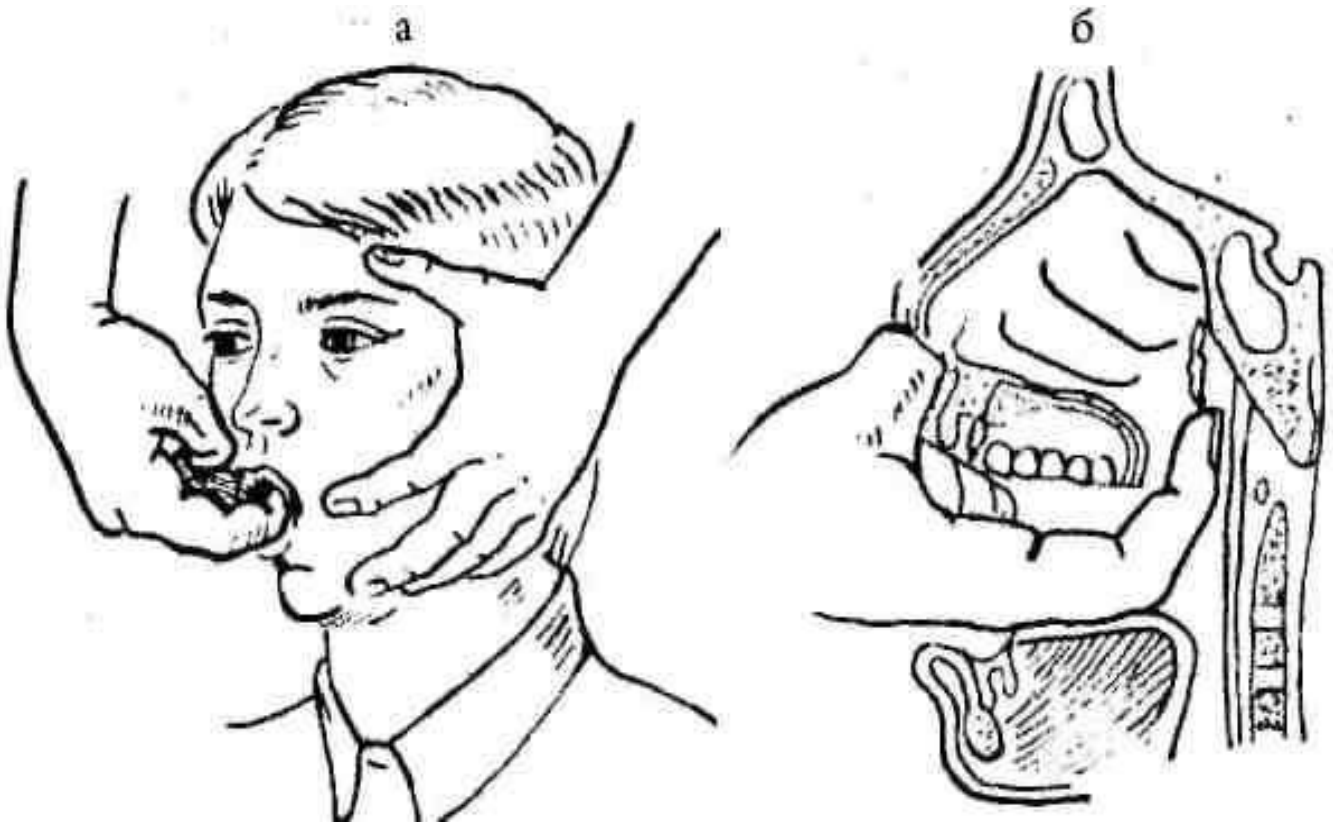




Examination of nasopharynx - historical information (1). Pharyngorrhinoscopy.



Examination of nasopharynx - historical information (2). Finger study of nasopharynx



Examination of nasopharynx - historical information (3, 4).

3. Radiography (X-ray) of the nasopharynx

4.Computed tomography (CT-scan) of the nasopharynx.

Radiography and computed tomography of the nasopharynx are additional methods.

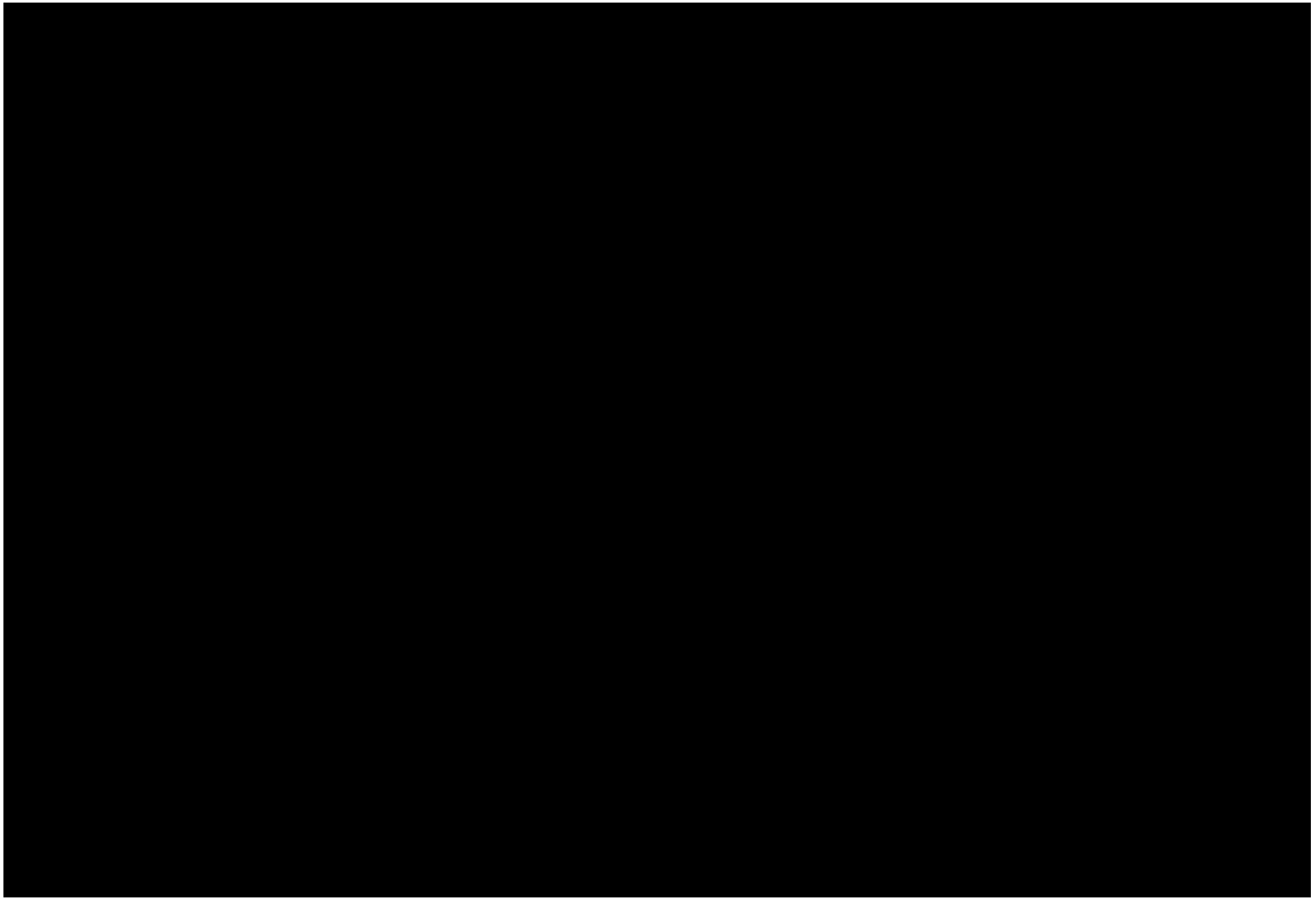
It is desirable that these research methods have to prescribed by a doctor – otolaryngologist.

Examination of nasopharynx - historical information (5). Endoscopic examination of the nasopharynx

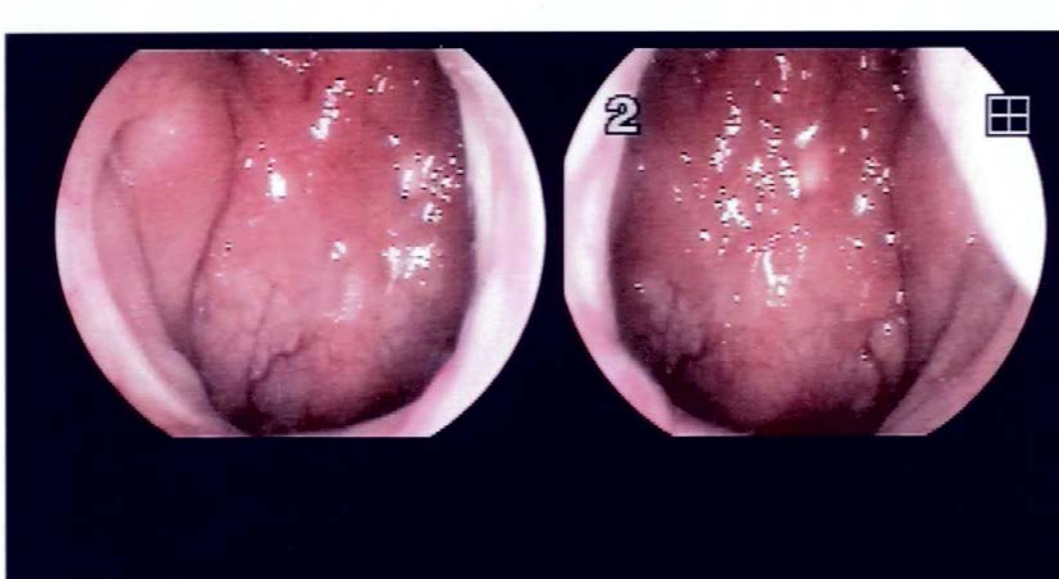
In our hospital we are using MedStar ENT workstations and Karl Storz.

This equipment let us to perform a qualitative endoscopic ENT-examination

Endoscopic examination of nasopharynx



Normal appearance of the nasopharynx during endoscopy

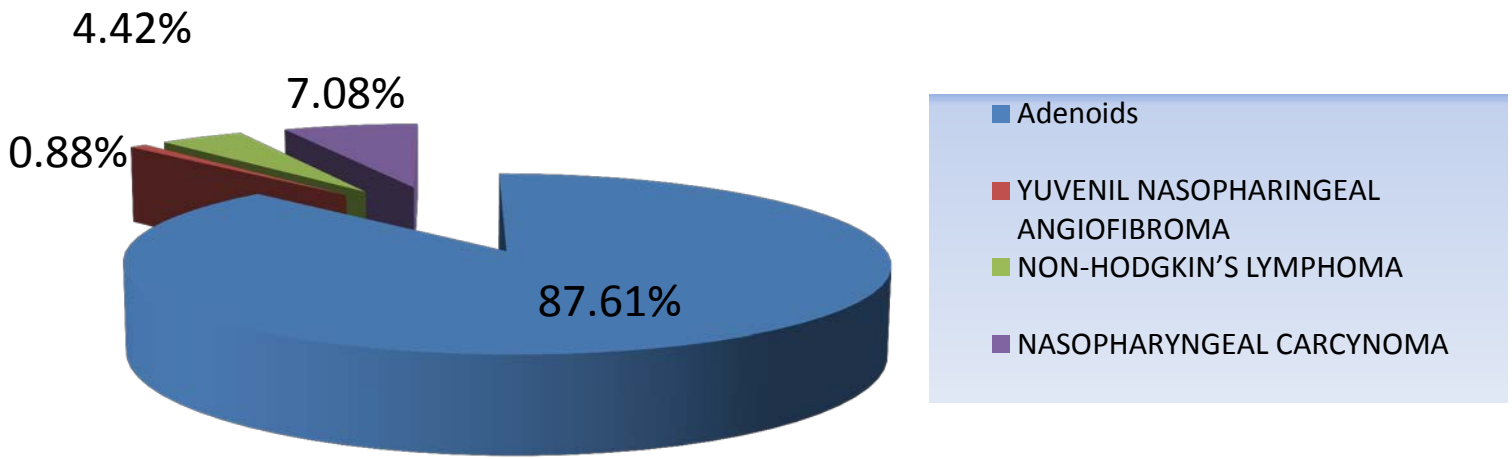


NASOPHARYNGEAL PATHOLOGY from July, 2009 (SSIUH)

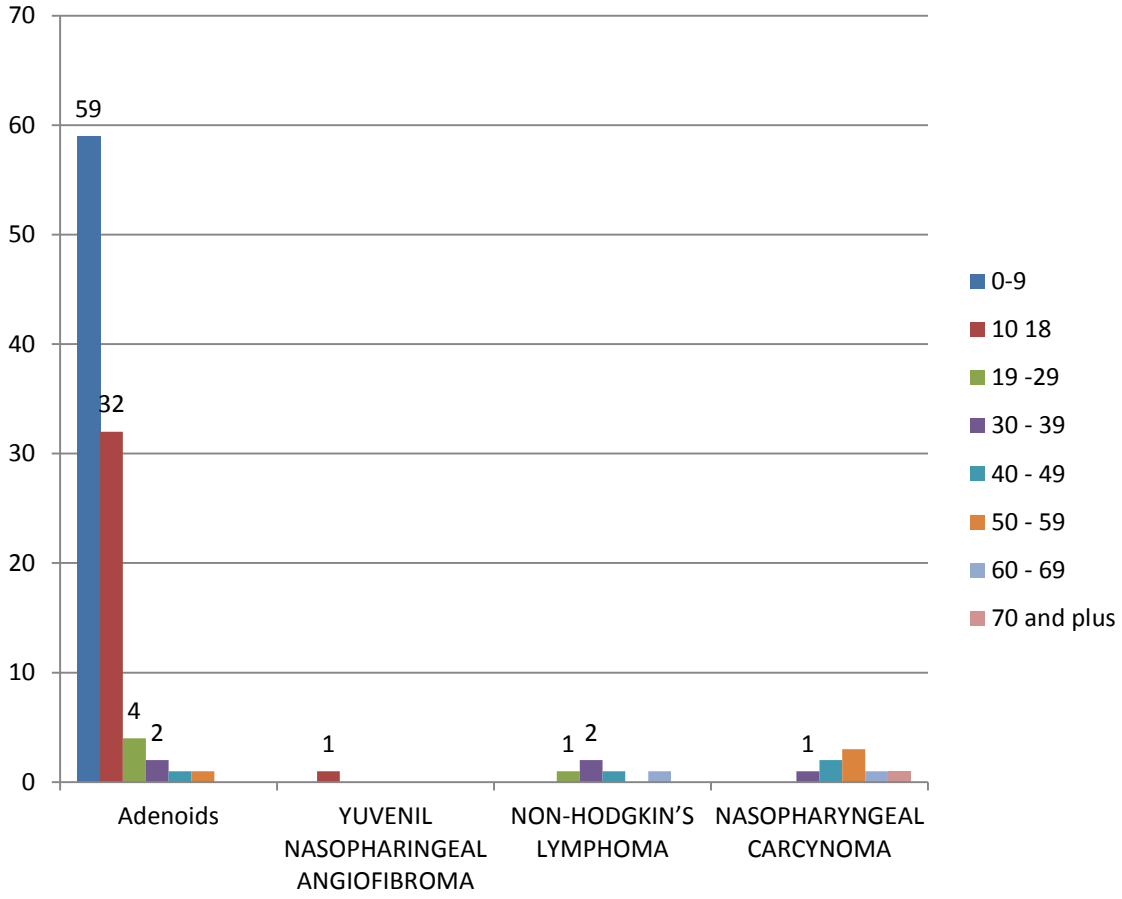
	Age and sex														
	0 - 9		10 - 18		19 - 29		30 -39		40 - 49		50 - 59		60 and plus		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
ADENOIDS	59	35	29	18	5	4									150
YUVENIL NASOPHARINGEAL ANGIOFIBROMA			1												1
NON-HODGKIN'S LYMPHOMA						1		1		1			1		4
NASOPHARYNGEAL CARCYNOMA							3		5	1	2	2	5	2	20
Other Pathology (pharyngeal tonsil hypertrophy, cyst)					2		3		3						8
TOTAL	94		48		12		7		10		4		8		183

NASOPHARYNGEAL PATHOLOGY
from July, 2009, until December, 2013 (SSIUH).

Distribution of patients depending on the type of pathology of nasopharynx



NASOPHARYNGEAL PATHOLOGY from July, 2009 (SSIUH). Distribution of nasopharyngeal pathology depending on the age of patients



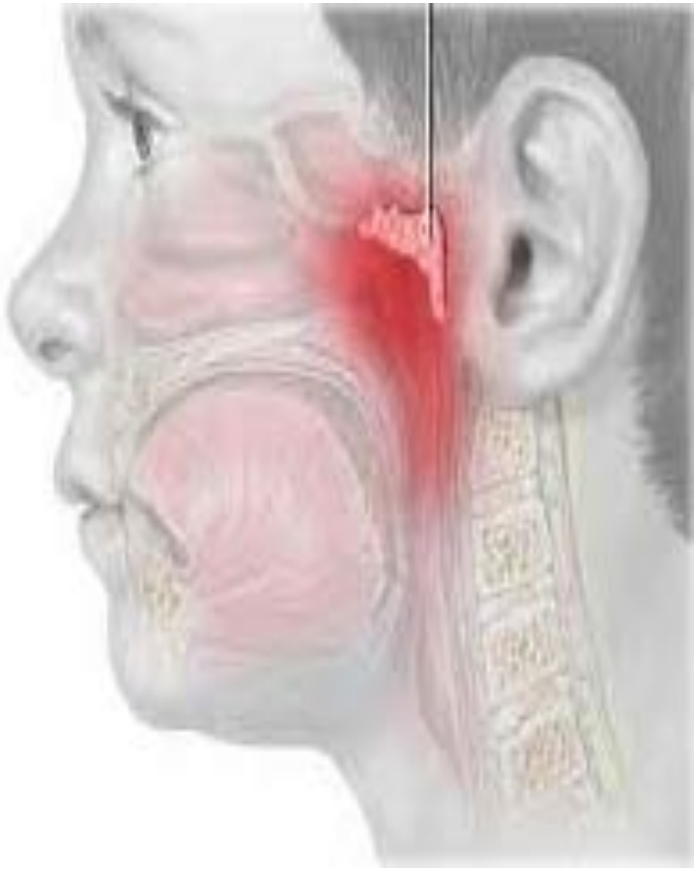
ADENOIDS

Adenoids or hypertrophy of pharyngeal tonsil -

is a mass of lymphatic tissue situated in posterior part of the nasal cavity, in the roof of the nasopharynx.

Normally, in children, it forms a soft mound in the roof and posterior wall of the nasopharynx,

just above and behind the uvula.



Adenoids.

	Age and sex														
	0 - 9		10 - 18		19 - 29		30 -39		40 - 49		50 - 59		60 and plus		Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
	59	35	29	18	5	4									150

Usually adenoids diagnosis is applicable to children

(150 patients)

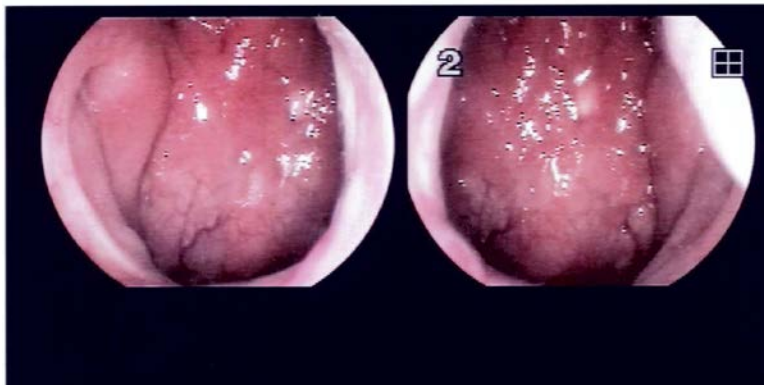
In the presence of pharyngeal tonsill hypertrophy in adults a doctor should always suspect a tumor

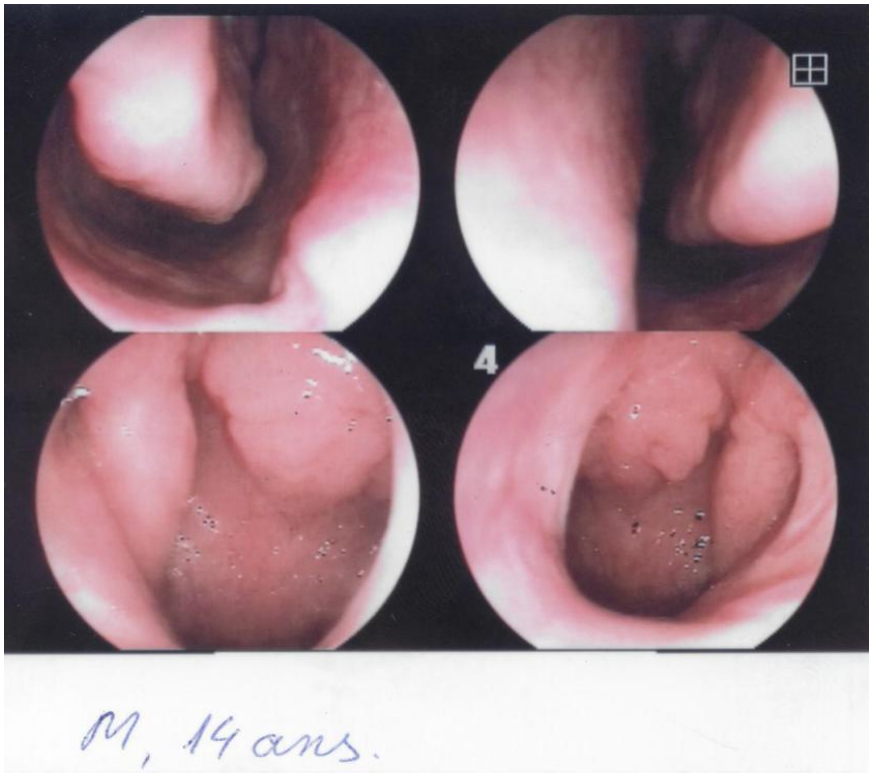
(8 patients)

A grading into four classes of hypertrophied adenoid rhinopharyngeal obstructions in children on the basis of fiberendoscopic findings

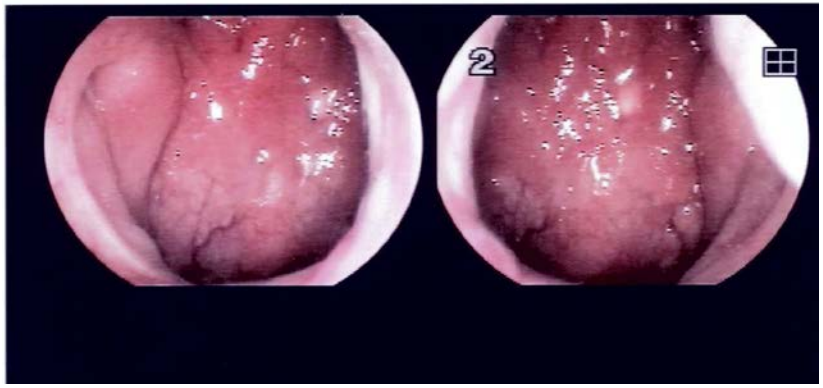
Grade	I	II	III	IV
Number of patients	35	56	38	21

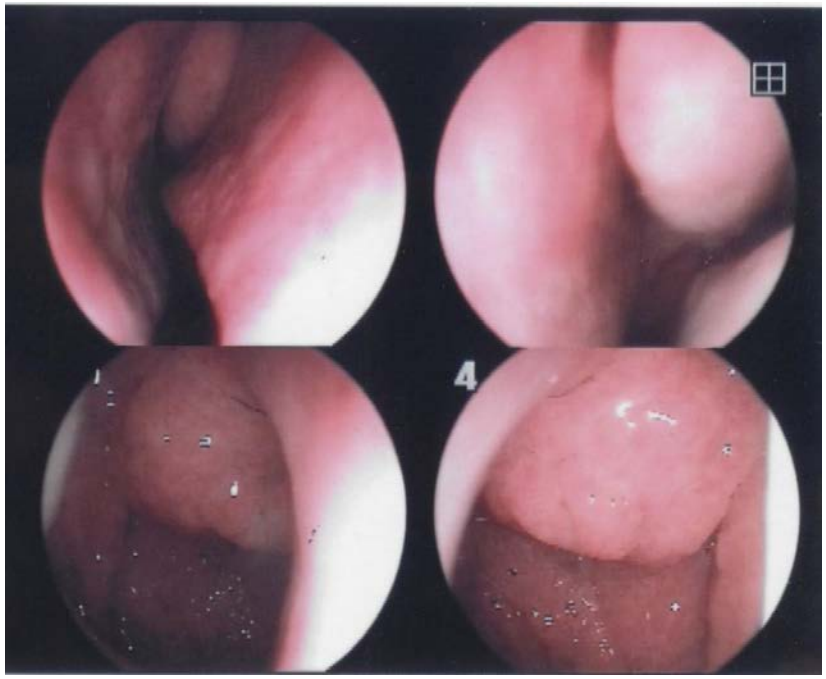
ADENOIDS, grade I



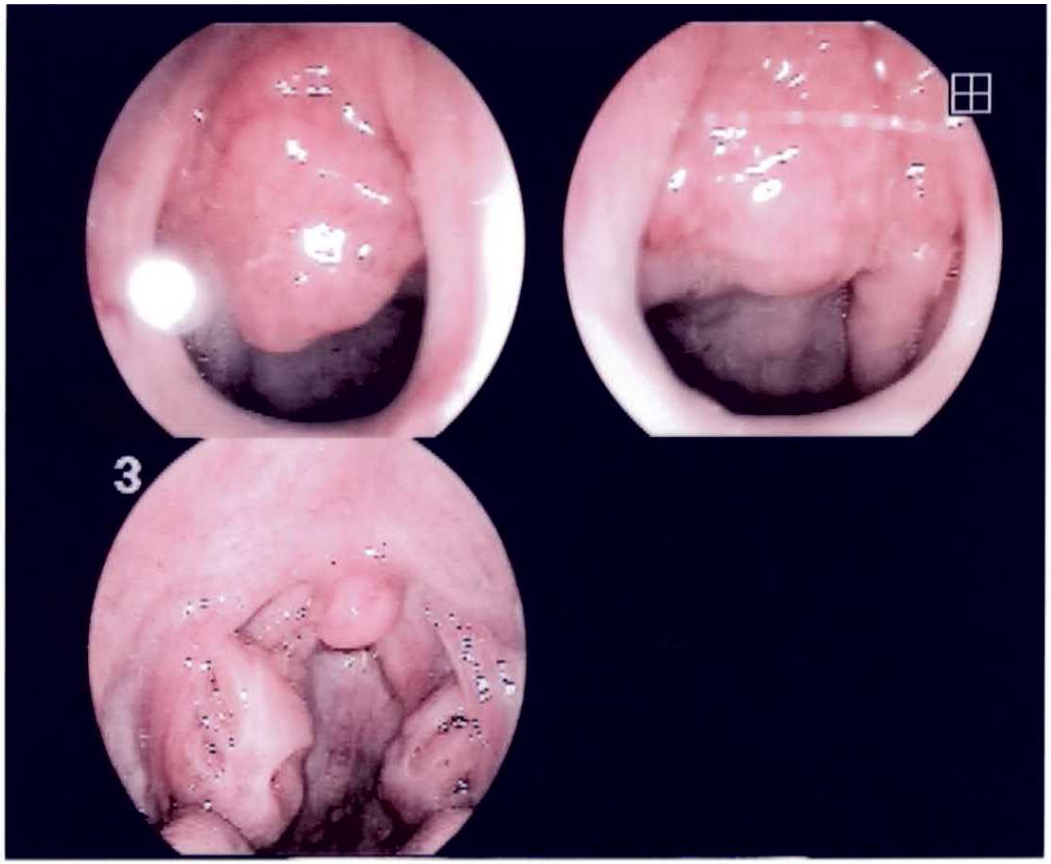


ADENOIDS, grade II

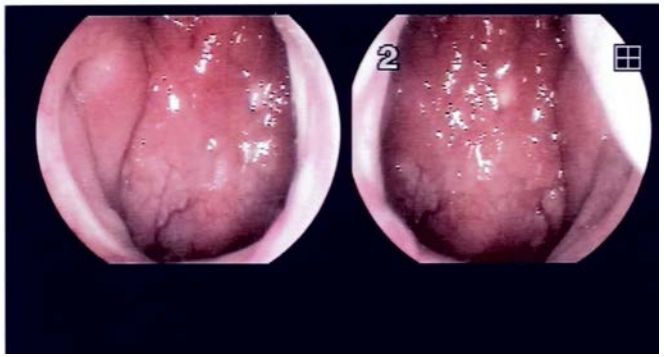


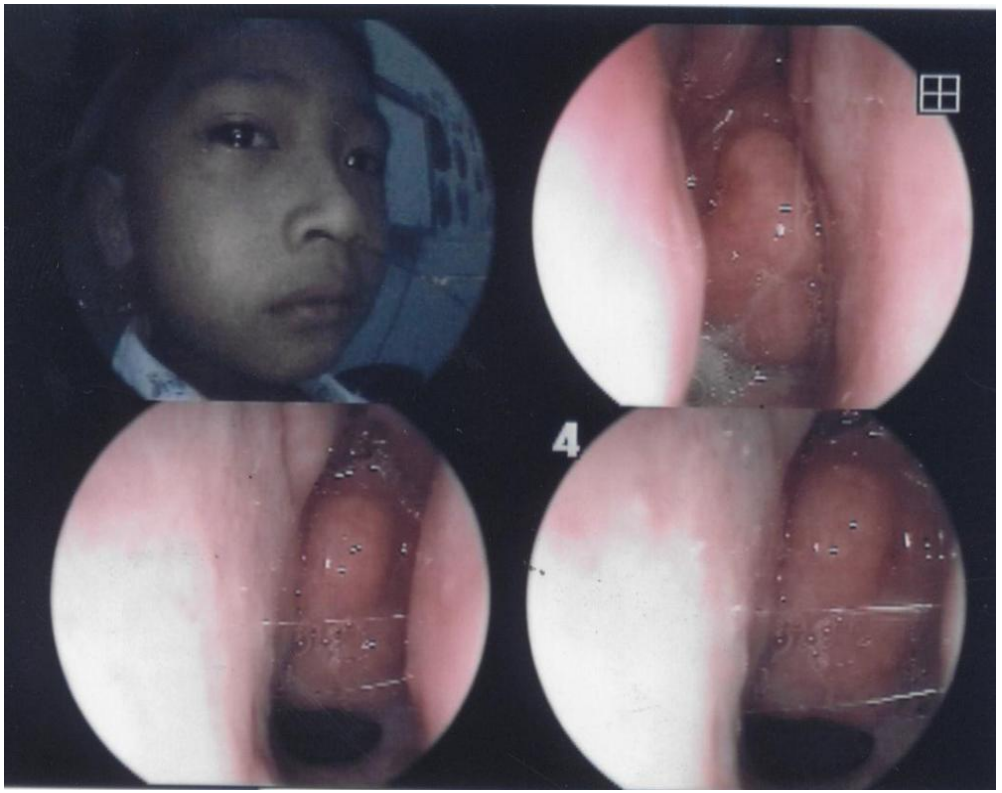


ADENOIDS, grade III, Tonsillitis

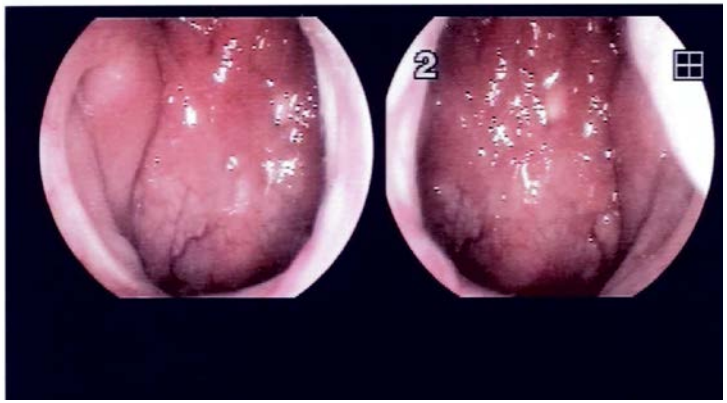


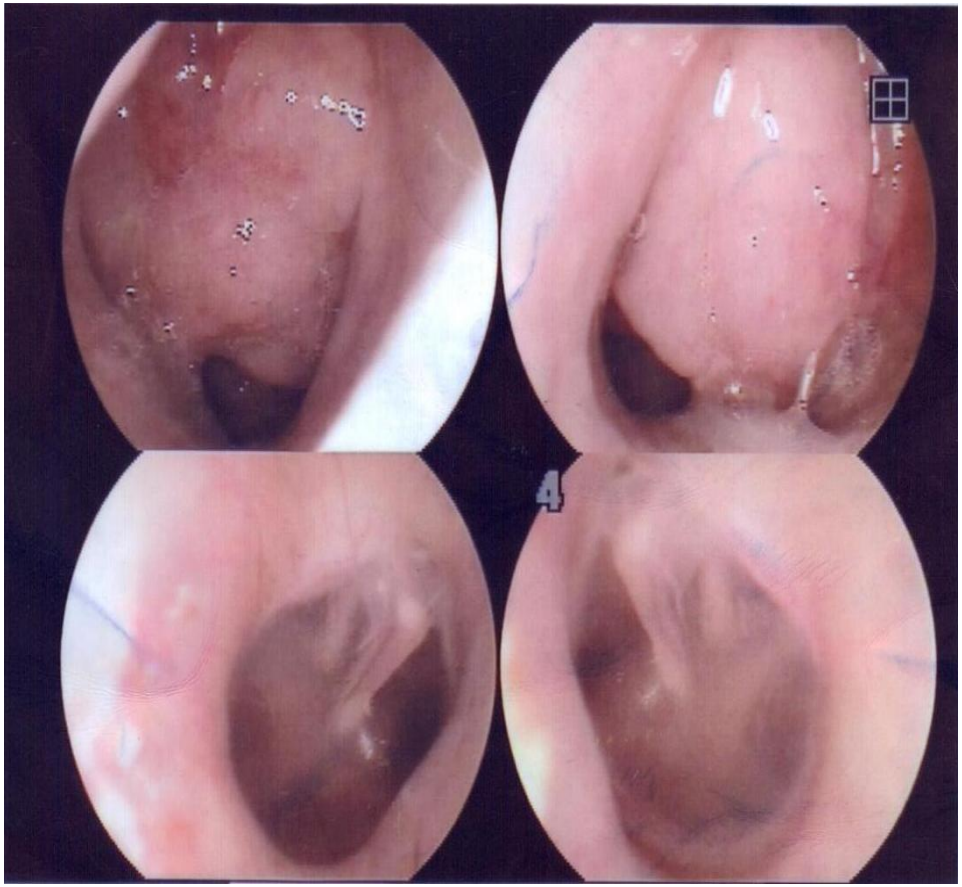
ADENOIDS, grade IV



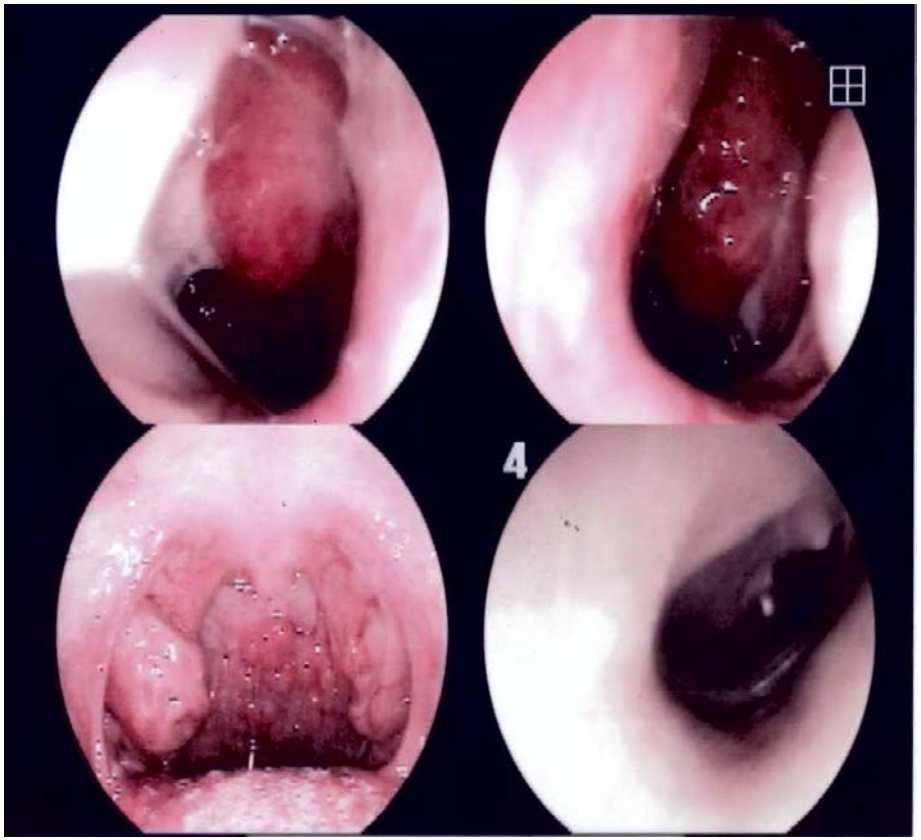


ADENOIDS, grade IV

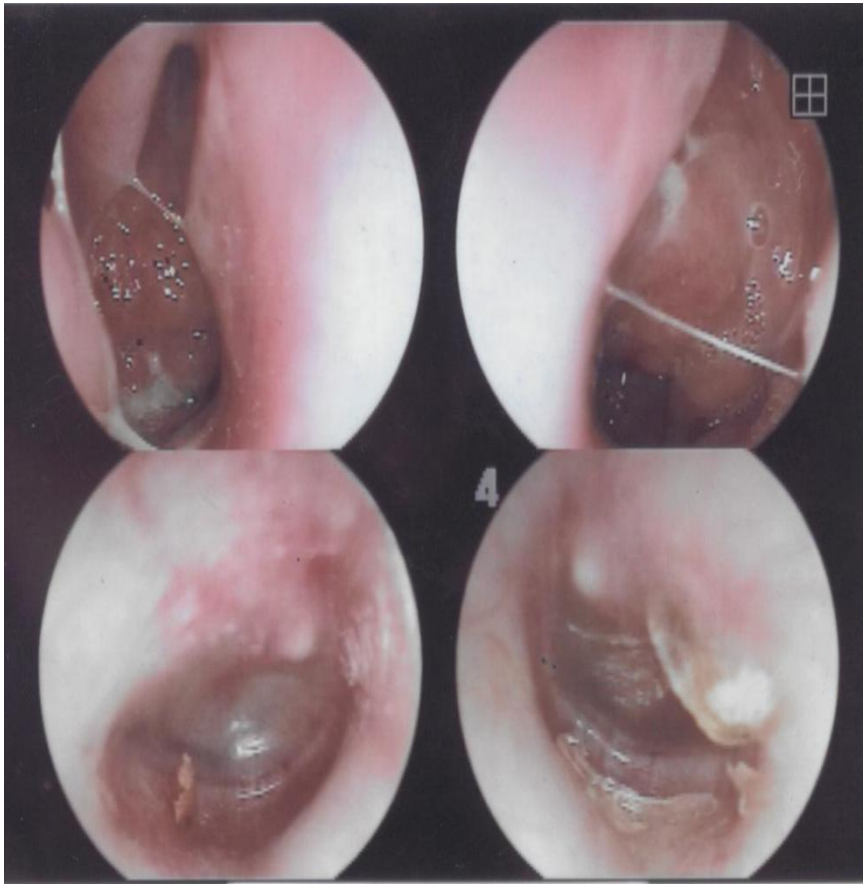




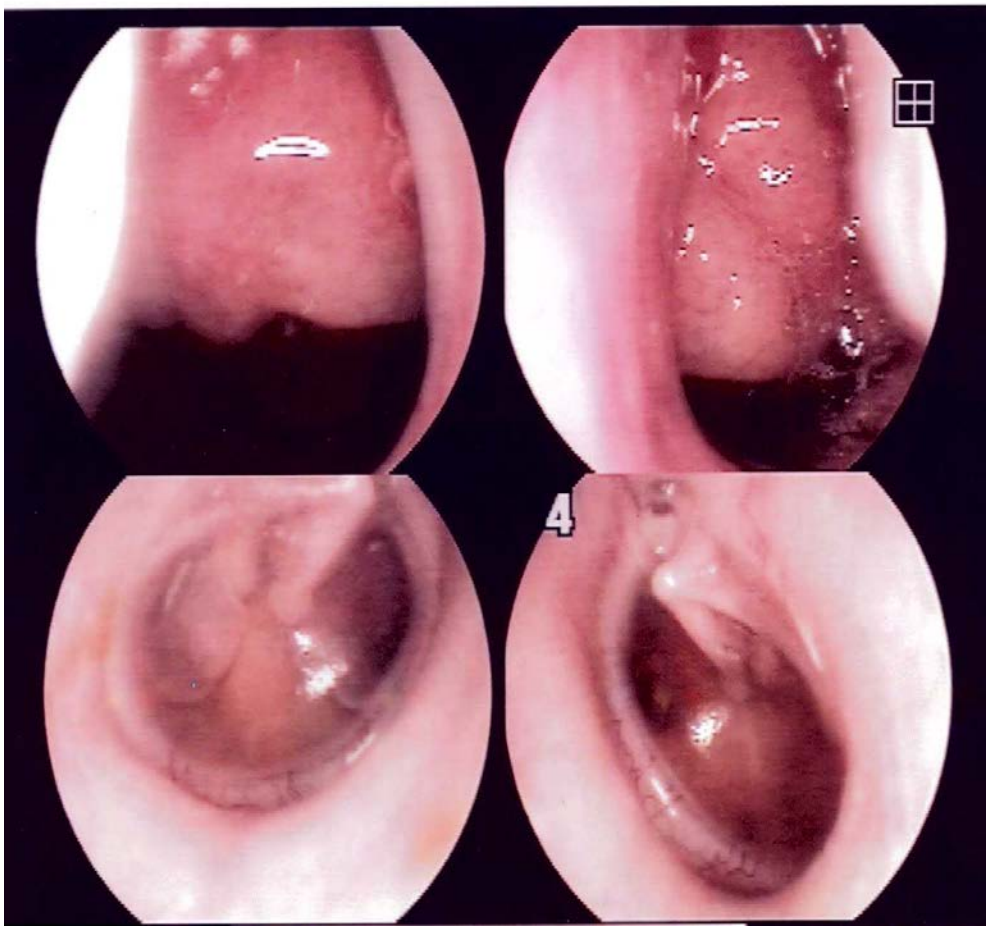
ADENOIDS, grade III, Tonsillitis,Pharyngitis



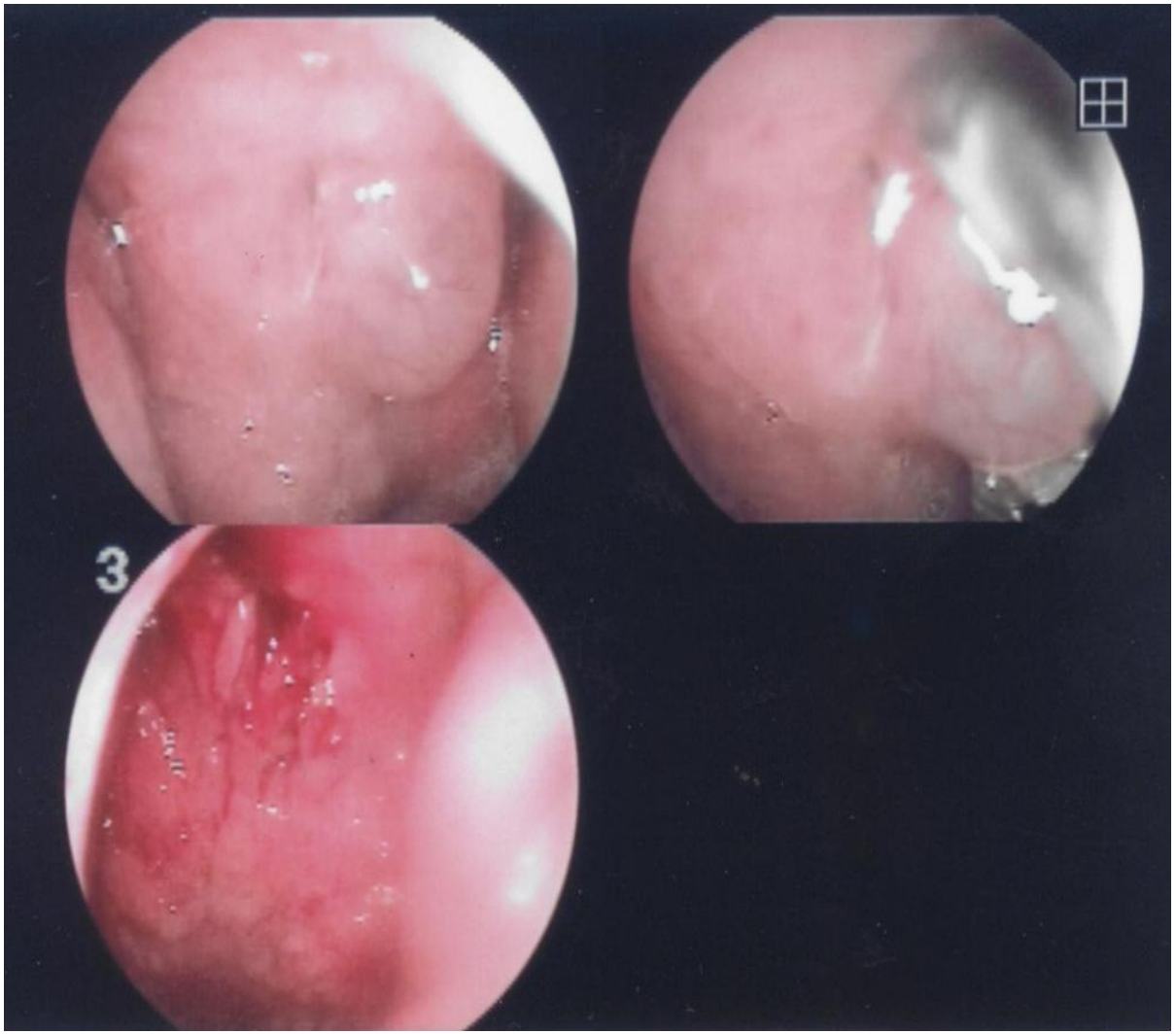
ADENOIDS, grade IV, Obstruction of Eustachian tube



ADENOIDS, grade III (J35.2),
CHRONIC SEROUS OTITIS MEDIA (tubotympanal catarrh) H65.20



Local hypertrophy of pharyngeal tonsile



The main symptoms of adenoids

1. Nasal obstruction
2. Frequent colds
3. Breathing through the mouth
4. Snoring during sleeping

Complications of adenoids

"Adenoid *face*"

(pictures are taken from the internet**)**

Adenoid face

Adenoid face or a long face syndrome, which comprises the following features:

Narrow upper jaw;

High arch of the hard palate;

Snoring, a whistle, or sleep apnea;

Blockade of the Eustachian tube;

Some hearing loss;

Protruding upper teeth;

Curved and crowded upper teeth;

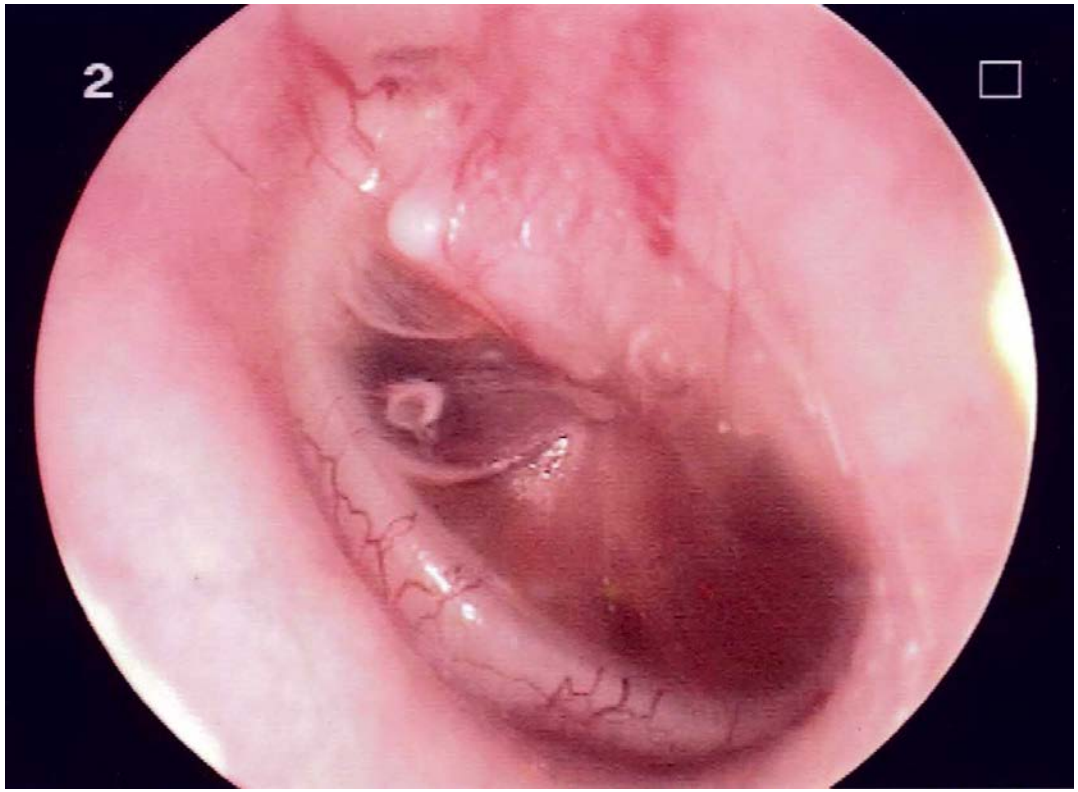
Constantly open mouth;

Missing expression;

Complications of adenoids

Obstruction of Eustachian tube and as result –

CHRONIC SEROUS OTITIS MEDIA

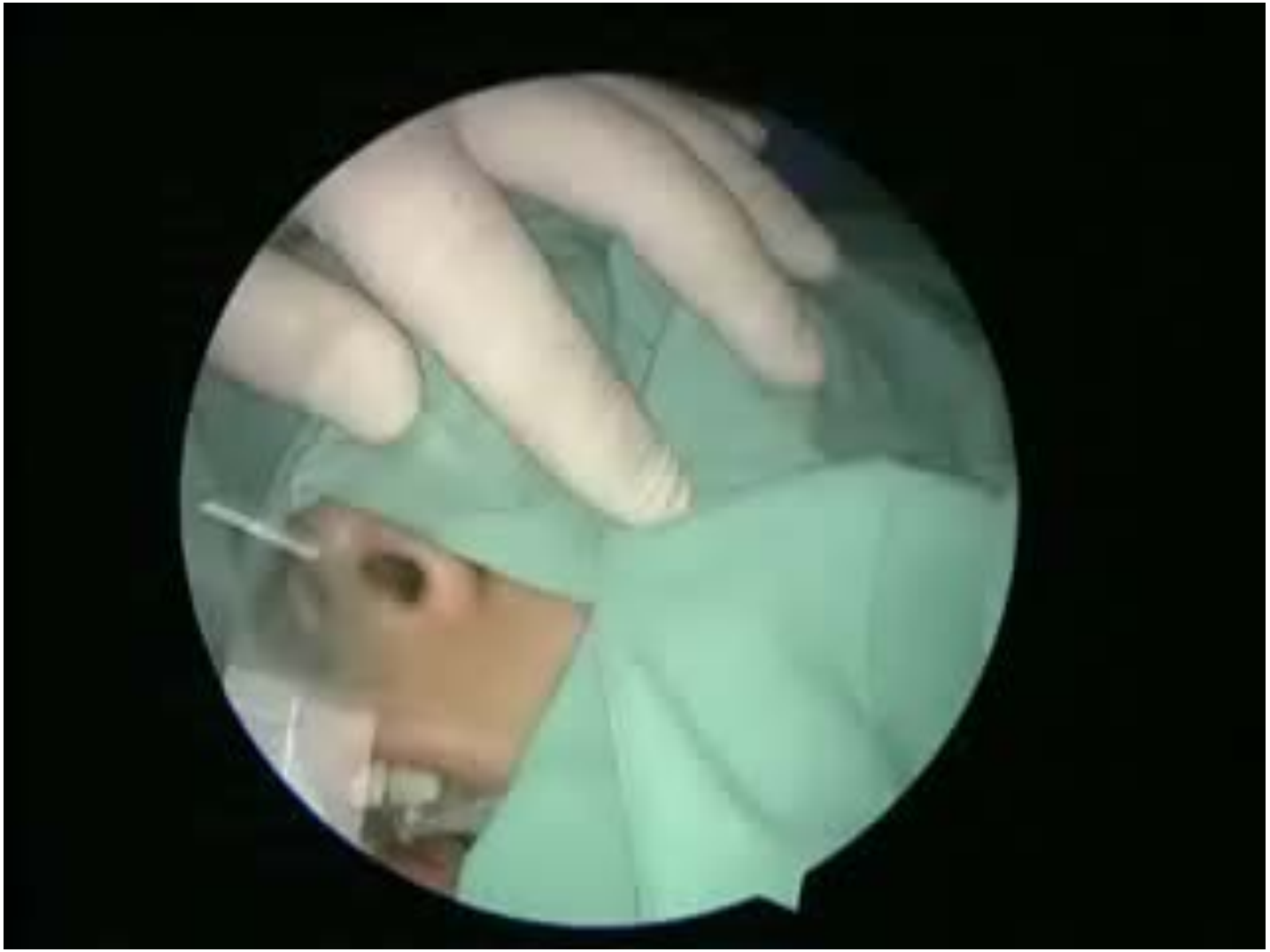


Indication for adenotomy

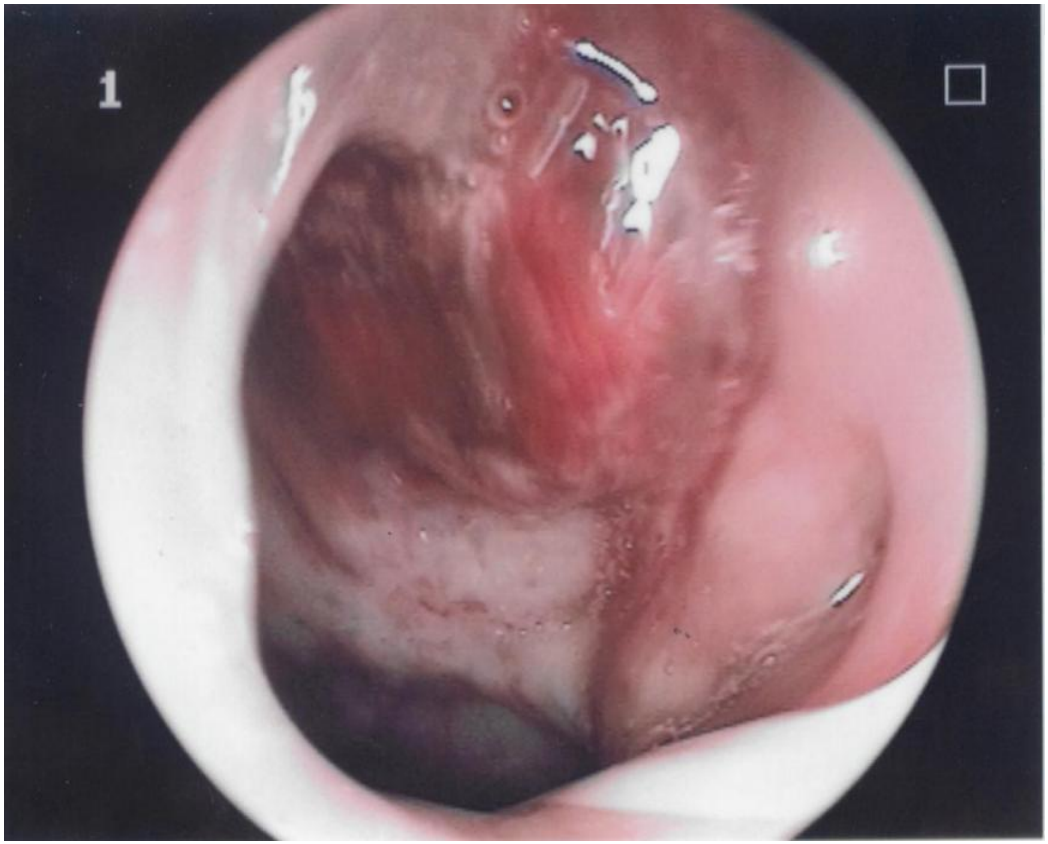
- The presence of hypertrophy of pharyngeal tonsil grade III or IV.
- Non-effective conservative therapy.
- The presence of complication of adenoids

SURGERY (Video)

SHAVER ADENOTOMY (44 CASES)



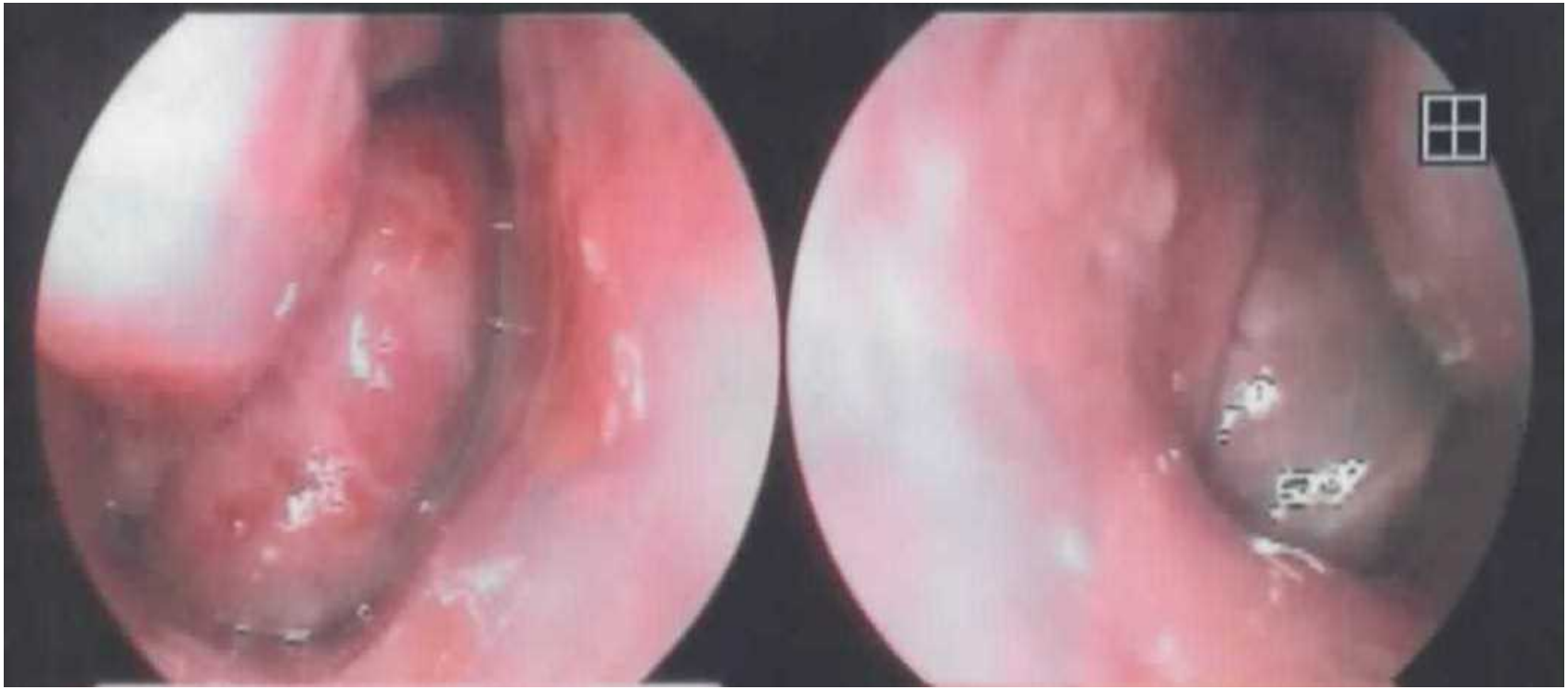
Result after adenotomy (the 7th day)



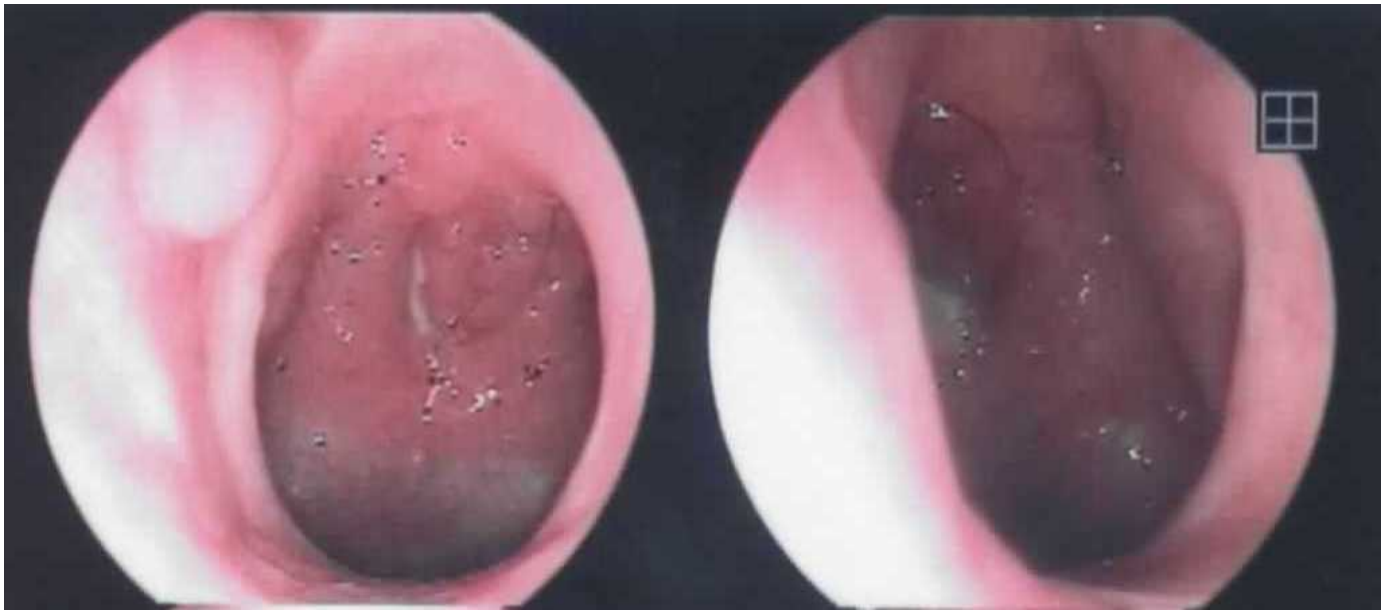
YUVENIL NASOPHARINGEAL ANGIOFIBROMA (or Juvenile angiofibroma of the base of skull)

- We observed only one patient with this disease
- Should be noted that this is a very rare type of pathology. According to some authors: one patient in 12,000 ENT inpatient are diagnosed
- It is a benign tumor, but on clinical findings it can be called malignant (bone destruction, spread to the sinuses and the cranial cavity)
- One of the main signs of JUVENILE NASOPHARYNGEAL ANGIOFIBROMA is recurrent epistaxis on the background of nasal breathing difficulties
- In the case of suspected nasopharyngeal angiofibroma it is appropriate to perform finger examination of the nasopharynx

Juvenile angiofibroma (endoscopy)



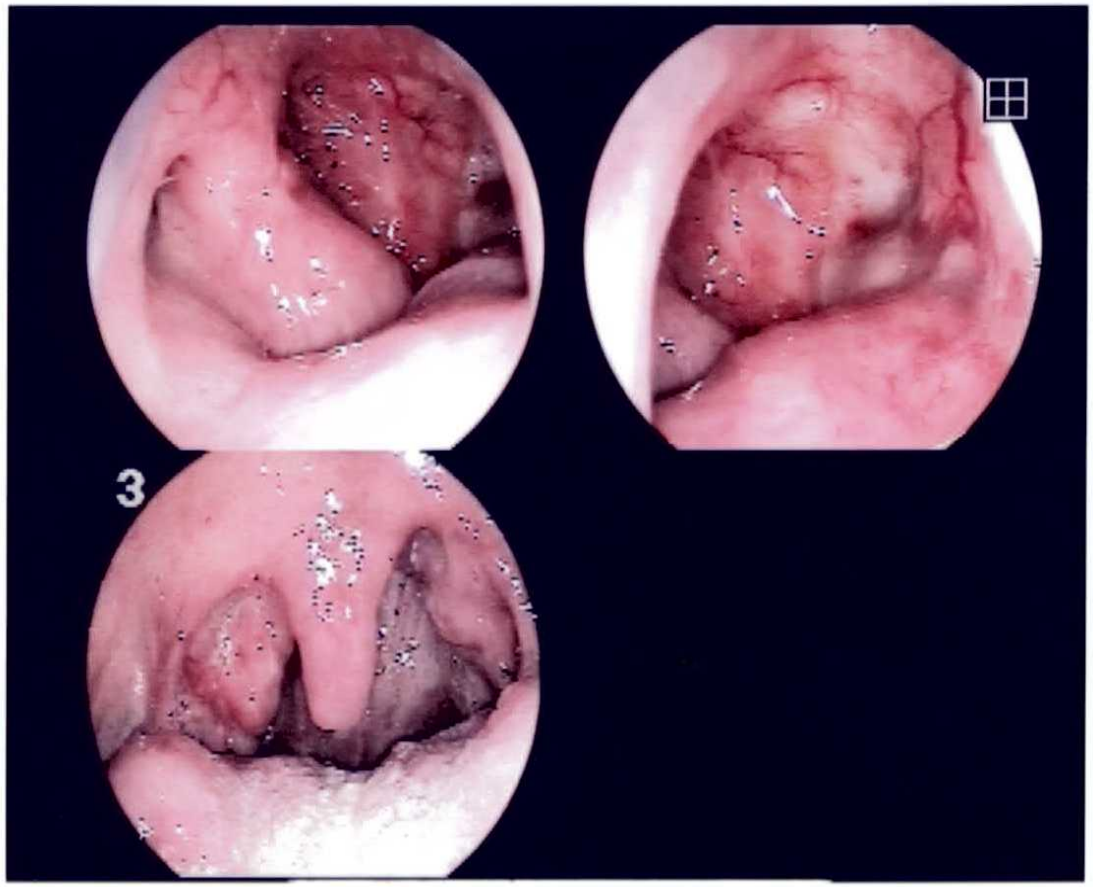
Result after surgery (the 10 day)



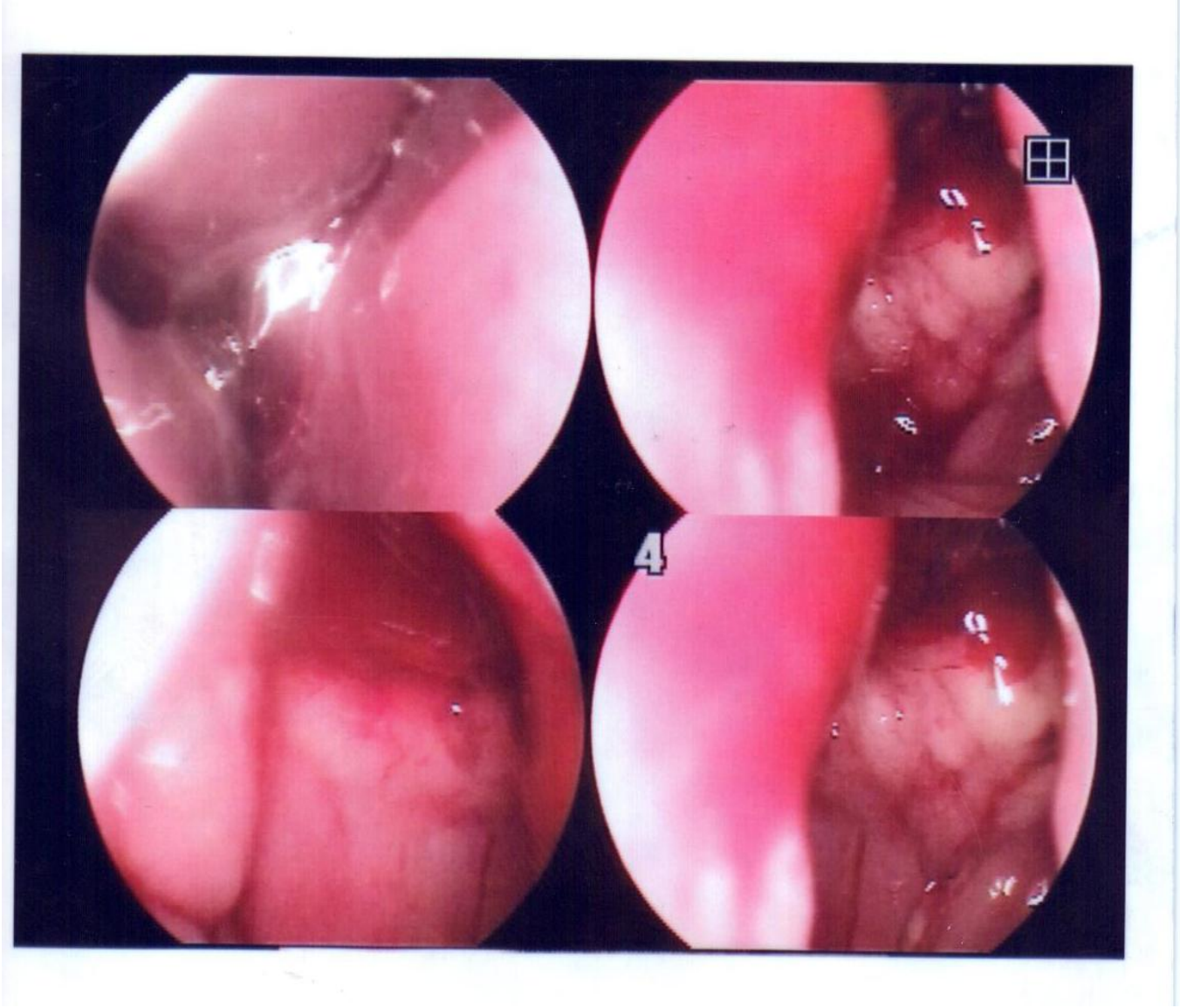
Malignant tumors of the nasopharynx

	Age and sex																
	0 - 9		10 - 18		19 - 29		30 -39		40 - 49		50 - 59		60 - 69		70 and plus		TOTAL
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
NON-HODGKIN'S LYMPHOMA						1	1	1		1			1				5
NASOPHARYNGEAL CARCYNOMA							1		2		1	2		1		1	8
TOTAL					1		3		3		3		2		1		13

NON-HODGKIN'S LYMPHOMA



Nasopharyngeal carcinoma



Conclusions

- adenoids is one of the most common disease of the upper respiratory tract in children.
- nasal endoscopy is the primary method for the diagnosis and for evaluation of treatment strategy.
- in adults detection of signs of nasopharyngeal mass is an indication for urgent biopsy

Intracranial Haemorrhage Due to Late-Onset Vitamin K Deficiency in Newborn (2 CLINICALS REPORTS)

Asst. Prof. LORN TRY Patrich
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Chief of Pediatric Department, Deputy Director,
Kg.Cham Provincial Hospital
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Abstract

Objective: Drive attention to the late form of the hemorrhagic disease of the newborn, secondary to vitamin K deficiency, as a cause of intracranial hemorrhage in young infants.

Methods: the authors describe and analyze two cases of late hemorrhagic disease of the newborn, secondary to vitamin K deficiency, producing intracranially hemorrhage during the 25 days and 45 days of age.

Clinical Report: This infant had received prophylaxis with vitamin K at birth and delivery at Kampong-Cham Hospital. He were being fed exclusively on breast milk. They developed intracranial hemorrhage, and the clotting defect was rapidly corrected with intra-veinous vitamin K and blood transfusion.

Conclusion: late hemorrhagic disease of the newborn must be considered in young infants, between 2 and 12 weeks of age, with intracranial haemorrhage. It may produce neurodevelopmental delay. The prophylaxis is recommended with 1 mg of intramuscular vitamin K to all newborns at birth and supplementation for exclusively breastfed neonates should be considered to prevent the late form of VKDB.

Keywords: vitamin K, intracranial hemorrhage, hemorrhagic disease of the newborn, vitamin K deficiency,PT, aPTT.

Intracranial haemorrhage Due to Late-Onset Vitamin K Deficiency in Newborn (2 CLINICALS REPORTS)

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LORN TRY Patrich,General Pediatrician
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Assist.Prof.of Pedatric,UHS,IU
Kg.Cham Provincial Hospital

CURICULUM VITAL

LORN TRY Patrick,MD

Assist.Prof of Pediatric

Present:- Chief of Pediatric department , Deputy Director,Kampong-Cham Provincial Hospital

Lecturer SHU,IU

Education and training

- Doctor of Medicine, Cambodian UHS (1986-1992)
- Residency training in Pediatric,UHS (DES de Pediatrie,1997-2000),Cambodia
- Fellowship in General Pediatric(AFSA en Pediatrie) at Tours Medicine faculty ,French (2002-2003)
- Diploma of Hospital Management at NIPH,Cambodia (2006-2007)
- ALAF,Australian Leadership Award Fellowship funded by Ausaid (7-22.November.2011)in Sydney, at children's hospital at Westmead and Sydney University,Australia
- Diploma in Child Health(DCH) /IPPC,the university of SYDNEY 2013,Australia
- Training on case Management of DF/DHF organized by collaborating Centre for case management of Dengue/DHF/DSS 1-12 july, Queen sirikit Institute of child Health (Children's Hospital) Department of medical Services Ministry of Public Health, Thailand
- ***Perinatal and neonatal Health care*** training 1 month,2015 at MCH Medical center, OSAKA,Japan
- International training course in severe dengue November 7-8 2016 Queen sirikit convention Center(Meeting room 1) , Bangkok , Thailand

Employment position

- 1993-2006 Physician at Pediatric Department , Kampong- Cham Provincial Hospital
- Chief of Pediatric Department ,deputy director ,Kampong-Cham Provincial Hospital 2007- to present
- Lecturer of Pediatric at International University (2006-present)
- Lecturer of Pediatric at SHU (2010 – Present)
- Council member Cambodian Pediatric Association (2nd ,3nd ,4nd ,5nd mandate)
- Vice President Medical board Kampong-Cham Provincial (2015-Present)
- Membership National Dengue clinical commity 2008 to present
- Council member of Cambodian Society of Perinatal 2017-2022(first mandate)

Contents

1. Abstracts
2. Introduction
3. Objective
4. Clinical report 1
5. Clinical report 2
6. Discussion
7. Conclusion
8. Recommendation
9. References

Abstracts

OBJECTIVEdrive attention to the late form of the hemorrhagic disease of the newborn, secondary to vitamin K deficiency, as a cause of intracranial hemorrhage in young infants.

- **Methods:** the authors describe and analyze two cases of late hemorrhagic disease of the newborn, secondary to vitamin K deficiency, producing intracranially hemorrhage during the 25 days and 45 days of age.
- ***Clinical Report :*** This infant had received prophylaxis with vitamin K at birth and delivery at Kampong-Cham Hospital. He were being fed exclusively on breast milk. They developed intracranial hemorrhage, and the clotting defect was rapidly corrected with intra-veinous vitamin K and blood transfusion.
- ***Conclusion*** late hemorrhagic disease of the newborn must be considered in young infants, between 2 and 12 weeks of age, with intracranial haemorrhage. It may produce neurodevelopmental delay. The prophylaxis is recommended with 1 mg of intramuscular vitamin K to all newborns at birth and supplementation for exclusively breastfed neonates should be considered to prevent the late form of VKDB.

Key words. vitamin K, intracranial hemorrhage, hemorrhagic disease of the newborn, vitamin K deficiency,PT,aPTT

INTRODUCTION

- Hemorrhagic disease of the newborn or, more precisely,vitamin K deficiency bleeding (VKDB) in infancy,according to the Committee of the International Society on Thrombosis and Hemostasis (1), is a bleeding disorder due to vitamin K deficiency.
- Vitamin K is a fat-soluble vitamin that is necessary for the synthesis of factors II, VII, IX, and X by the liver.
- Vitamin K deficiency bleeding (VKDB) has three distinct patterns of presentation. Early VKDB occurs within 24 hours of birth in infants whose mothers have been on anticonvulsant or warfarin during pregnancy. Classic VKDB occurs between 2nd-7th days of life with most of the cases being idiopathic. Late VKDB is characterised by bleeding in infants between 8th day to 3 th months of life due to severe vitamin K deficiency.

INTRODUCTION

- Late VKDB a peak incidence between the 2rd and 12th weeks of life. It is associated with intracranial haemorrhage (ICH), which is the cause of severe consequence and death.It can occur in more than 50% of cases.
- Despite being the best nutrient for infants, breast milk plays a significant role in the newborn classical and late-onset VKDB. Vitamin

K administration at newborn decreases the incidence of VKDB in the first week of life.

Objective

- Drive attention to the late form of the hemorrhagic disease of the newborn, secondary to vitamin K deficiency, as a cause of intracranial hemorrhage in young infants.
- Describe and analysis two cases of late hemorrhagic disease of the newborn, secondary to vitamin K deficiency, producing intracranially hemorrhage during 25 days and 45 days of age.

Clinical Report 1

- A 25 days old, female newborn was admitted at NCU of pediatric department in Kampong-Cham Provincial Hospital on 28.06.2017 with palor and no feeding.

Maternal History

- **Prenatal History :**
  - Prenatal consultation : 8 time, Tetanus vaccine 2 injection
  - First infant
  - Other no problem
- **Perinatal History**
  - Last menstruation 01.09.16 ; Gestational age = 39W3days
  - PT(Second) =12.4 seconds Ref.range 12-16
  - PT (INR) = 1.05 Ref.range 1-1.25
  - aPTT = 29.8 seconds Ref.range 24-36
  - Blood Group = O Rh(D): Positive
  - WBC = $17.6x10^9/l$
  - Platelets = $264 \times 10^9/l$

.

Clinical report1

- Weigh= 51 kg,BP=130/80,Pulse=80/mn, Tempe=37^0c,RR=20/mn
- Fetal cardiac rhythm=144/mn
- Cephalic Presentation
- Clear amniotic fluid
- Birth weight= 2800 g,D’ apgar score: 8-10-10
- Vaccination at birth : BCG, Hepatitis B
- Vit k1 1mg at birth

Clinical Report1

- The baby did not have any problems during pregnancy,Delivery , and receive vitamin K prophylaxis at birth. He was fed exclusively with breast milk.
- On examination: Weight= 2700g,HC= 36 cm, we observed cutaneous-mucosal pallor,vomiting hypoactivity, discrete jaundice, tense anterior fontanelle.Moro reflex incomplete, sucion small,Oxygen saturation 88% room air

Lab result

WBC= $17.1X10^9/l$ Platelet= $418x10^9/l$

Ht=12.4%

Hb=4.1g/dl

PT,aPTT prolonge

CRP positive 48

Clinical Report1

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

មន្ទីរពិសោធន៍មន្ទីរពេទ្យខេត្តកំពង់ចាម

លទ្ធផលមន្ទីរពិសោធន៍

លេខអ្នកជម្ងឺ : KCM-4540
ឈ្មោះ : ម៉ាន ហាហ្ស្រាណាស់
ភេទ : ស្រី
អាស័យដ្ឋាន : អំពិល-ប៊ីស១-ក្រូចឆ្មារ-ត្បូងឃ្មុំ

ប្រភពសំណាក : Ped
លេខទូរសព្ទ :
អាយុ : 0ឆ្នាំ 0ខែ 25ថ្ងៃ
រោគវិនិច្ឆ័យ :

HEAMATOLOGY	Sample Number	Requested by	Received Date	Test Date
lood-EDTA	0036-28062017	វេជ្ជ.ឯកទេស ងួន វឌ្ឍនៈ	28-Jun-2017 10:10	28-Jun-2017

Test Name	Result		Units	Ref.Range
OMPLET BLOOD COUNT				
WBC	17.1		$x10^9/L$	6 - 22
RBC	1.19		$x10^{12}/L$	3 - 5.4
Hemoglobin	4.1		g/dL	16.1 - 16.9
Hematocrit	12.4		%	31 - 71
MCV	104		fl	86 - 124
MCH	34		pg	31 - 40
MCHC	33		g/dL	28 - 38
Platelets	418		$x10^9/L$	170 - 500
RDW-CV	15		%	11.5 - 14
Differential White Cell Count				
Neutrophils (%)	50%	8.55	$x10^9/L$	2 - 7
Lymphocytes (%)	44%	7.52	$x10^9/L$	1 - 3
Monocytes (%)	06%	1.03	$x10^9/L$	0.2 - 1
Eosinophils (%)	00%	0.00	$x10^9/L$	0.02 - 0.5
Basophils (%)	00%	0.00	$x10^9/L$	0.02 - 0.1

Comment : - PT, APTT : Prolonge

SEROLOGY	Sample Number	Requested by	Received Date	Test Date
Blood-Clotted	0036-28062017	វេជ្ជ.ឯកទេស ងួន វឌ្ឍនៈ	28-Jun-2017 10:10	28-Jun-2017

Test Name	Result	Units	Ref.Range
CRP	Positive 48		

Last Date Test : 28-Jun-2017
ប្រធានមន្ទីរពិសោធន៍

ត្រួតពិនិត្យដោយ

Report Date : 28-Jun-2017 16:42
បុគ្គលិកមន្ទីរពិសោធន៍

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

មន្ទីរពិសោធន៍មន្ទីរពេទ្យខេត្តកំពង់ចាម

លទ្ធផលមន្ទីរពិសោធន៍

លេខអ្នកជម្ងឺ : KCM-4540	ប្រភពសំណាក : Ped
ឈ្មោះ : ម៉ាន ហាហ្ប្រាណាស់	លេខទូរសព្ទ :
ភេទ : ស្រី	អាយុ : 0ឆ្នាំ 1ខែ 1ថ្ងៃ
អាសយដ្ឋាន : វីឌីអូ-ប៊ីស១-ក្រូចឆ្មារ-ត្បូងឃ្មុំ	ពេទ្យវិនិច្ឆ័យ :

MICROBIOLOGY	Sample Number	Requested by	Received Date	Test Date
Blood Culture	0036-28062017	វេជ្ជ.ឯកទេស ជួន វឌ្ឍនៈ	28-Jun-2017 10:10	29-Jun-2017

Test Name	Result	Units	Ref.Range
Gram Stain	Gram positive cocci		
Culture	Coagulase Negative Staphylococcus		

Comment :
- Result phoned to clinician Dr. Vatanak inform blood culture positive as gram positive cocci in 1 bottle on 13:20 at 01/07/2017, by Munineath.
- Growth in 1 of 1 bottle at 5days.
- Most Coag negative Staph isolated from blood culture are contaminant skin flora. Occasionally it may be a significant pathogen in patients with prostheses or cannulas. Consider removal of IV cannulas
- FINAL REPORT

Note : S = Sensitive, R = Resistant, I = Intermediate

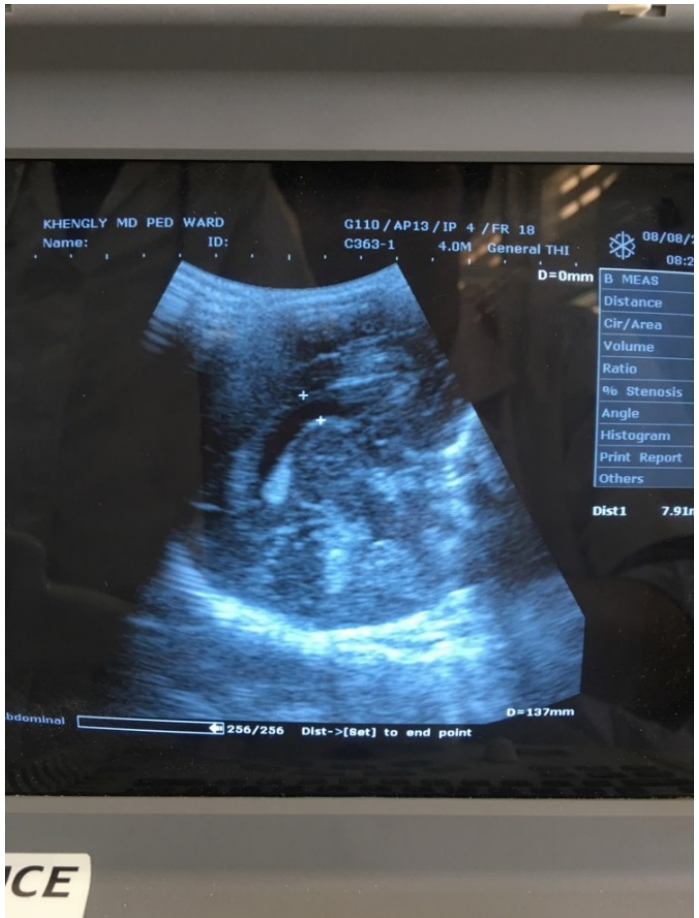
Last Date Test : 29-Jun-2017

Report Date : 03-Jul-2017 11:19

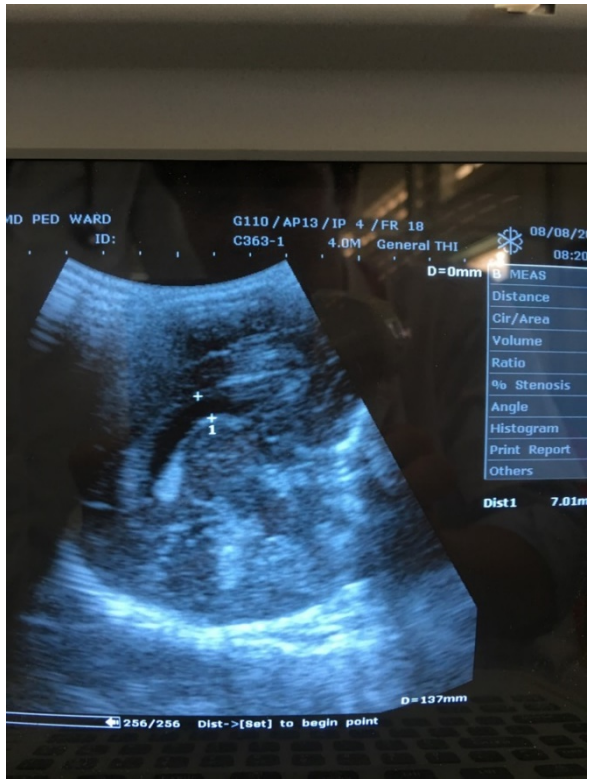
ប្រធានមន្ទីរពិសោធន៍ ត្រួតពិនិត្យដោយ បុគ្គលិកមន្ទីរពិសោធន៍

Clinical Report1

ETF



ETF



Clinical Report1

- The patient received erythrocyte concentrate, and a 10 mg-dose of vitamin K IV. After 24 hours of admission, PT and APTT were

stabilized. Ht were 45%

APTT =29

PT(second) =12.7

INR = 1.08

- Clinically speaking, the evolution was fast and favorable,

and he was discharged at the 5th day of hospitalization.

- The cephalic perimeter control, as well as the control through ultrasonography

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

មន្ទីរពិសោធន៍មន្ទីរពេទ្យខេត្តកំពង់ចាម

លទ្ធផលមន្ទីរពិសោធន៍

លេខអ្នកជម្ងឺ : KCM-4710
ឈ្មោះ : ម៉ាន ហាសុរ្យាណាស់
ភេទ : ស្រី
អាស័យដ្ឋាន : អំពិល-ប៊ីស២-ក្រូចឆ្មារ-ត្បូងឃ្មុំ

ប្រភពសំណាក : Ped
លេខទូរសព្ទ :
អាយុ : 0ឆ្នាំ 0ខែ 26ថ្ងៃ
រោគវិនិច្ឆ័យ :

HEAMATOLOGY	Sample Number	Requested by	Received Date	Test Date
Blood-Sodium-Citrate	0013-29062017	វេជ្ជបណ្ឌិត គីម គឹមស្រ៊ិន	29-Jun-2017 09:48	29-Jun-2017

Test Name	Result	Units	Ref.Range
HEMOSTASIS			
aPTT	29	seconds	24 - 36
PT (Sec)	12.7	seconds	12 - 16
PT (INR)	1.08	INR	1 - 1.25

Clinical report2

A 45 days male infant from Sangkate Smbour Meas, Kampong-cham city ,was admitted on 16 April 2018 to Pediatric ward of kampong-Cham Provincial Hospital convulsion and palor.

Present History : With 4 days history of fever, vomiting, poor feeding and diarrhea 3 – 4 time/day and than convulsion.

Perinatal history

- Delivery at private clinic, term baby birth weight 3500g , vaginal delivery
- Unknow vitk prevention at birth
- The infant was exclusively breastfed
- The baby did not have any problems during the neonatal period,
- Family history was unremarkable for hemorrhagic diathesis, and the

mother was not taking any medications.

Clinical report2

At the time of admission a generalized tonic clonic seizure and irritable occurred.

- Urgent haematocrit was 10%. He was treated with a packed erythrocyte

transfusion (10 mL/kg) and diazepam 0.1 ml/kg intra-rectal.

After stable clinical Exam

Tem=37^0c, Weight=3500kg,RR= 50/mn,HC=35.5 cm, Heigh= 52 cm

- No feeding
- Coma Blantyre score = 0
- tense anterior fontanelle.
- Irritable

Laboratory data

WBC= 15500/mm3,RBC= 1140000/mm3,Ht=12%,Hb=3.4g/dl, platelete=847000/mm3,CRP=24 mg/l, TP and APPT not enough of blood

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

មន្ទីរពិសោធន៍មន្ទីរពេទ្យខេត្តកំពង់ចាម
លទ្ធផលមន្ទីរពិសោធន៍

លេខអ្នកជំងឺ : 001-390-747-7
ឈ្មោះ : ប៊ុន ឡេង
លេខទូរស័ព្ទ :
អាស័យដ្ឋាន : ភូមិ នាងគង្គីង - ឃុំ/សង្កាត់ សំបូរមាស - ស្រុក/ខ័ណ្ឌ កំពង់ចាម - ខេត្ត/ក្រុង កំពង់ចាម

ប្រភពសំណាក : Ped
ភេទ : ប្រុស អាយុ : 0 ឆ្នាំ 1 ខែ 0 ថ្ងៃ
គោតវិនិច្ឆ័យ :

HEAMATOLOGY	លេខសំណាក	អ្នកស្នើរសុំ	ថ្ងៃប្រមូលសំណាក	ថ្ងៃទទួលសំណាក
Blood-EDTA	0047-16042018	វេជ្ជបណ្ឌិត ផែ ចន្ធសុខាមុនី	16-Apr-2018 16:40	16-Apr-2018 19:15

ឈ្មោះតេស្ត	លទ្ធផល		ខ្នាត	តំលៃយោង
COMPLETE BLOOD COUNT				
WBC	15.5		$x10^9/L$	5 - 19
RBC	**1.14**		$x10^{12}/L$	5 - 7
Hemoglobin	**3.4**		g/dL	11.5 - 16.5
Hematocrit	**12.0**		%	33 - 53
MCV	105		fl	92 - 116
MCH	30		pg	30 - 36
MCHC	**28**		g/dL	29 - 37
Platelets	**1007**		$x10^9/L$	200 - 500
RDW-CV	**20.6**		%	11.5 - 14
Differential White Cell Count				
Neutrophils (%)	**38%**	**7.14**	$x10^9/L$	2 - 7
Lymphocytes (%)	**57%**	**10.72**	$x10^9/L$	1 - 3
Monocytes (%)	05%	0.94	$x10^9/L$	0.2 - 1
Eosinophils (%)	**00%**	**0.00**	$x10^9/L$	0.02 - 0.5
Basophils (%)	**00%**	**0.00**	$x10^9/L$	0.02 - 0.1
Nucleated RBCs/100 WBC	21		100 WBC	

SEROLOGY	លេខសំណាក	អ្នកស្នើរសុំ	ថ្ងៃប្រមូលសំណាក	ថ្ងៃទទួលសំណាក
Blood-Clotted	0047-16042018	វេជ្ជបណ្ឌិត ផែ ចន្ធសុខាមុនី	16-Apr-2018 16:40	16-Apr-2018 19:15

ឈ្មោះតេស្ត	លទ្ធផល	ខ្នាត	តំលៃយោង
CRP	**Reaction Positive 24 mg/L (N: < 6 mg/L)**		

ថ្ងៃពិសោធន៍ចុងក្រោយ : 16-Apr-2018
ត្រួតពិនិត្យដោយ
Heng Chanussal

ថ្ងៃចេញលទ្ធផលដំបូង : 16-Apr-2018 22:05
បុគ្គលិកមន្ទីរពិសោធន៍

អាស័យដ្ឋាន: ភូមិទី ៧ សង្កាត់ កំពង់ចាម ក្រុង កំពង់ចាម ខេត្តកំពង់ចាម

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

មន្ទីរពិសោធន៍មន្ទីរពេទ្យខេត្តកំពង់ចាម
លទ្ធផលមន្ទីរពិសោធន៍

លេខអ្នកជំងឺ : 001-390-747-7
ឈ្មោះ : ប៊ុន ឡេង
លេខទូរស័ព្ទ :
ប្រភពសំណាក : Ped
ភេទ : ប្រុស អាយុ : 5 ឆ្នាំ 5 ខែ 27 ថ្ងៃ
រោគវិនិច្ឆ័យ :
អាស័យដ្ឋាន : ភូមិ នាងគង្គីង - ឃុំ/សង្កាត់ សំបូរមាស - ស្រុក/ខ័ណ្ឌ កំពង់ចាម - ខេត្ត/ក្រុង កំពង់ចាម

HEAMATOLOGY	លេខសំណាក	អ្នកស្នើរសុំ	ថ្ងៃប្រមូលសំណាក	ថ្ងៃទទួលសំណាក
Blood-EDTA	0016-17042018	វេជ្ជបណ្ឌិត អ៊ីវ ខេងលី	17-Sep-2012 10:00	17-Sep-2012 10:26

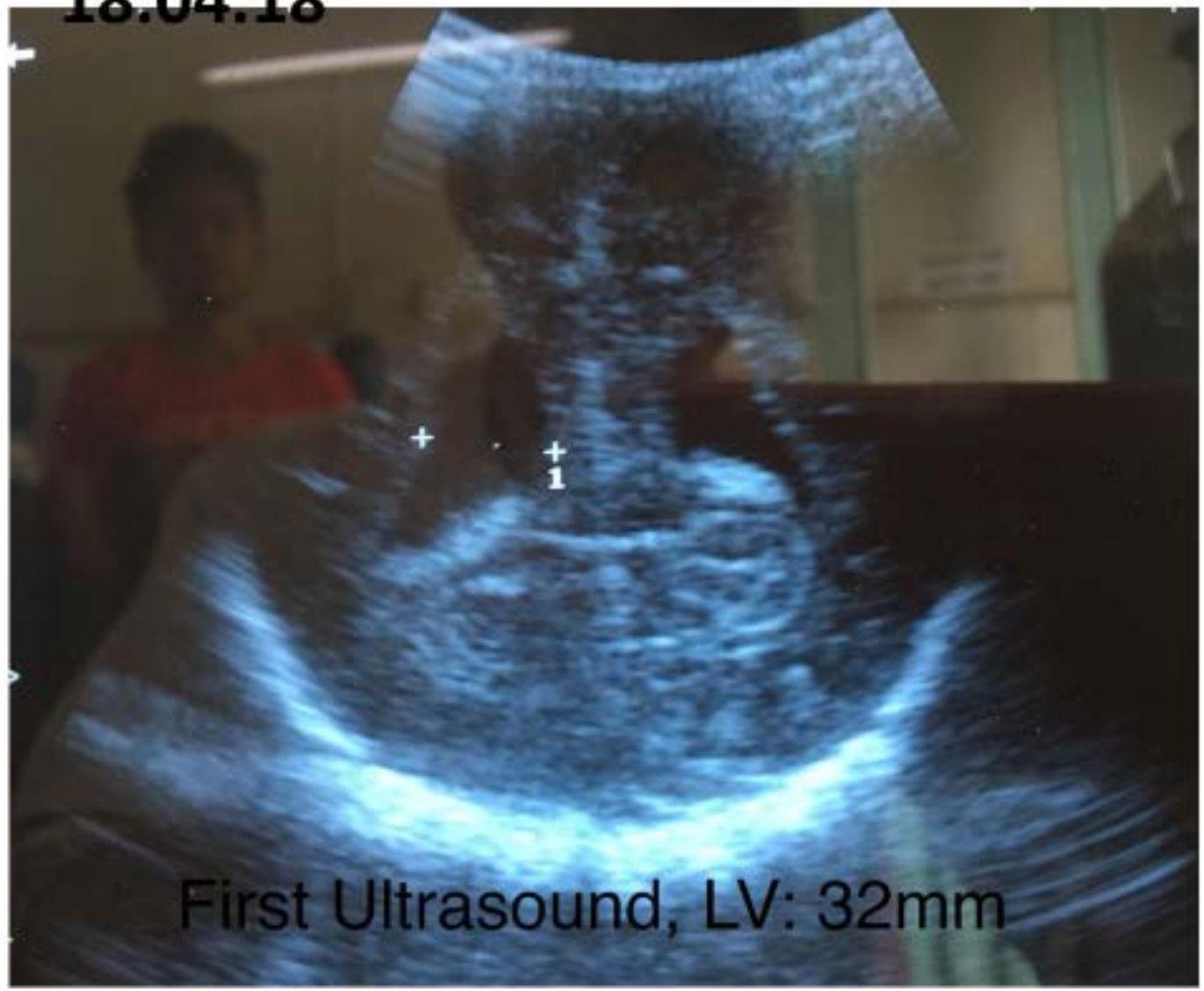
ឈ្មោះតេស្ត	លទ្ធផល		ខ្នាត	តំលៃយោង
OMPLETE BLOOD COUNT				
WBC	11.65		$x10^9/L$	5 - 15
RBC	**2.68**		$x10^{12}/L$	4 - 5.2
Hemoglobin	**8.1**		g/dL	11 - 14
Hematocrit	**25**		%	34 - 40
MCV	**93**		fl	75 - 87
MCH	30		pg	24 - 30
MCHC	32		g/dL	31 - 37
Platelets	**847**		$x10^9/L$	200 - 490
RDW-CV	**15.7**		%	11.5 - 14
Differential White Cell Count				
Neutrophils (%)	**70%**	**8.40**	$x10^9/L$	2 - 7
Lymphocytes (%)	22%	2.64	$x10^9/L$	1 - 3
Monocytes (%)	**00%**	**0.00**	$x10^9/L$	0.2 - 1
Eosinophils (%)	**00%**	**0.00**	$x10^9/L$	0.02 - 0.5
Basophils (%)	**00%**	**0.00**	$x10^9/L$	0.02 - 0.1
elocyte	08		%	
cleated RBCs/100 WBC	03		100 WBC	

mment : Platelet count កើនឡើងត្រូវបានបញ្ជាក់ដោយ Blood smear review.
ព័ត៌មានផ្សេងទៀត៖ Macrocyte 2+, Hypochromasia 1+, polychromasia 2+

ថ្ងៃពិសោធន៍ចុងក្រោយ : 17-Apr-2018
ត្រួតពិនិត្យដោយ

ថ្ងៃចេញលទ្ធផលដំបូង : 17-Apr-2018 11:52
បុគ្គលិកមន្ទីរពិសោធន៍

Case report **cranial ultrason(ETF) on 18.04.18**



Management

- PIV D1/3S 7cc/H
- Vit K1 10 mg *IV*(2 dose/2 days)
- Ceftriaxon 100 mg/kg/D IV
- Ampicillin 150 mg/kg/D 2 IV
- Diazepam 0.1ml/kg Intra-rectal
- Phenobarbital 5mg/kg/2 time/day
- Nasogatric tube : nutrition enteral (expression milk)
- Oxygen

Evolution

- D4 Alert (normal conscience) but not yet breast feeding
- D5.Stop convulsion can breast feeding continuous ceftriaxone Ampicilline and phenobarbital stop oxygen
- D6-D16 (02.05.18) continuous Ceftriaxon + Ampicilline + Phenobarbital
  - Good tone
  - Alert
  - Good breast feeding
  - Good Moro reflex
  - HC=32 cm

Controle Lab and TFE

CRP : Negative

WBC=4800/mm3

RBC=2570000/mm3

Hb=7.7g/dl

Ht=25%

Platelet=503000/mm3

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

មន្ទីរពិសោធន៍មន្ទីរពេទ្យខេត្តកំពង់ចាម
លទ្ធផលមន្ទីរពិសោធន៍

លេខអ្នកជំងឺ : 001-390-747-7 ប្រភពសំណាក : Ped
ឈ្មោះ : ប៊ុន ឡេង ភេទ : ប្រុស អាយុ : 0 ឆ្នាំ 1 ខែ 14 ថ្ងៃ
លេខទូរស័ព្ទ : ពេទ្យនិយ័យ :
អាស័យដ្ឋាន : ភូមិ នាងគង្គីង - ឃុំ/សង្កាត់ សំបួរមាស - ស្រុក/ខ័ណ្ឌ កំពង់ចាម - ខេត្ត/ក្រុង កំពង់ចាម

HEAMATOLOGY	លេខសំណាក	អ្នកស្នើរសុំ	ថ្ងៃប្រមូលសំណាក	ថ្ងៃទទួលសំណាក
Blood-Sodium-Citrate	0053-30042018	វេជ្ជបណ្ឌិត ឃាង ច័ន្ទបុទ្ធា	30-Apr-2018 14:40	30-Apr-2018 14:41

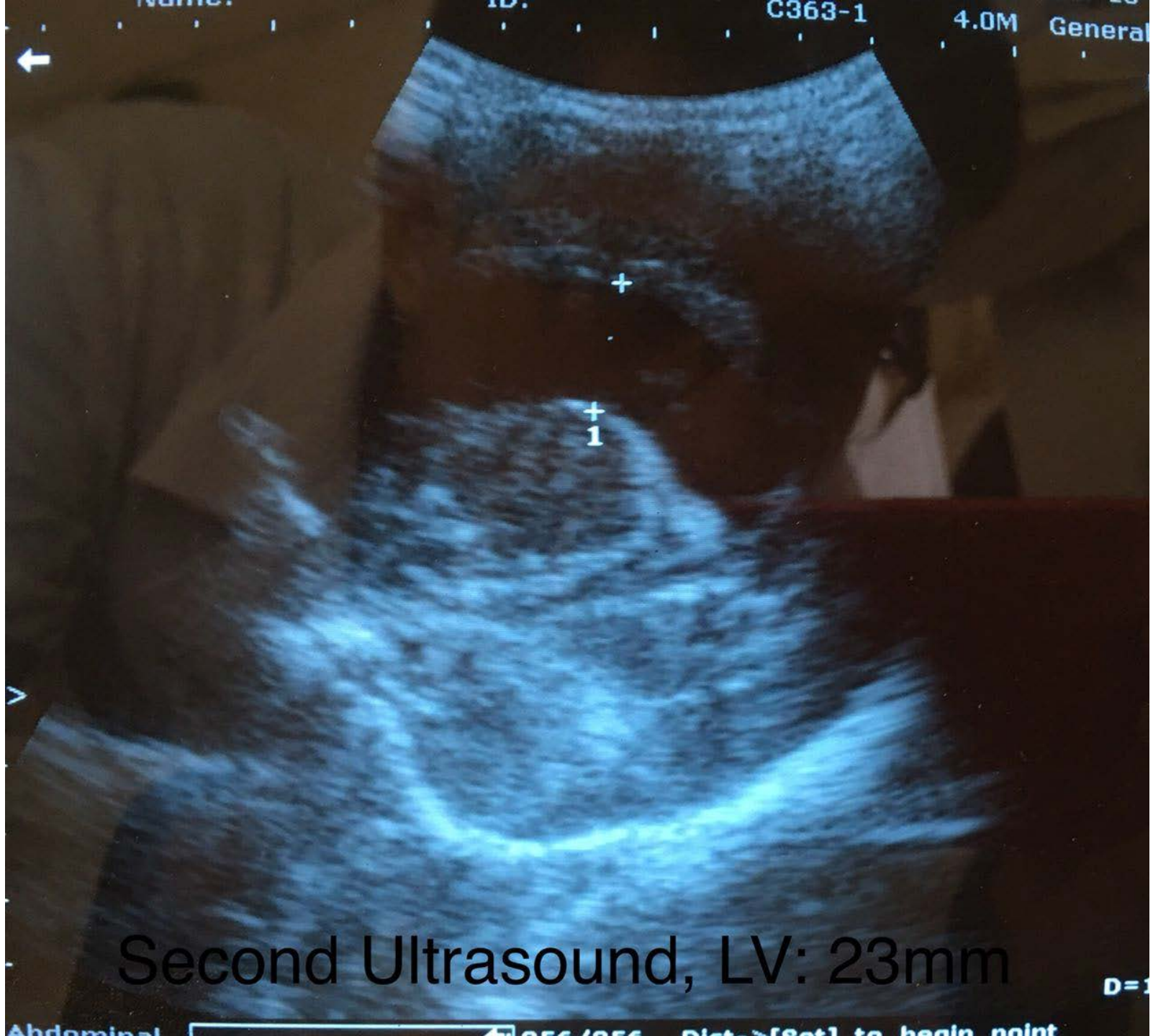
ឈ្មោះតេស្ត	លទ្ធផល	ខ្នាត	តំលៃយោង
Prothrombin Time			
PT (Sec)	**11.2**	seconds	12 - 16
PT (INR)	**0.89**	INR	0.9 - 1.3
aPTT	34	seconds	24 - 36

SEROLOGY	លេខសំណាក	អ្នកស្នើរសុំ	ថ្ងៃប្រមូលសំណាក	ថ្ងៃទទួលសំណាក
Blood-Clotted	0053-30042018	វេជ្ជបណ្ឌិត ឃាង ច័ន្ទបុទ្ធា	30-Apr-2018 14:40	30-Apr-2018 14:41

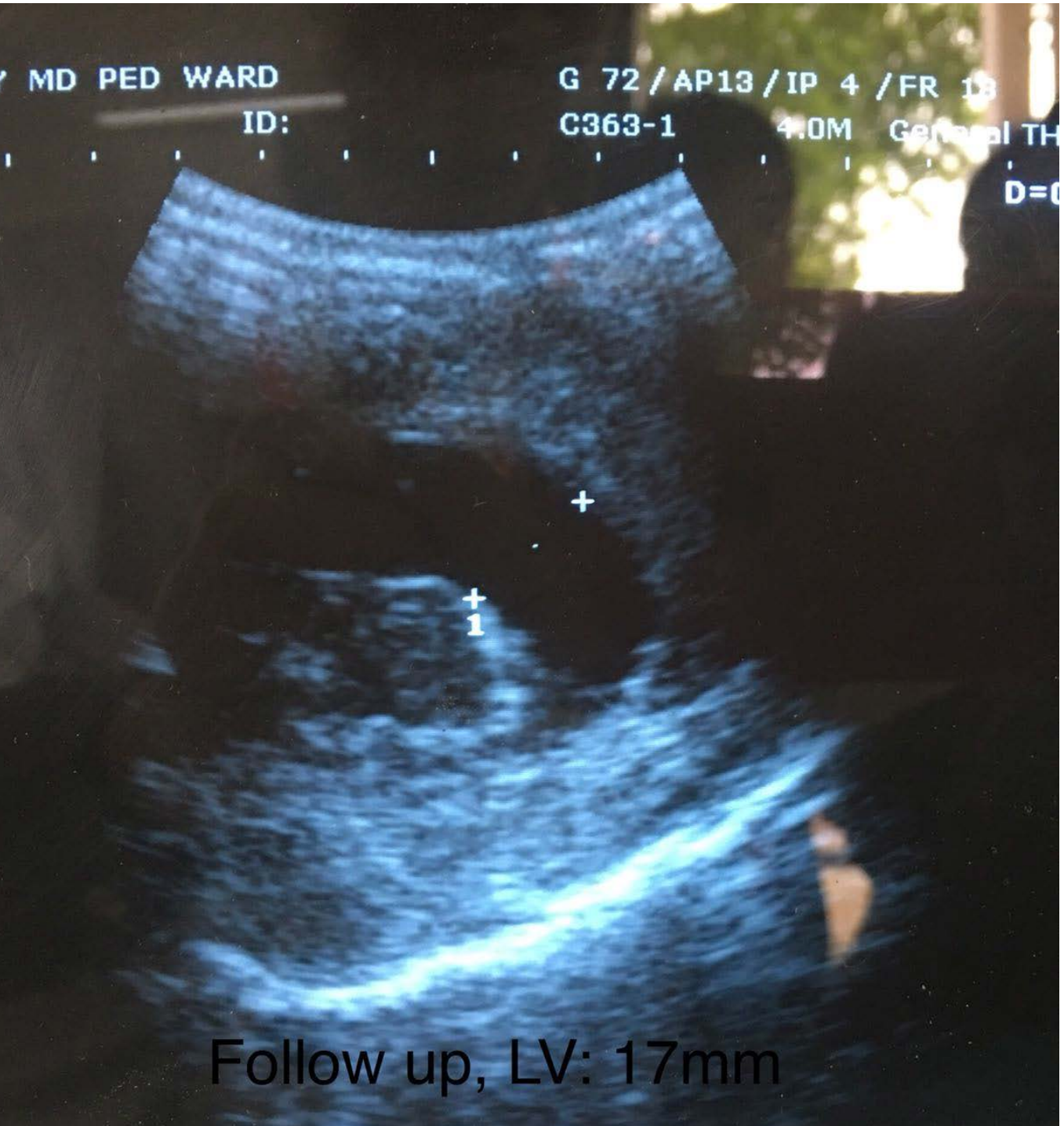
ឈ្មោះតេស្ត	លទ្ធផល	ខ្នាត	តំលៃយោង
CRP	Negative		

ថ្ងៃពិសោធន៍ចុងក្រោយ : 30-Apr-2018
ត្រួតពិនិត្យដោយ

ថ្ងៃចេញលទ្ធផលដំបូង : 30-Apr-2018 15:47
បុគ្គលិកមន្ទីរពិសោធន៍



Discharge patient on 02.05.18



(1 month after discharge)
Follow-up on 05.06.18
(Age 3 months)

- Good tone
- HC=32 cm
- Good breast feeding
- Hands open
- Pleasure in familiar situations
- Turns head to soft sound at ear level
- Turns head to soft sound at ear level

Discussion

- Late hemorrhagic disease of the newborn is a form of VKDB, verified in the cases

described and occurs in neonates 2wk to 3 mo after birth who are exclusively breastfed. Nervous system, skin, and gastrointestinal tract are the regions affected by the hemorrhage.

- The incidence of late hemorrhagic disease in infants with no history of vitamin K prophylaxis varied from 4.4 to 7.2 per 100,000 births in Asiatic and European studies.When a single oral dose of vitamin K was administrated at birth, this number fell to 1.4-6.4.5.
- Healthy neonates have relatively low circulating vitamin K concentrations, and even prophylactic vitamin K administration at birth is not always sufficient. In fact, the vitamin K content of human milk is very low compared with standard infant formulas
- Antibiotics, especially the broad-spectrum ones, cause alteration of the bacterial flora in the gut and reduces the population of vitamin K-producing bacteria. Diarrhoea too, especially when prolonged, produces a similar effect.

Discussion

- In developed countries. VKDB is now a rare life-threatening disease due to the widespread use of effective prophylaxis with vitamin K at birth. The postnatal administration of vitamin K dramatically decreased the incidence of vitamin K deficiency bleeding during the first weeks of life, although sporadic cases with late-onset haemorrhage were reported almost exclusively among breast-feeding

infants who did not receive additional prophylaxis.

DISCUSSION

- The commonest mode of presentation of LHD is intracranial haemorrhage. Intracranial haemorrhage risk of late VKDB was reported in as high as 50-80% of patients. While subdural is the most common location for haemorrhage; subarachnoid place is the second most common location for haemorrhage.
- Late VKDB can present as convulsions, poor sucking, irritability and pallor. D'Souza and Rao from India recorded convulsions in 71% and pallor in all their patients.
- In the present case, there was no evidence of diarrhea, malabsorption, liver dysfunction, disseminated intravascular coagulation. The possible risk factors of the present case despite prophylaxis at birth are a low level of vitamin K in the mother’s milk, use of a parenteral antibiotic.

Discussion

- Although it was not possible to perform the most specific test for the diagnosis of vitamin K deficiency at this age, the quick normalization of PT and APTT (within 24 hours) after the intramuscular and intravenous administration of the vitamin, associated with the clinical status, is enough for the diagnosis.

Conclusion

- Our case clinical presentation for IVH(Intra-Ventricular Haemorrhage) like : Severe anemia, repetition of convulsion,Coma,infection (Increase CRP) with febrile in infant age 2 wk-12 Wk(25days and 45 days).
- The development of neonatal cranial ultrasound technology, cranial ultrasound has become an important means in screening PIVH in newborns. Ultrasound has many advantages such as convenience, dynamic observation and no radiation. It has a high sensitivity in the diagnosis of subependymal hemorrhage and intraventricular hemorrhage .

Recommendation

- In addition to vitamin K prophylaxis at birth, vitamin K supplementation for exclusively breastfed neonates should be considered to prevent the late form of VKDB.***The American Academy of Pediatrics*** recommends that every newborn receives from 0.5 to 1mg of vitamin K intramuscularly at birth. Oral prophylaxis in a 2 mg-dose at birth, between the 1st and 2nd week, and in the 4th week is an alternative. When the newborn develops diarrhea and is exclusively breastfed, prophylaxis must be repeated.

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Implement APLS in Cambodia

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Abstract

Advance Pediatric Life Support (APLS) was established in UK 1990, in Australia 1997 and recently in Cambodia in 2006. This is a 3 days course.

APLS has been taught over 43.000 candidates all over the world, not include Cambodian candidates.

Brought in Cambodian by Cambodian- Australian Emergency physician in 2006, first course was tough in Angkor Hospital for Children by Australian APLS team and continue until 2010 by Cambodian team. For this period of time we educated more than 400 candidates through Cambodia whom coming from more than 15 provinces.
APLS provider course included APLS manual, pretest and posttest. There are many ways of teaching APLS included pre-reading manual, classroom lecture, small group discussion, interactive session, practical procedure and workshop.

In APLS manual contains many common emergency topics such as basic life support, advance life support, diagnosis and management of the seriously ill child, diagnosis and management of the seriously injured child, practical procedures and furthers topics included fluid and electrolyte management, acid-base balance.
Among all the topic practical procedure is the most attractive one for candidates as candidate enjoyed in real practicing procedure to manikin and pigs on the airways and breathing, circulation, interpreting trauma x-ray and stabilization-transfer.

A survey on completed candidates more than 100 staffs on their capability of applying APLS skill to their daily practice showed that 80% had managed a child in cardiac arrest, 85% a child with serious illness and 72% with serious injury. The same survey also asked them how the course prepared them for the REAL resuscitation. Most of them score 8 and 9 (maximum score was 10) on self-perceived preparedness for patients management.

Some countries such as in Asian, UK and Australia set a standard for all medical staff mush have completed APLS course before working in pediatric hospital.

Following our local survey and international standard, the APLS Provider Course is relevant to the Acute Paediatric Healthcare workers in Cambodia and should be a standard of Pediatric care in Cambodia.

Keywords: Advance Pediatric Life Support provider course, Basic life support.

Implementation of APLS in Cambodia

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Angkor Hospital for Children, Siem Reap

Objectives

- What is APLS? PLS?
- How can APLS help you in practice?
- Who can learn this?
- Which countries in ASIA apply APLS?

Angkor Hospital for Children

What is APLS?

- **APLS**: Advanced Pediatric Life Support
- **PLS**: Pediatric Life Support
- **BLS-CPR**: Basic Life Support-Cardio-Pulmonary

Resuscitation

Angkor Hospital for Children

What is APLS?

International Liaison Committee on Resuscitation
ILCOR

Australian Resuscitation Council

New Zealand Resuscitation Council Inc
Wakaora Aotearoa

apls
Advanced Paediatric Life Support

Research Science to Reality

Australian Resuscitation Council

JT 2011

Advanced Pediatric Life Support is taught, and its principles practised throughout the world. Over 43,000 candidates have completed the course since its inception in 1990.

In Cambodia more then 512 candidates have completed the course in Angkor Hospital for Children since 2005.

The 3-day APLS provider course comprises three days of face-to-face instruction and practical sessions.

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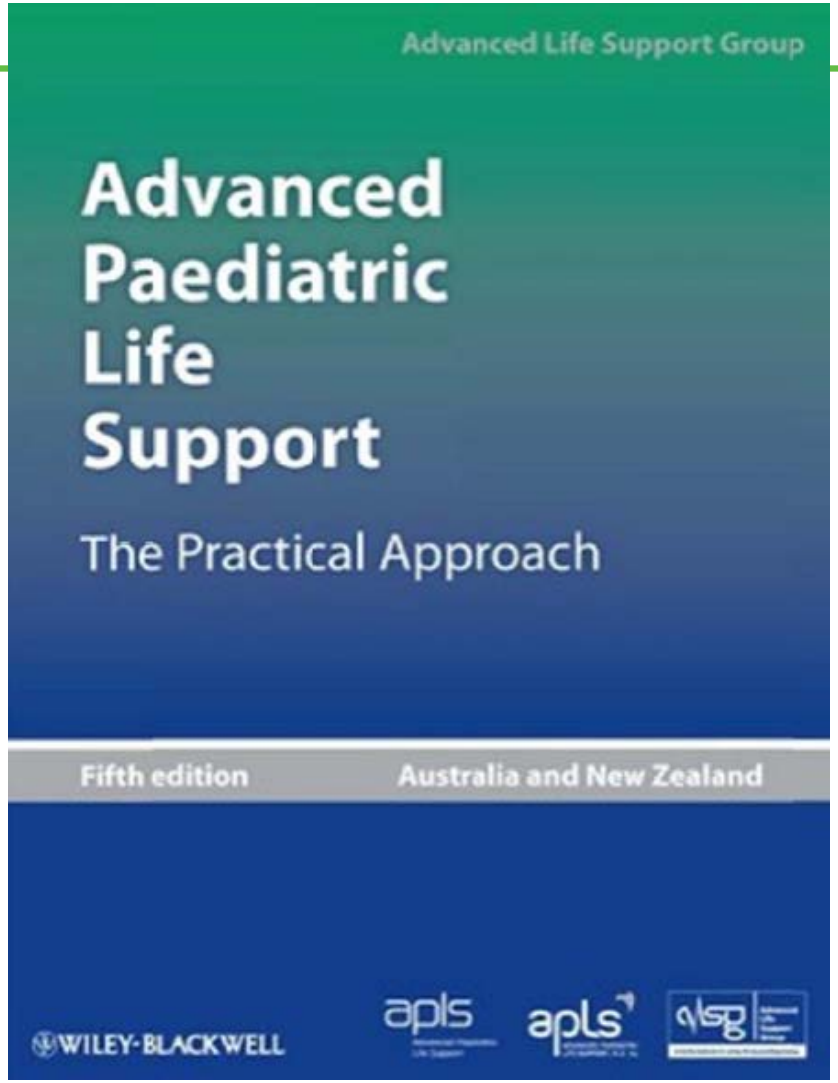
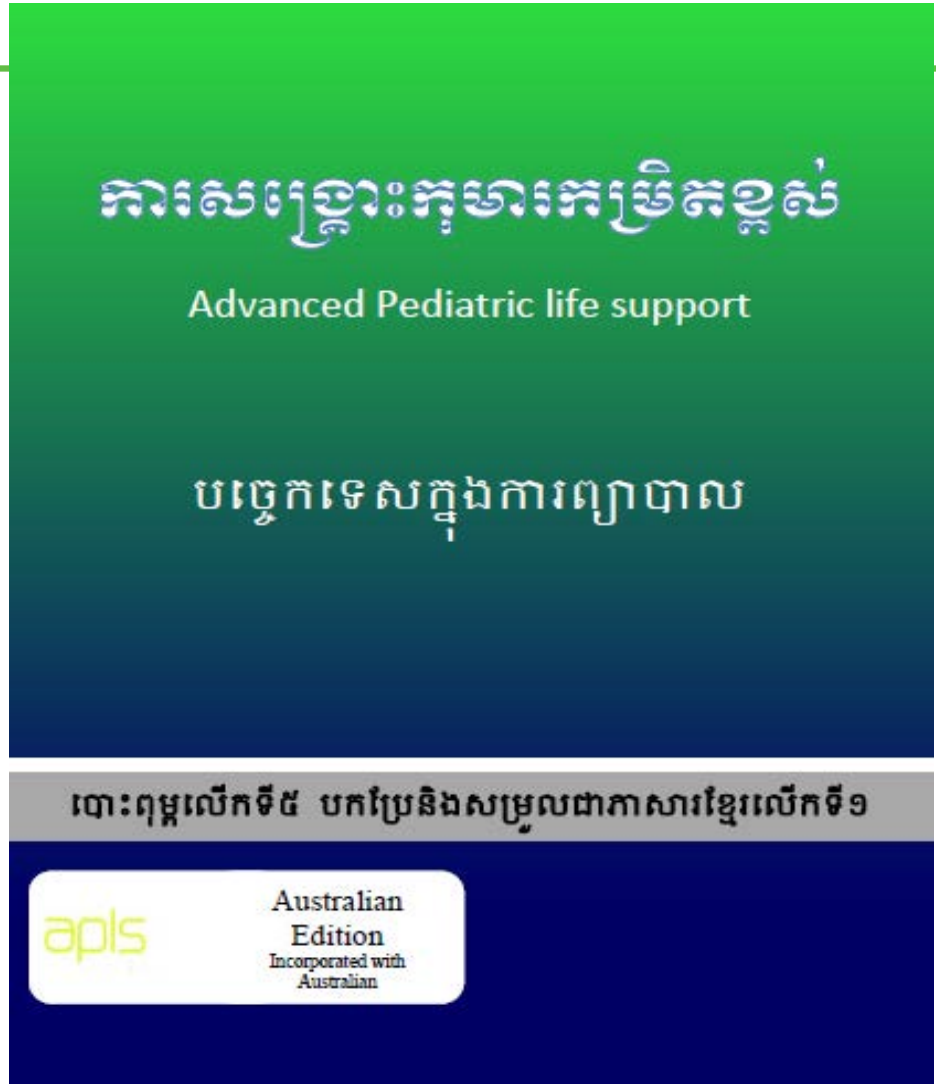
APLS manual





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How APLS can help you in Practice?

- Increased confidence
- Increased awareness
- Increased skills and ability to assess and respond to a range of pediatric emergencies
- Increased understanding of team work

Angkor Hospital for Children

What are the contents of APLS manual?

- Basic Life support
- Diagnosis and management of the seriously ill child
- Diagnosis and management of the seriously injured child
- Practical procedures
- Fluid and electrolyte management
- Acid-base balance
- Pain management
- Septic child
- Neurological assessment
- Resuscitation of the baby at birth
- ……..

Angkor Hospital for Children

Who can learn APLS?

- General doctors
- Internal medicine doctors
- Pediatricians
- Anesthetists
- Surgeons

Who can learn PLS?

- All NURSES who work in clinical areas and are in touch with pediatric patients

ANGKOR HOSPITAL FOR CHILDREN

What Angkor Hospital for Children provides?

- Advance Pediatric Life support (APLS) provider course
- Advance Pediatric Life support instructor course
- Pediatric Life Support (PLS)
- Basic Life Support (BLS-CPR)

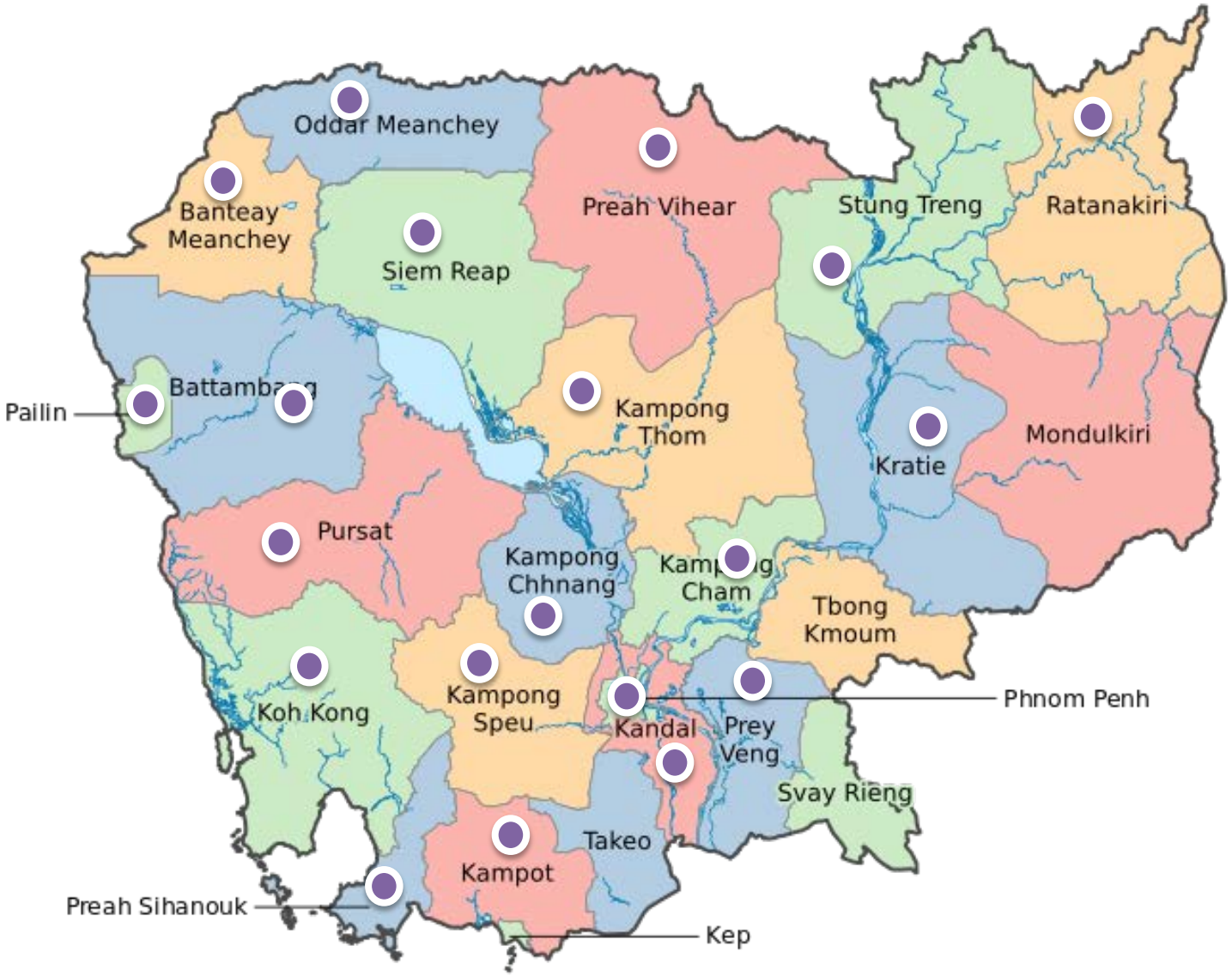
First successful APLS candidate group

APLS in Angkor Hospital for Children

- Started in 2005, taught by Australian instructors
- 2010 fully taught by Cambodian instructors
- Total instructors: 36 doctors and nurses
- Instructor candidates IC1-IC2: 28 doctors and nurses
- 2 course coordinators
- 2005-2017: 512 doctors and nurses
- 4 courses per year
- Maintained over at least 4yrs

Angkor Hospital for Children

Coverage of APLS participants

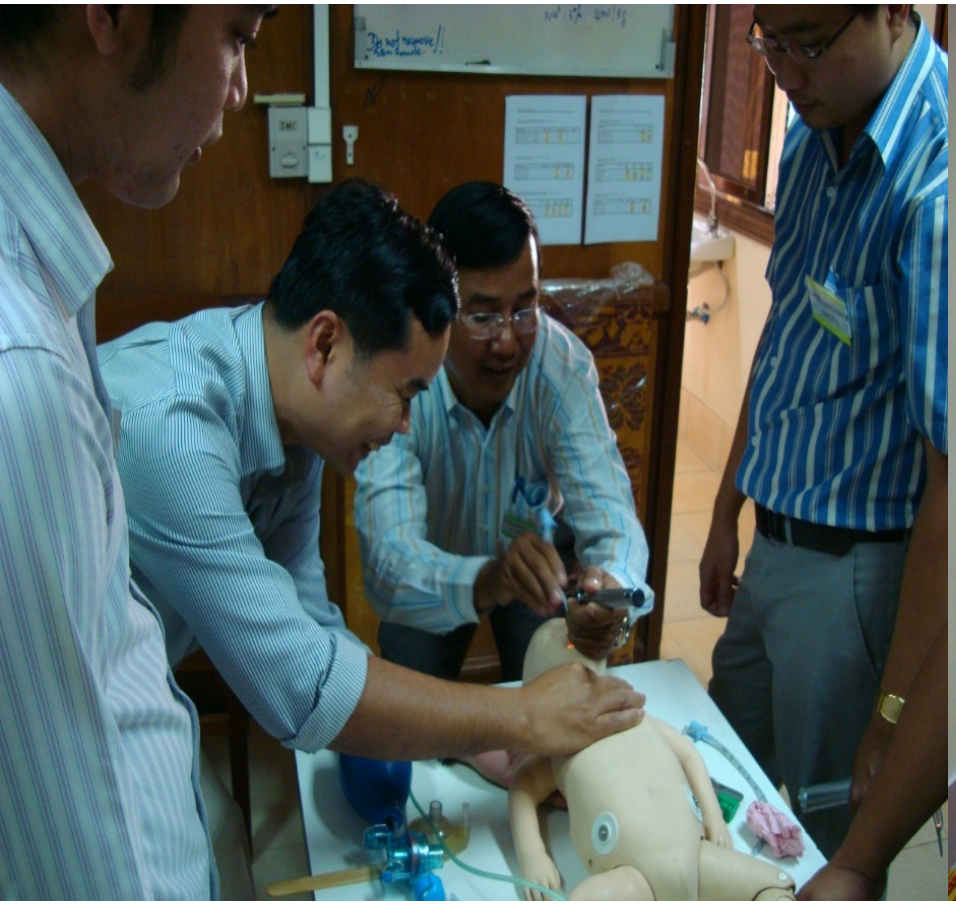


Angkor Hospital for Children

Lectures and practical sessions

ANGKOR HOSPITAL FOR CHILDREN

Practice and testing



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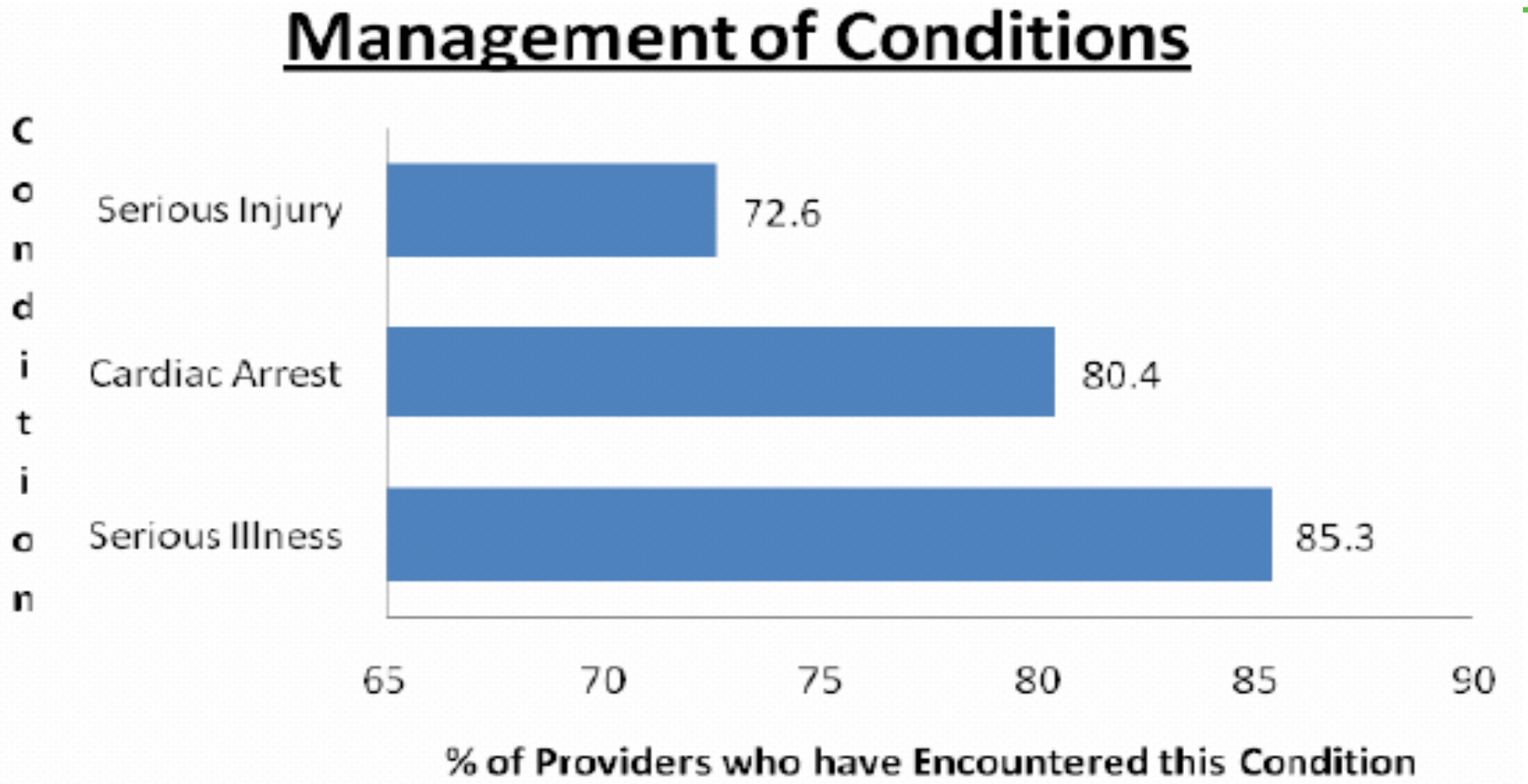
Do providers actually get to apply the skills after being trained?



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Assessment of the effect of Advanced Paediatric Life Support training on level of self- perceived preparedness among health-care workers in Cambodia.Dhingra P[1], Ngeth P, Prak M, Ung S.

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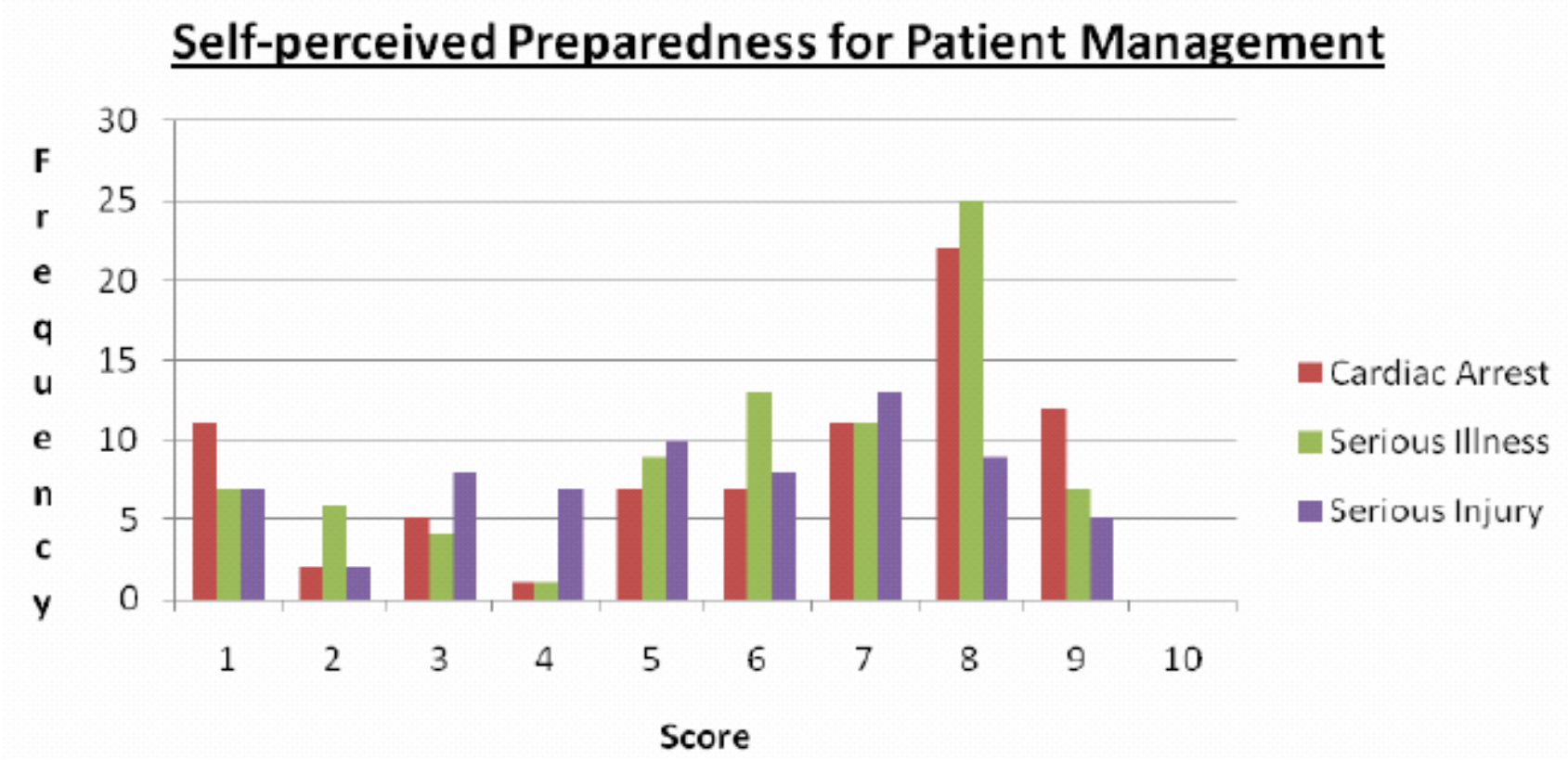
How did providers feel the course prepared them for REAL resuscitation?



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Local instructors and successful candidates

ANGKOR HOSPITAL FOR CHILDREN

Which countries in ASIA apply APLS?

- Malaysian Resuscitation Council (national committee on resuscitation training)-APLS-2012
- Vietnam-APLS March 2004
- Singapore-APLS (PALS)
- Sri Lanka-APLS
- Thailand-PALS
- ➢ **Has become requirement standard before starting working in pediatric hospital- in some countries**

Emerg Med Australas. 2008 Jun;20(3):271-5. doi: 10.1111/j.1742-6723.2008.01094.x.
Teaching paediatric resuscitation skills in a developing country: introduction of the Advanced Paediatric Life Support course into Vietnam. Young S[1], Hutchinson A, Nguyen VT, Le TH, Nguyen DV, Vo TK.

Angkor Hospital for Children

Conclusion

- ***The APLS Provider Course is relevant to Acute Paediatric Healthcare workers in Cambodia***
  - For clinicians who are managing real patients
  - Provides a moderate level of perceived preparedness and hence confidence to perform paediatric resuscitation
- **សំណូមពរដល់ក្រសួងសុខាភិបាលមេត្តាទទួលស្គាល់ជាផ្លូវការកម្មវិធីនេះ។**

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Angkor Hospital for Children

Questions and Discussion

References

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- **Angkor Hospital for Children, Siem reap**: www.angkorhospital.org

  Tel: 855 63 963 409

ANGKOR HOSPITAL FOR CHILDREN

Special Thanks to

- APLS Australian team
- APLS Cambodian team
- Angkor Hospital for Children

Angkor Hospital for Children

Antitumour Potentials of Silver Nanoparticles from Elaeagnus indica Servett.

Ramesh Kannan Natarajan[1,2], Agnel Arul John Nayagam[2], Anbin Ezhilan[3] and Natarajan Ekambaram[1]

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Abstract

Objective: *Elaeagnus indica* Servett. leaf extract was chosen as a reducing agent to fabricate silver nanoparticles (AgNPs) by a simple, cost-effective and eco-friendly process with the aim of treating Ehrlich Ascites Carcinoma (EAC) in Swiss Albino Mice.

Methods: The formation of synthesized nanoparticles were characterized by UV-visible analysis (UV-vis), Fourier transform infra-red (FT-IR), transmission electron microscopy (TEM), X-ray diffraction (XRD) and zeta potential analyses. The anticancer potentials of green synthesized AgNPs from *E. indica* was investigated using *in vitro* by MTT and *in vivo* study was analyzed using EAC cells induced Swiss Albino mice (30-35g) and treated with *E. indica* derived AgNPs at a dose of 100, 200 and 300µg/ml. Blood and liver tissues were collected subsequent to dissection and subjected to hematological, biochemical, enzymatic & non-enzymatic antioxidants, histological and anticancer assays

Results: A peak at 412nm indicated the surface plasmon resonance of AgNPs. FTIR studies indicated polyphenols and proteins as possible encapsulates. TEM analysis showed particles size in the range of 5-30nm. All the hematological, biochemical, enzymatic & non-enzymatic antioxidant, histological and anticancer analyses revealed revival after treating with *E. indica* derived AgNPs.

Conclusion: All these observations indicate that the AgNPs were effective in treatment of EAC.

Keywords: *Elaeagnus indica* Servett.; EAC; Anticancer Effect and Green synthesized AgNPs

Antitumour potentials of Silver Nanoparticles synthesised from *Elaeagnus indica* Serv.

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[1]PG & Research Department of Botany, National College (Autonomous), Trichy 620 001, Tamil Nadu, India.

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[3]Director of International Relation Affairs, Sen Sok IU Hospital, Phenom Penh, Cambodia.

Introduction

- Silver Nanoparticles
  - Arch Product of Nanotechnology
  - Physical and Chemical methods
    - Harmful, Costly and not ecofriendly
  - Biological Methods
    - Green Synthesize - Herbal Based
    - Eco Friendly One
- Cancer
  - Chemotherapy with side effects
  - Green synthesized AgNPs without side effects

Objectives

- Synthesis and Characterization of nanoparticles from plant using $AgNO_3$
- Evaluation of Antitumor potential of Green synthesized Silver Nanoparticles using *in vitro* (HT 29) and *in vivo* (EAC) methods

Collection of Plant

Experimental Design

Group I – Control
Group II – EAC cell line (1X10^{6}cell/mouse)
Group III – EAC cell line (1X10^{6}cells) treated with 100µg /kg BW of *Ei*L-AgNPs
Group IV – EAC cell line (1X10^{6}cells) treated with 200µg /kg BW of *Ei*L-AgNPs
Group V – EAC cell line (1X10^{6}cells) treated with 300µg /kg BW of *Ei*L-AgNPs
Group VI – EAC cell line (1X10^{6}cells) treated with 5– Fluorouracil (5-FU) (20mg/kgbw.)

Statistical Analysis

The experimental results were expressed as the mean ± SE Data were assessed by ANOVA followed by Student's t-test; P value of < 0.05 was considered as statistically significant, P value of < 0.01 was considered as statistically very significant, P value of < 0.001 was considered as statistically Excellent significant.

Group IV - 1000 µg/Kg BW of *Ei*L-AgNPs

Synthesize and Characterization of Silver Nanoparticles

UV-visible Spectroscopy
FTIR
TEM
DLS

Anticancer – *In Vitro* Studies

MTT Assay (Scudiero *et al*., 1988)

In Vivo Studies

Toxicity

Anticancer

Body weight of the animals

Hematological Parameters

Hemoglobin	(Wintrobe *et al*., 1961)
RBC Count	(Armour *et al*., 1965)
WBC count	(Dacie and Lewis, 1958)

Biochemical Parameters

Blood glucose	(Folin and Wu, 1919)
Protein	(Lowry *et al*., 1951)
Bilirubin	(Malloy and Evelyn, 1937)
Creatinine	(Bonsness *et al*.,1945)
Uric Acid	(Caraway and Seligson, 1963)
Urea	(Natelson, 1951)

Hepatic enzymes

Alanine transaminase	(King, 1965)
Aspartate transaminase	(King, 1965)
Serum alkaline phosphatase	(King, 1965)

in vivo studies - Physical Parameters

Blood glucose	(Folin and Wu, 1919)
Protein	(Lowry *et al*., 1951)
Liver glycogen	(Morales *et al*., 1973)
Serum cholesterol	(Parekh and Jung, 1970)
Serum triglycerides	(Foster and Dunn, 1973)
VLDL, LDL & HDL cholesterol	(Friedewald and Levy, 1972)
Deoxy ribonucleic acid	(Burton, 1956)
Ribonucleic acid	(King, 1965)

Glycoprotein contents in liver tissue

Protein bound hexose	(Niebes, 1972)
Protein bound hexosamine	Wanger, 1972)
Sialic Acid	(Wagner L. 1979)
Fucose	(Dische and Hettles 1948)

Hepatic marker enzymes

Alanine transaminase	(King, 1965)
Aspartate transaminase	(King, 1965)
Serum alkaline phosphatase	(King, 1965)
Gamma-glutamyl transferase	(Rosalki and Rau, 1972)
Lactate dehydrogenase	(King, 1965)

LPO & Antioxidants

Lipid peroxide	(Ohkawa *et al*., 1979)
Glutathione peroxidase	(Rotruck, *et al*., 1973)
Reduced glutathione	(Moron *et al*., 1979)
Superoxide dismutase	(Misra and Fridovich, 1972)
Catalase	(Maehly and Chance, 1954)

Elaeagnus indica Servett.

Taxonomy	
Domain	*Eukaryota*
Kingdom	*Plantae*
Order	*Rosales*
Family	*Elaeagnaceae*
Genus	*Elaeagnus*
Species	*indica*

Eleagnus indica Serv.

- A large, branched, usually scandent shrub, often running over trees.
- **Leaves -** variable, broadly elliptiv or elliptic-lanceolate, obtuse or acuminate apex, upper surface pale green, clothed with small whitish seals, lower surface silvery white.
- **Flowers** - bisexual, clustered on short axillary shoots, sometimes solitary. Perianth covered with silvery scales.
- Fruit nearly 2 cm long and edible.
- Distributed in Asia, South Europe, and North America.

Literature survey

- ***Elaeagnus glabra* (Elaeagnaceae)**
  - responsible for inhibition of tumor cell invasion – (Li *et al*., 2009).
- ***Elaeagnus umbellata* (Elaeagnaceae)**
  - Extracts of **all genotypes** inhibited proliferation of human leukemia HL-60 cancer cells and human lung epithelial cancer. (Wang *et al*., 2007).
- ***Elaeagnus multiflora* (Elaeagnaceae)**
  - Extract showed anticancer activity against HT29 cell lines (Mee Sook *et al*., 2010).
- ***Elaeagnus pungens* (Elaeagnaceae)**
  - Three new water-soluble compounds from the bark showed moderate cytotoxic activity against SGC-7901 and BEL-7404 tumor cell lines (Wu *et al*., 2010).

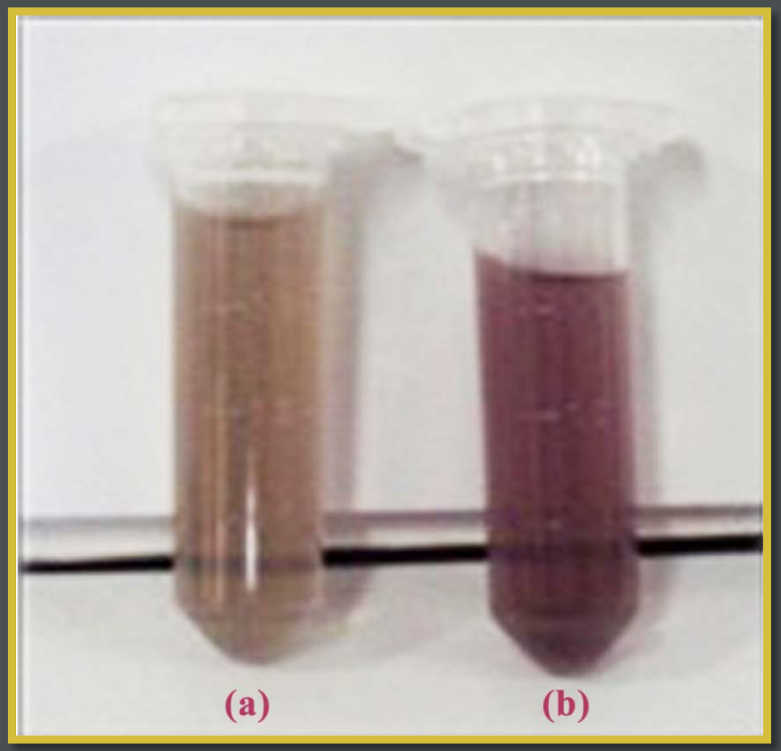
Identification and Authentication

- Identified and authenticated with the specimen deposited in Rapinat Herbarium, St. Joseph's College, Tiruchirappalli.
- Voucher specimen no: **SJCBOT1286.**

RESULTS & DISCUSSION

Synthesize and Characterization of AgNps

Colour Changes of *E. indica* with 0.1mM $AgNO_3$

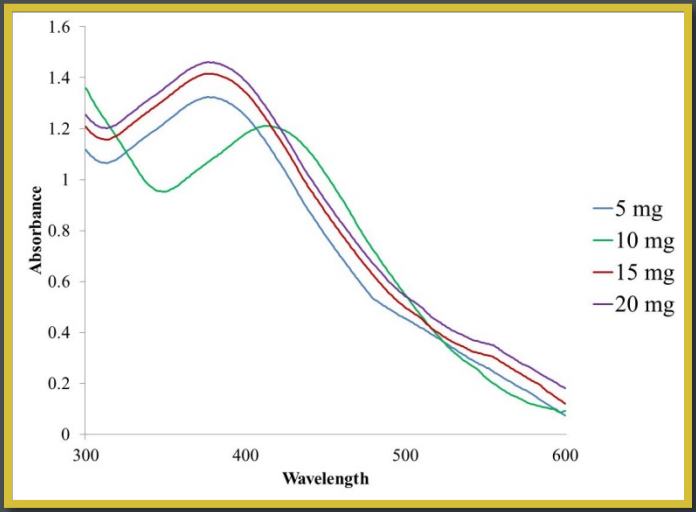


(a) Before reaction

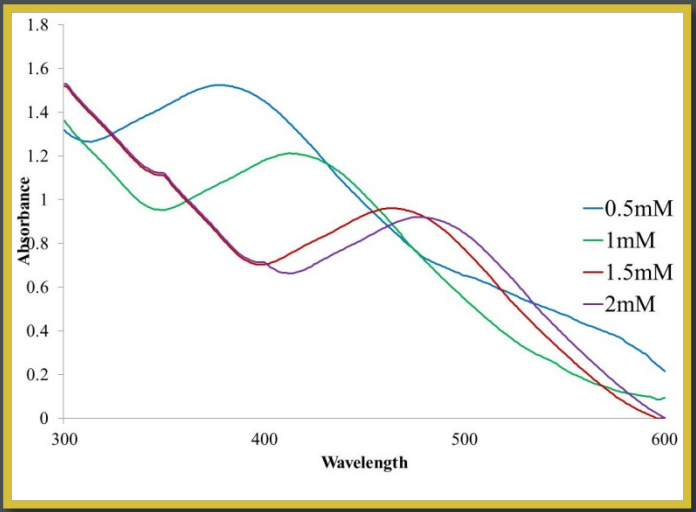
(b) After reaction

UV-Vis spectra of 1mM $AgNO_3$ *E. indica* at different conditions

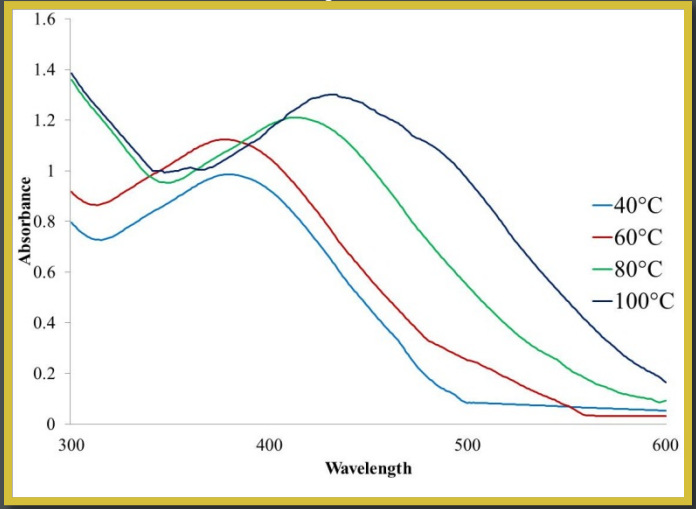
Plant Extract



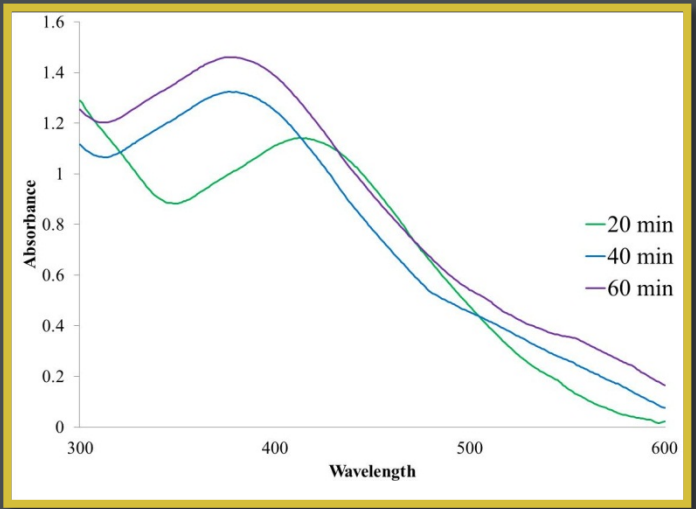
$AgNO_3$



Temperature

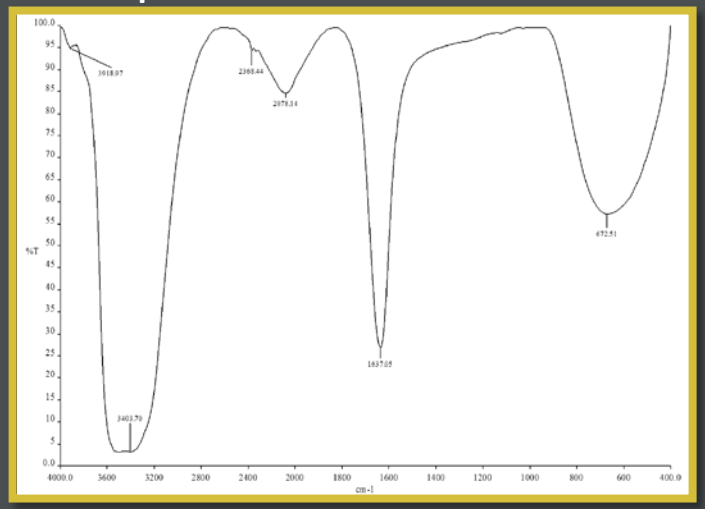


Time

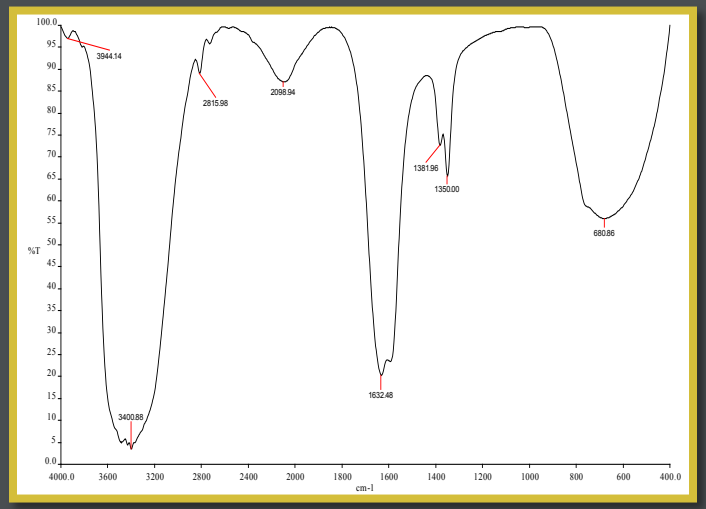


FTIR spectra

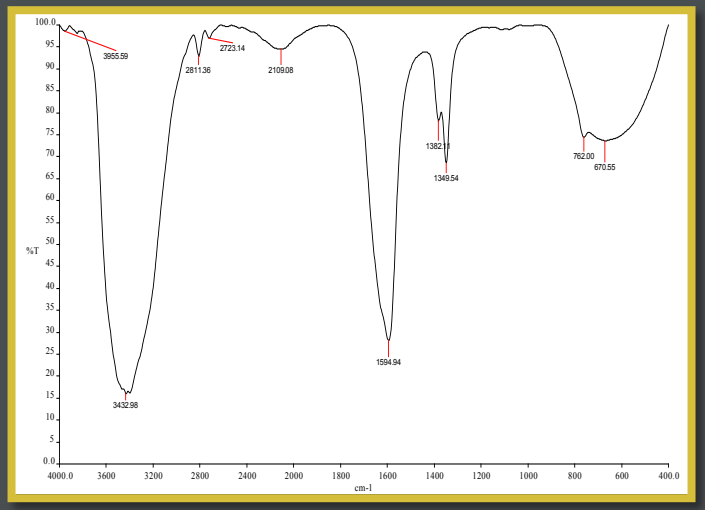
Aqueous leaf extract of *E. indica*



0.1mM Silver Nitrate

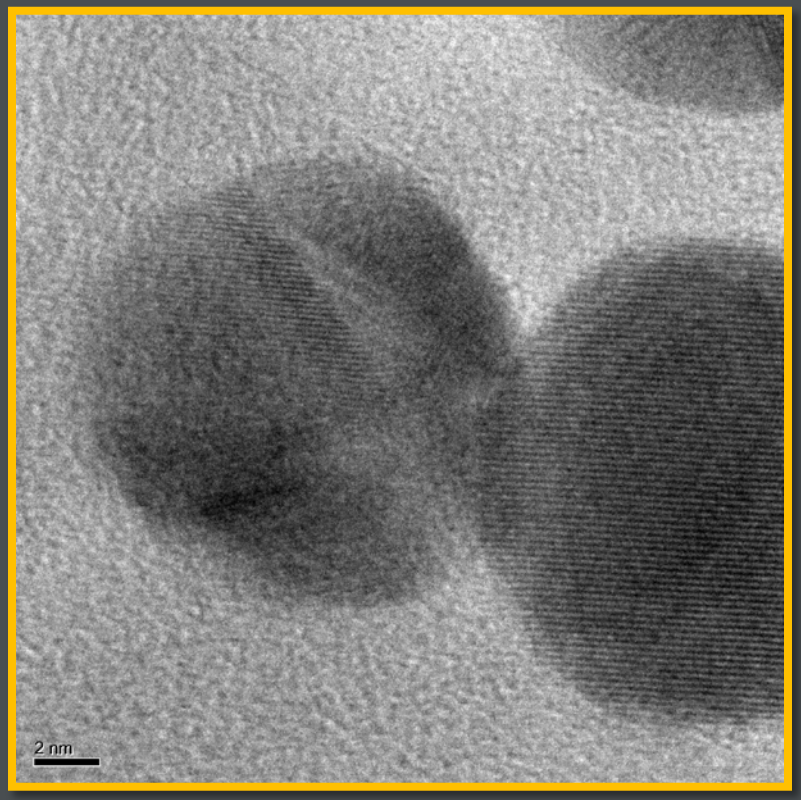


Aqueous leaf extract of *E. indica* (10 mg) treated with 1mM Silver nitrate at 80°C for 20m

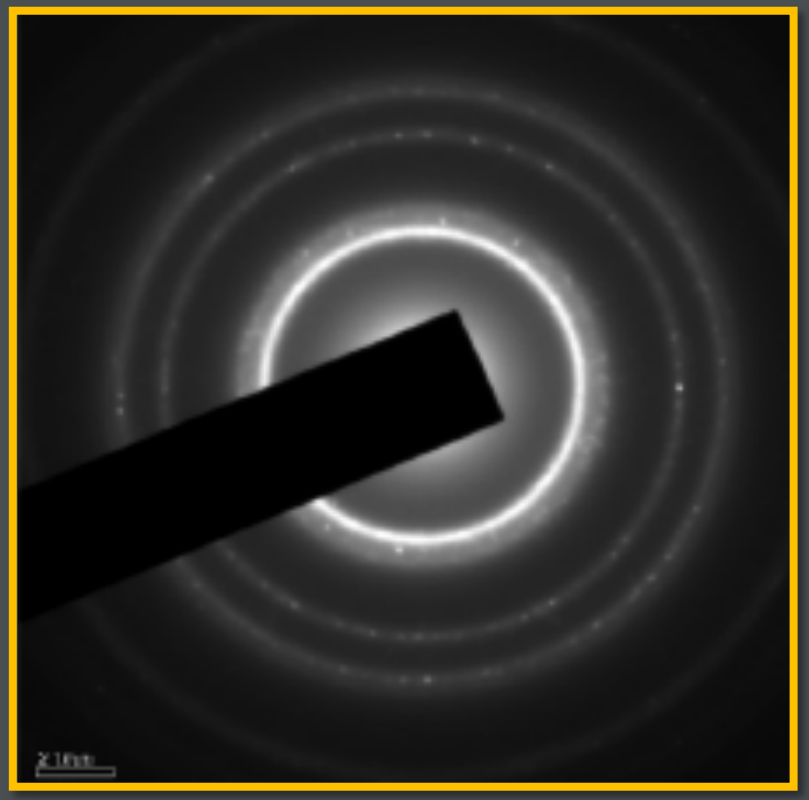


HR - TEM & SAED PATTERN

HR-TEM

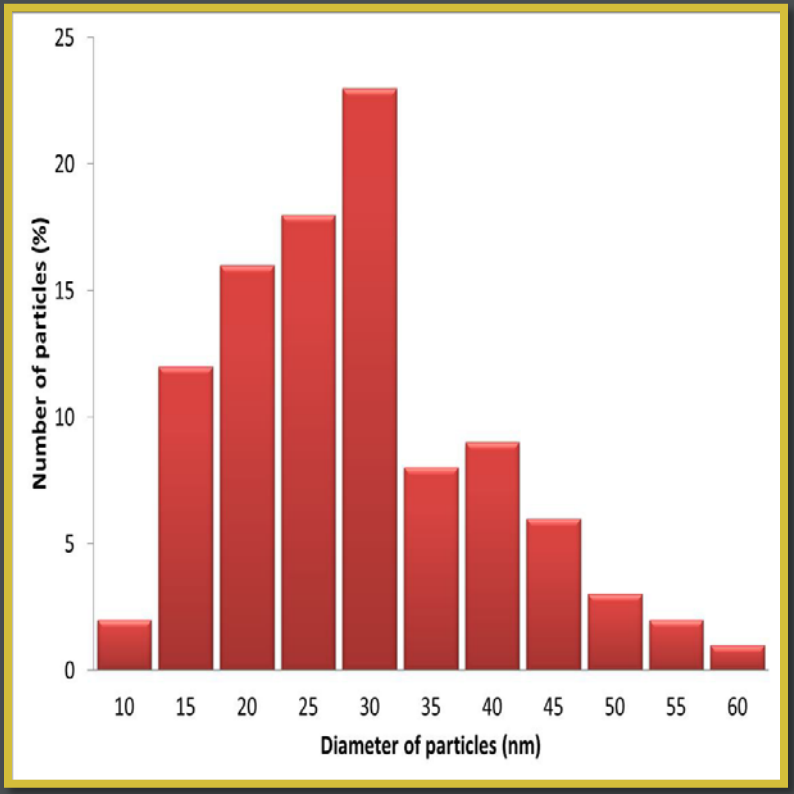


SAED PATTERN

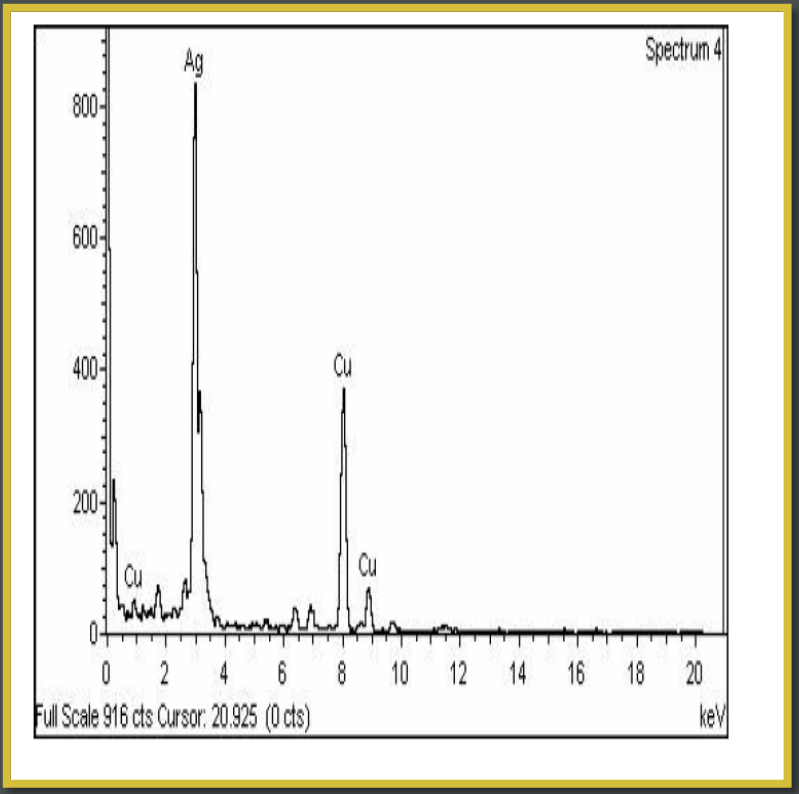


HR - TEM & SAED PATTERN

Distribution of AgNP

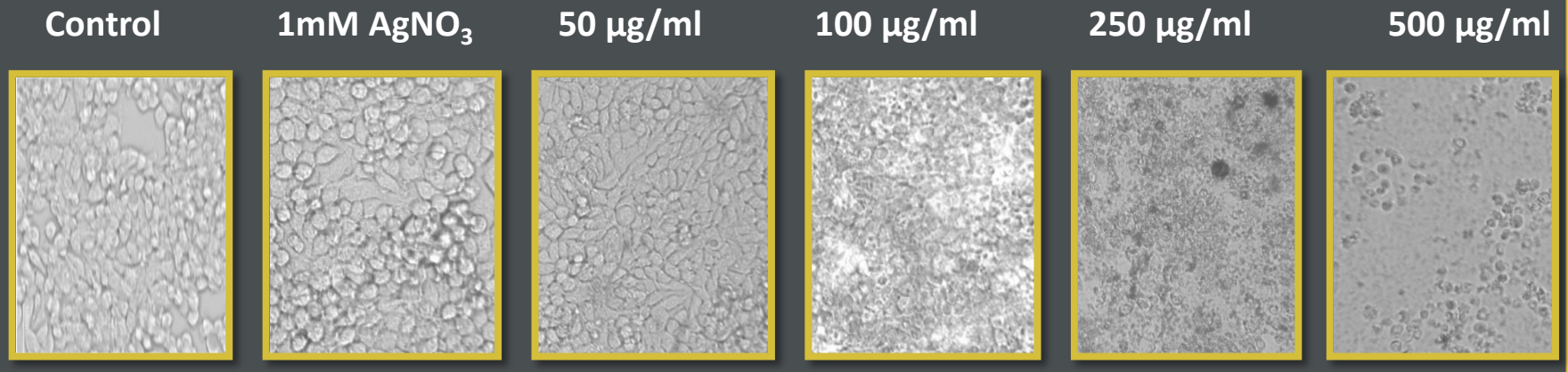


EDX Analysis

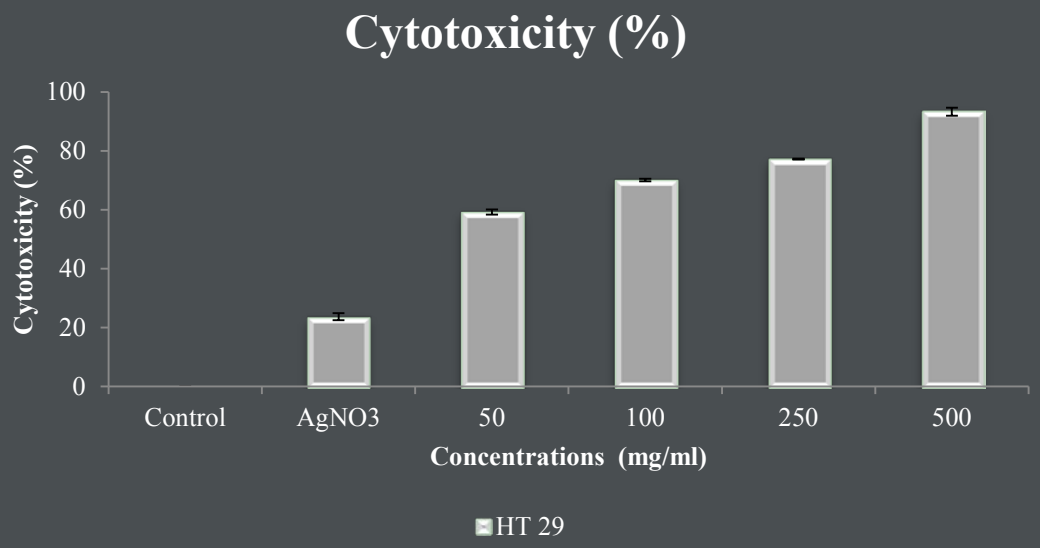


Antitumour study
(In vitro study)

*Cytotoxic effects of Ei*L-AgNPs *on HT-29 cells (MTT Assay)*



Concentration (µg/ml)	Cytotoxicity (%)
	HT-29
Control	-
$AgNO_3$	23.65±1.23
50	59.23±0.43
100	70.14±0.21
250	77.23±1.32
500	93.34±0.89

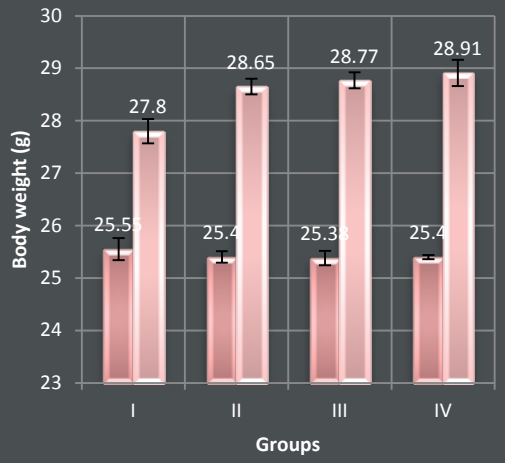


IC_{50} for HT-29 was 31.59µg/ml

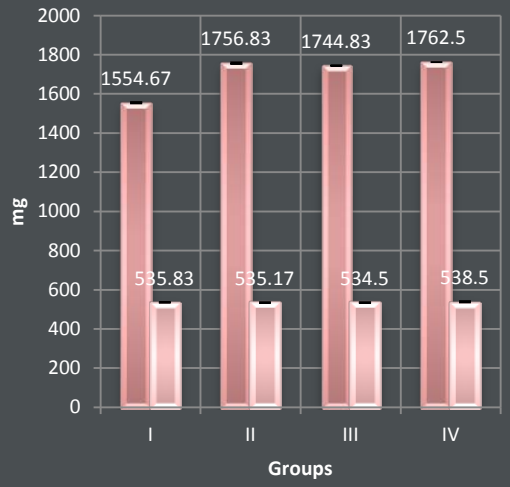
Toxicity studies

Effect of *Ei*L-AgNPs on Toxicity

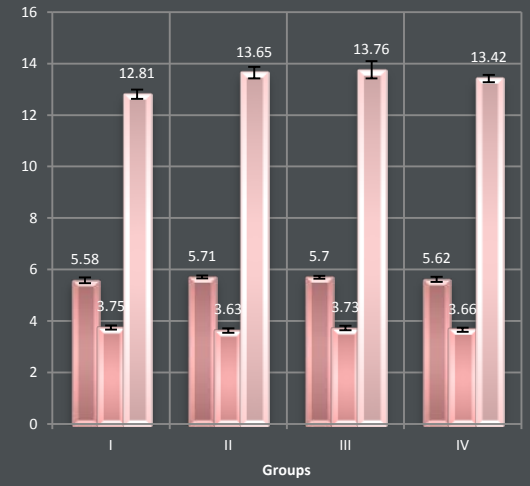
Body Weight



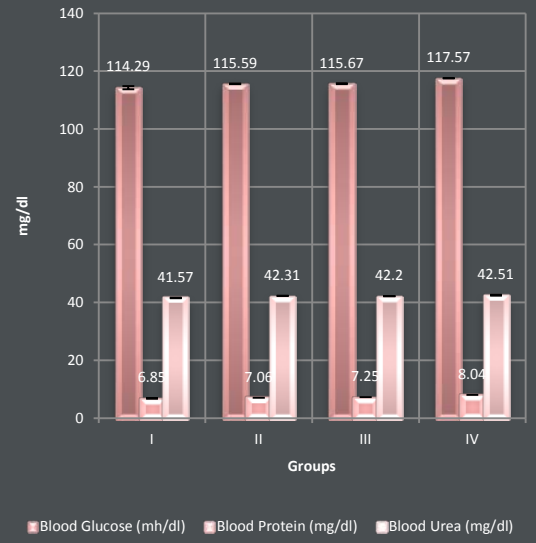
Organ Weight

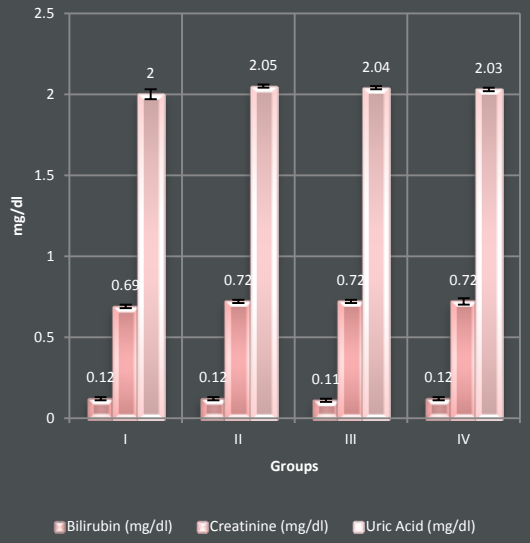


Hematological Parameters

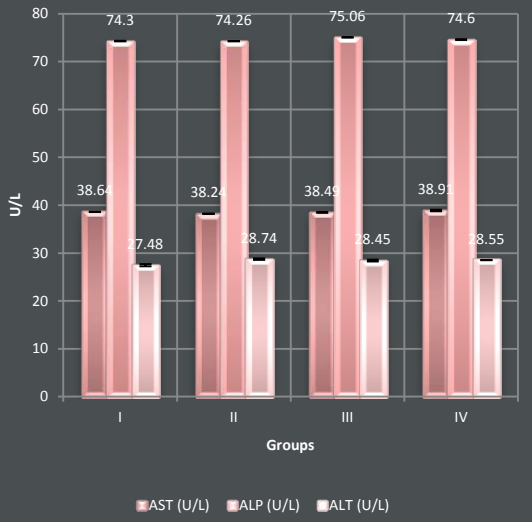


Biochemical Parameters





Hepatic Enzymes

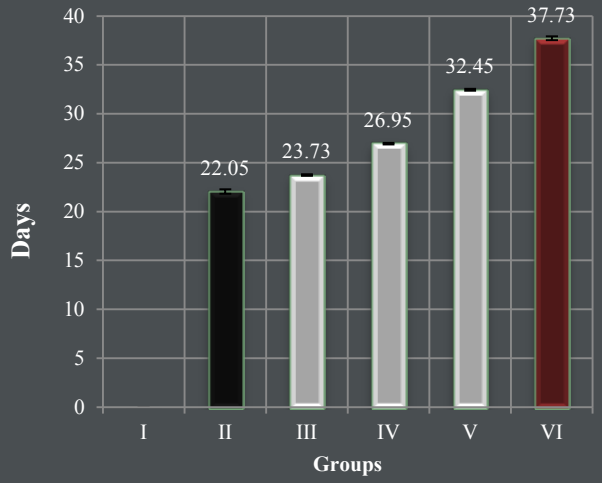


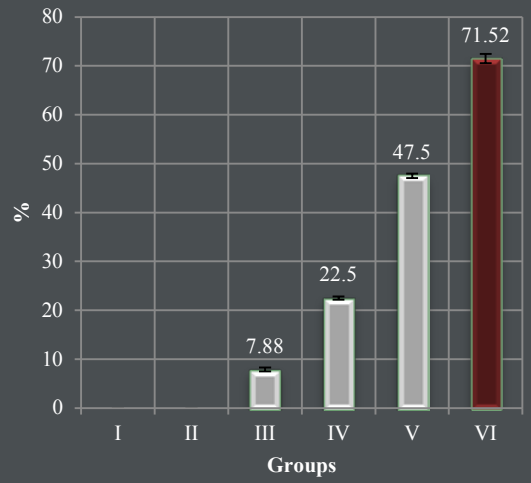
Antitumour study
(In vivo study)

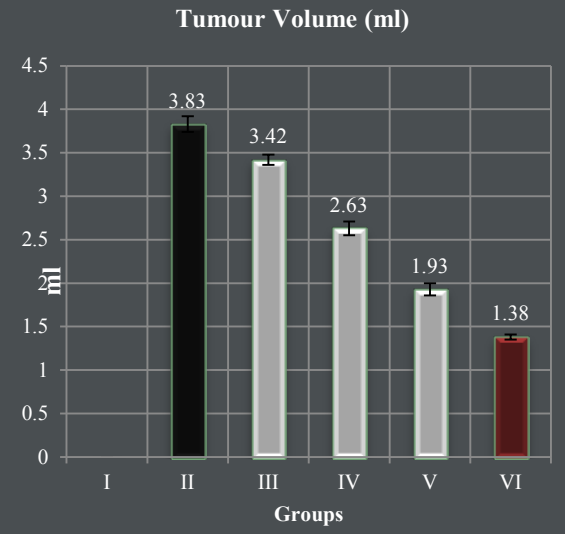
Effect of *Ei*L-AgNPs on Body weight of Experimental Swiss Albino Mice

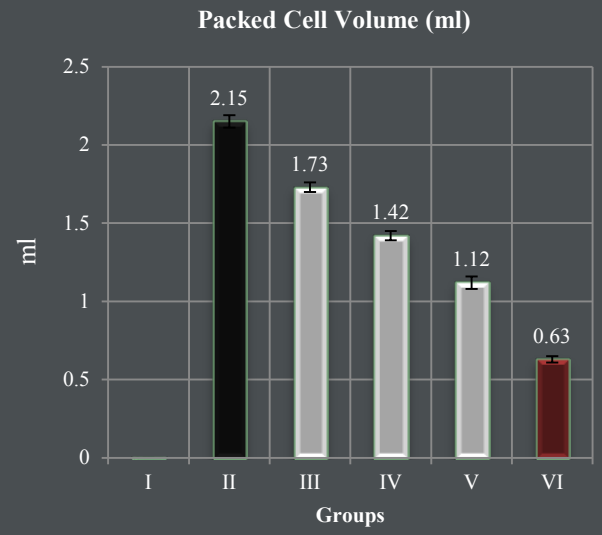
Values are Mean±SE, n = 6; * p<0.001 statistically significant when compared with Group I;
Statistically significant when compared to EAC control group; ap < 0.05, bp < 0.01, cp < 0.001.

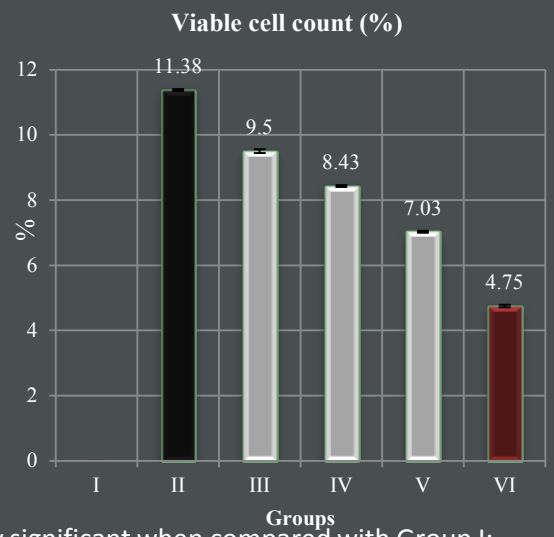
Effect of *Ei*L-AgNPs on Survival time, Tumour Volume and Cell count of EAC bearing Swiss Albino Mice

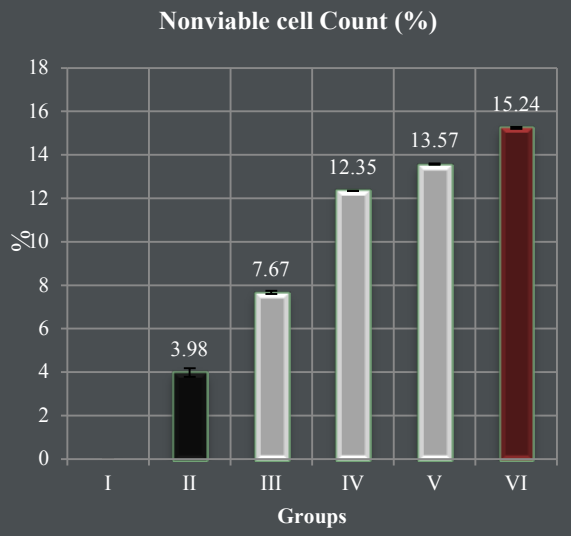






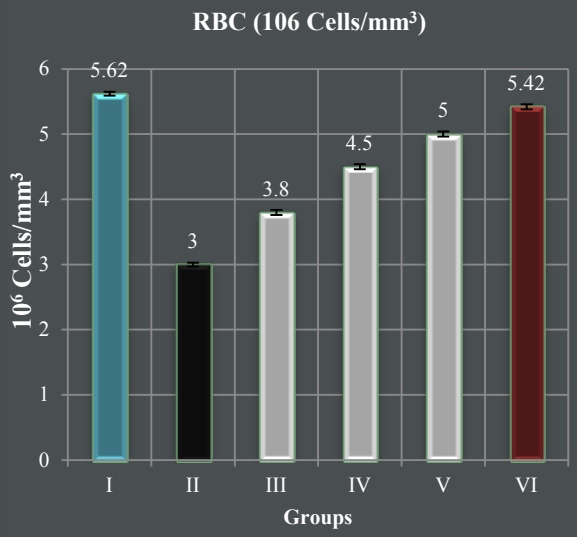


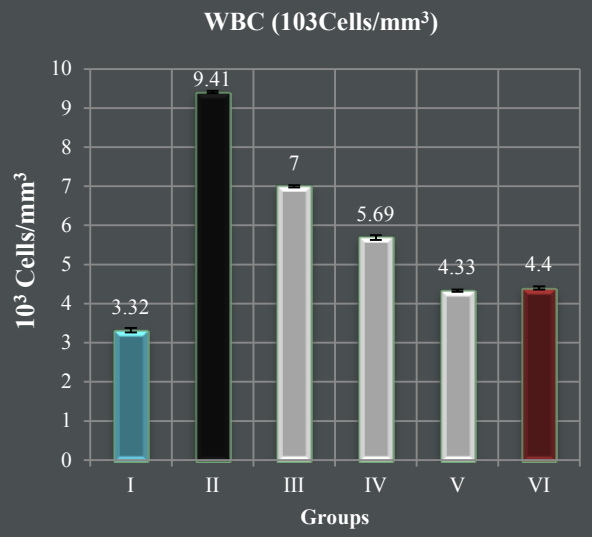


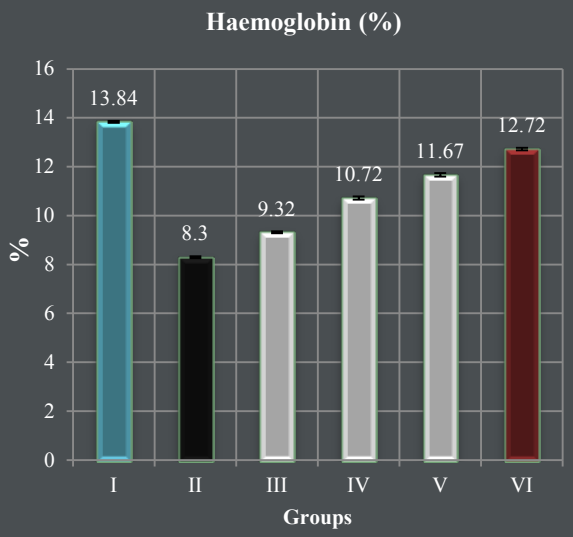


Values are Mean±SE, n = 6; * p<0.001 statistically significant when compared with Group I;
Statistically significant when compared to EAC control group; ap < 0.05, bp < 0.01, cp < 0.001.

Effect of *Ei*L-AgNPs on Hematological Parameters of Experimental Swiss Albino Mice

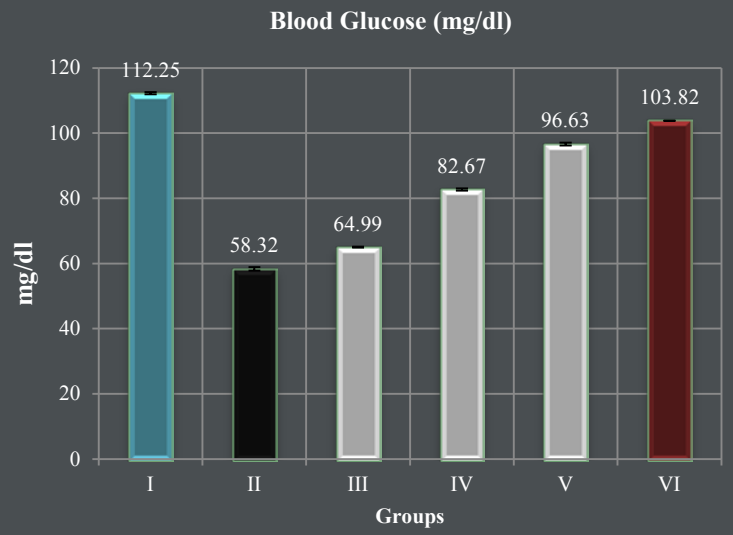


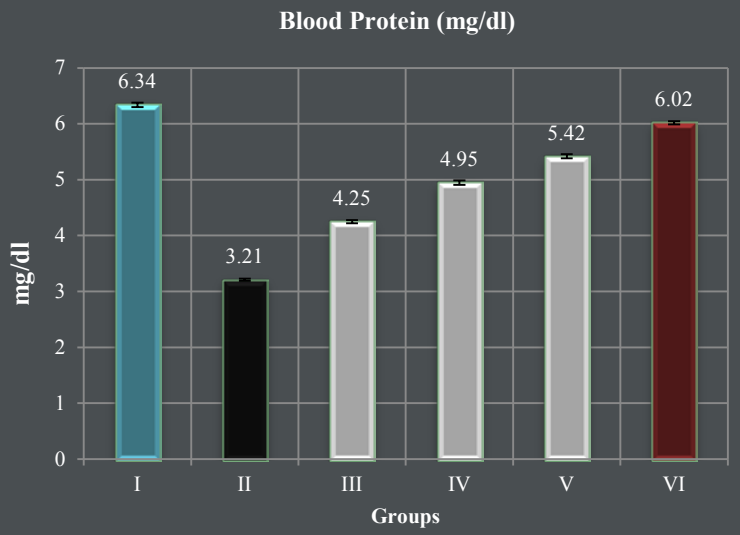


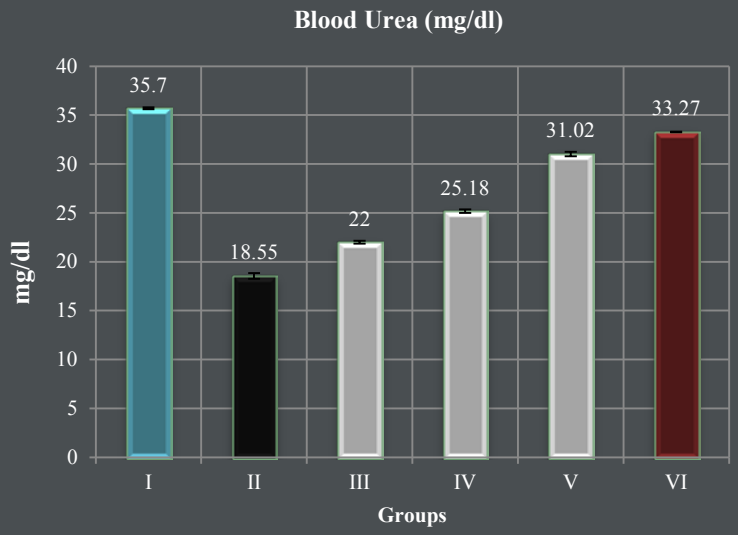


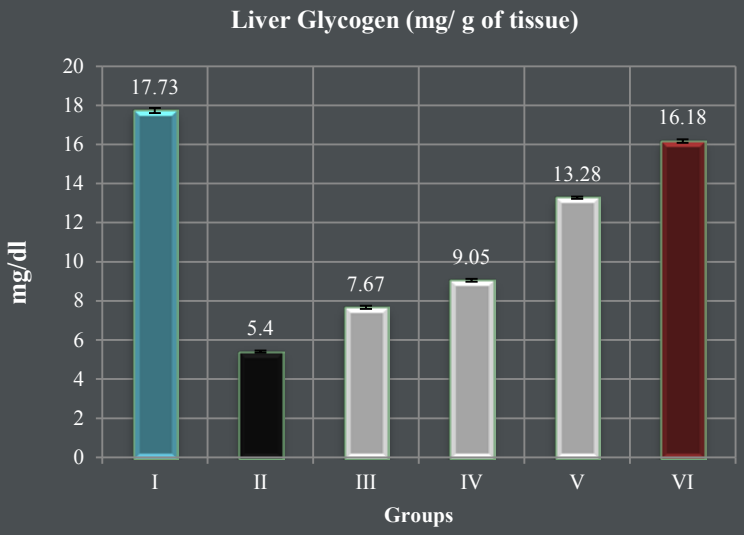
Values are Mean±SE, n = 6; * p<0.001 statistically significant when compared with Group I;
Statistically significant when compared to EAC control group; ap < 0.05, bp < 0.01, cp < 0.001.

Effect of *Ei*L-AgNPs on Biochemical Parameters of Experimental Swiss Albino Mice



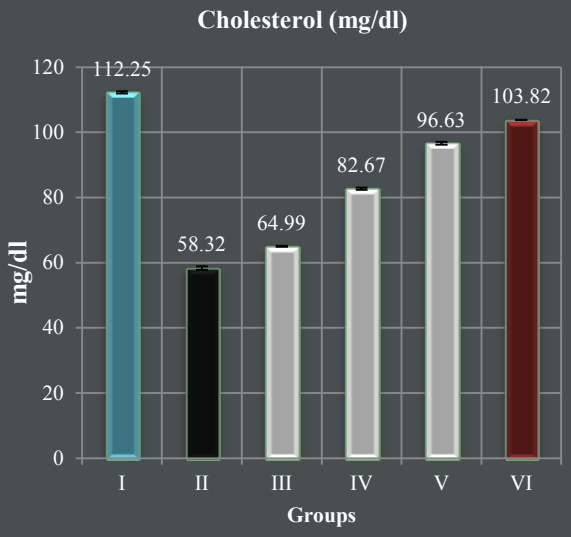


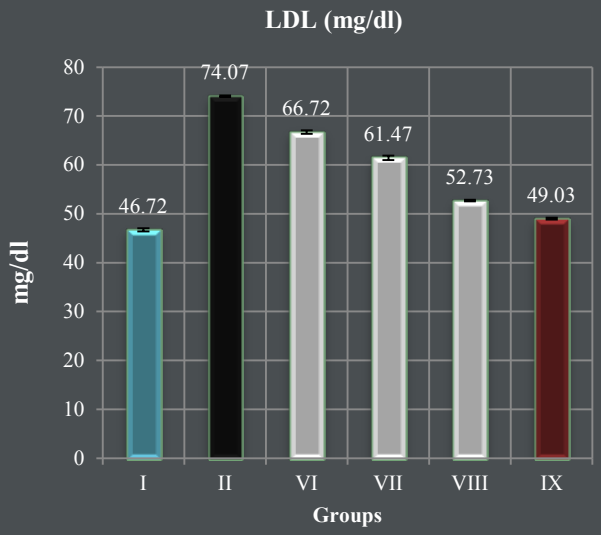


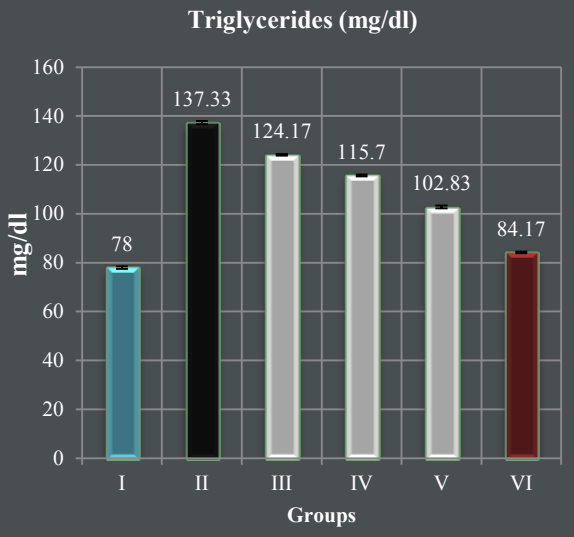


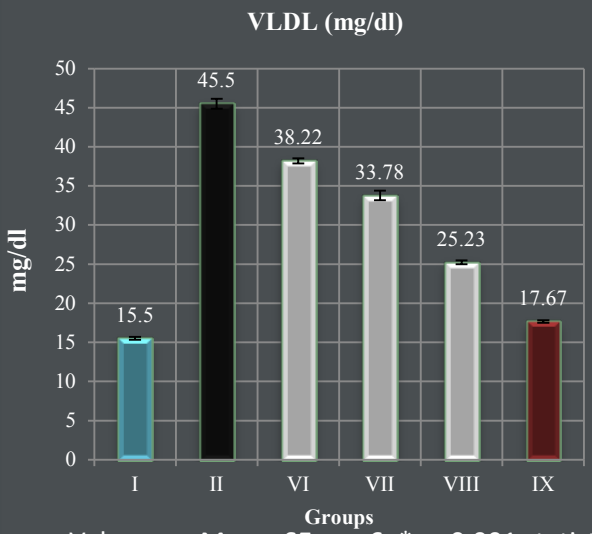
Values are Mean±SE, n = 6; * p<0.001 statistically significant when compared with Group I;
Statistically significant when compared to EAC control group; ap < 0.05, bp < 0.01, cp < 0.001.

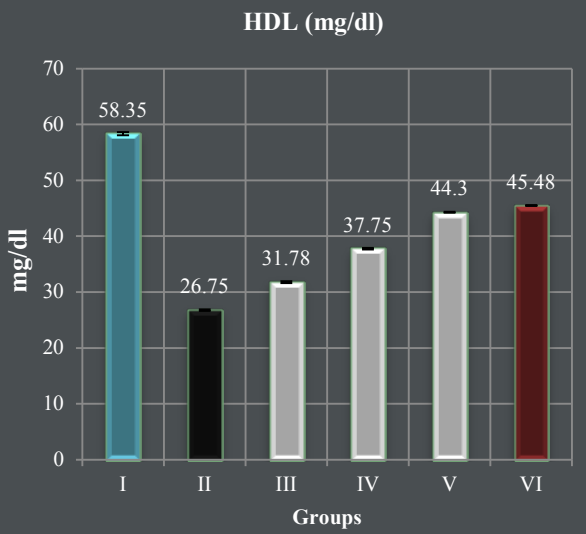
Effect of *Ei*L-AgNPs on Lipid Profile of Experimental Swiss Albino Mice











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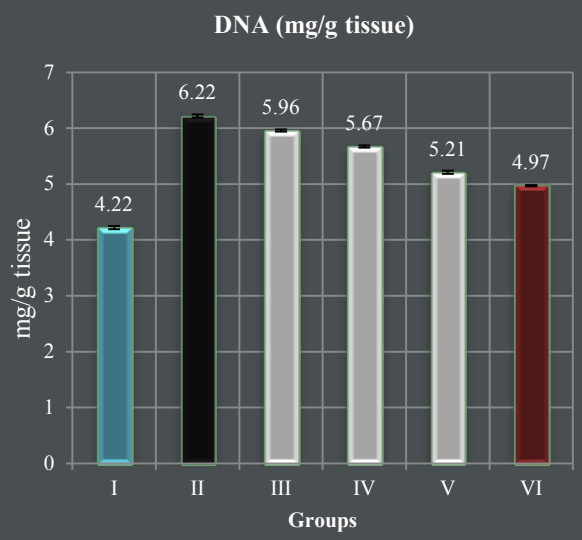
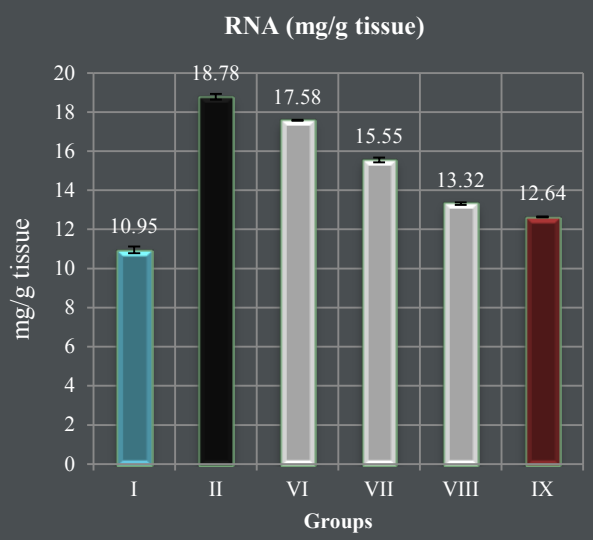
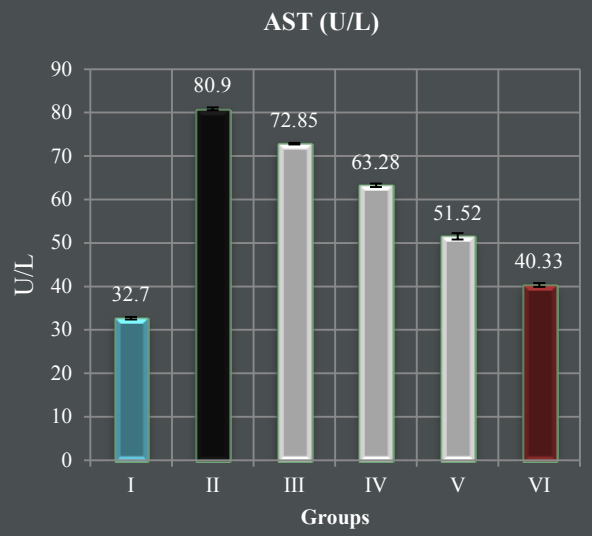
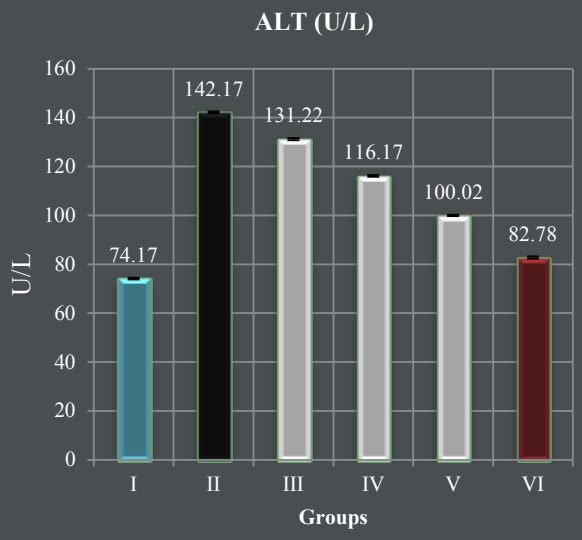
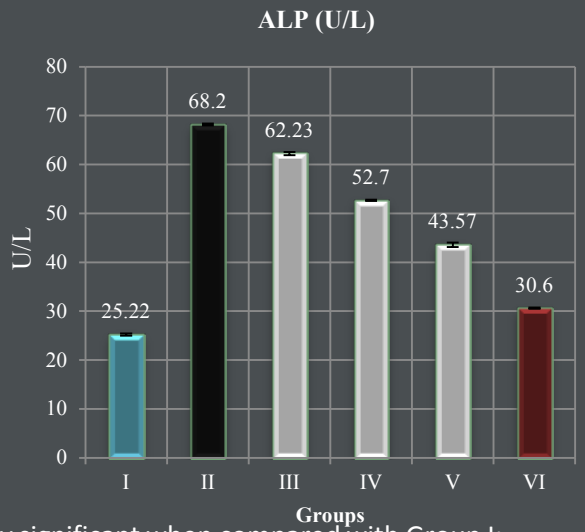
Effect of *Ei*L-AgNPs on Nucleic acids & Hepatic Enzymes of Experimental Swiss Albino Mice

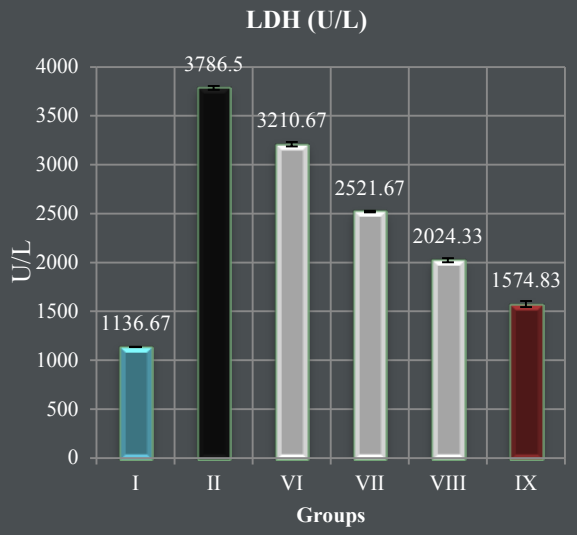






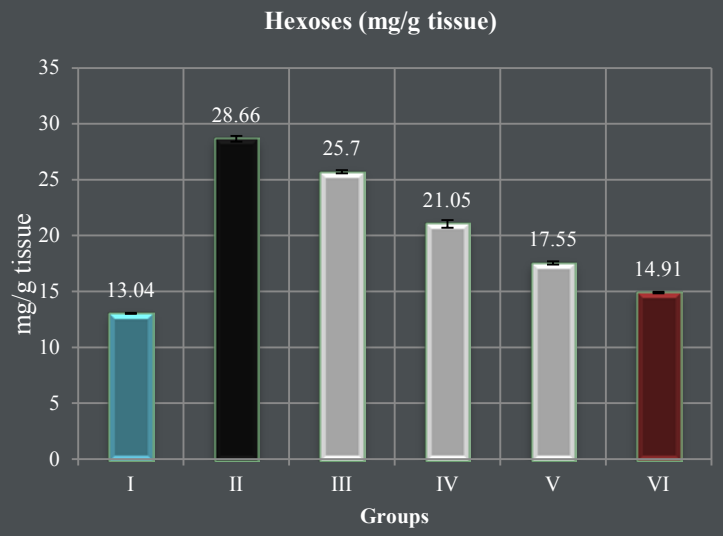


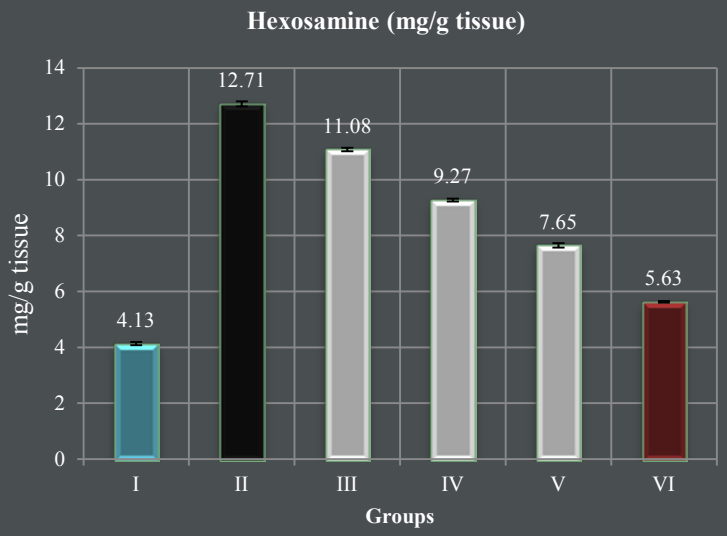


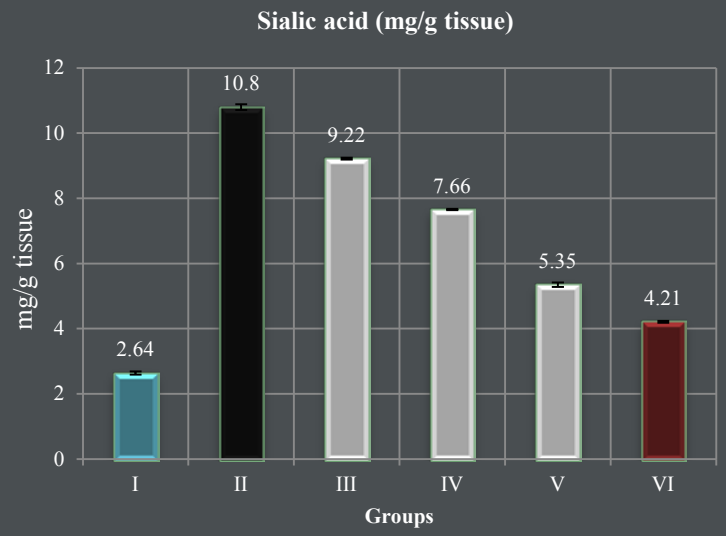


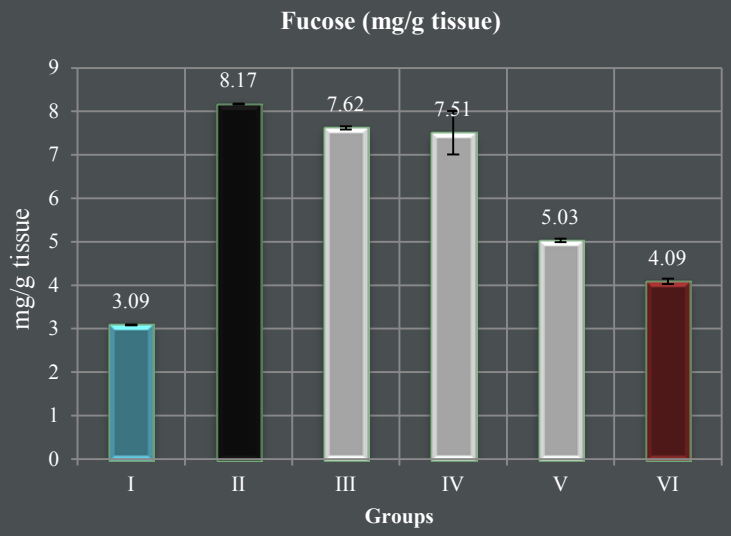
Values are Mean±SE, n = 6; * p<0.001 statistically significant when compared with Group I;
Statistically significant when compared to EAC control group; ap < 0.05, bp < 0.01, cp < 0.001.

Effect of *Ei*L-AgNPs on Membranes Bound Proteins of Experimental Swiss Albino Mice



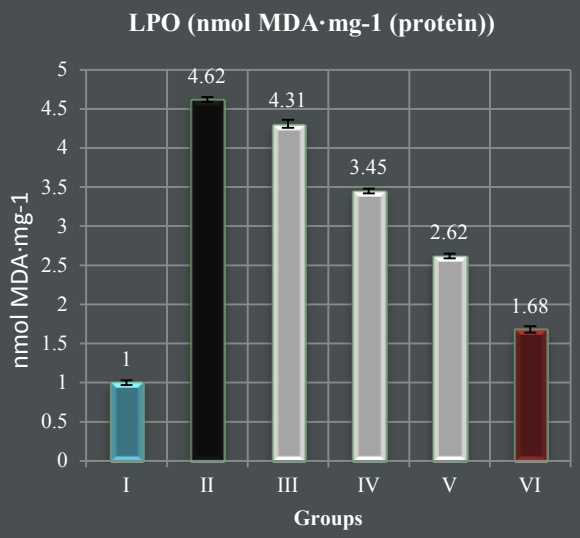


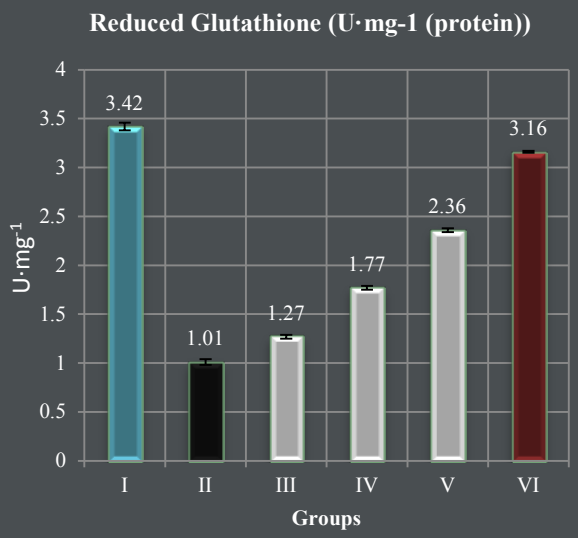


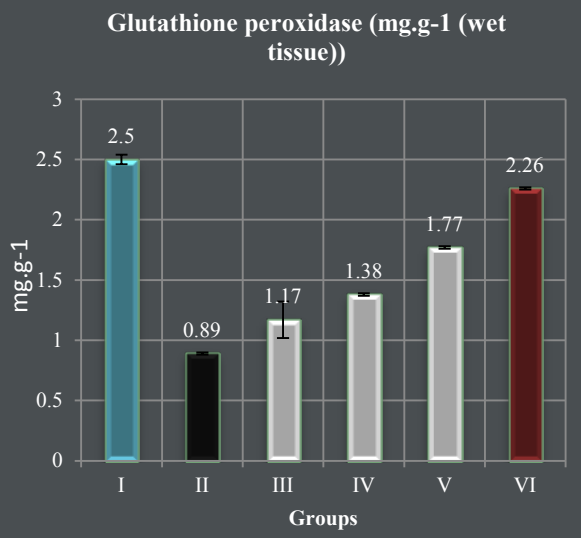


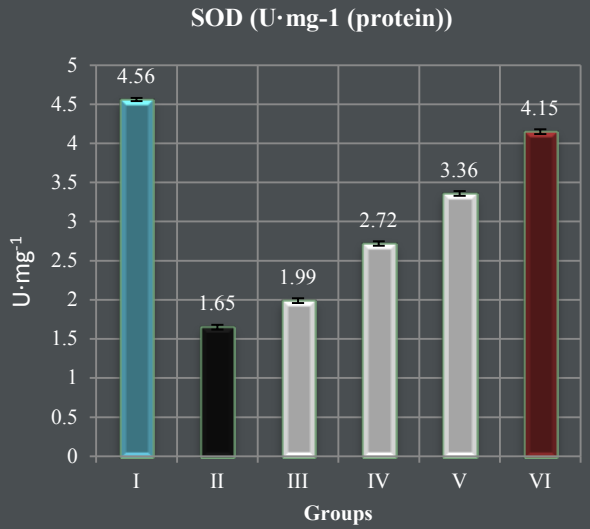
Values are Mean±SE, n = 6; * p<0.001 statistically significant when compared with Group I;
Statistically significant when compared to EAC control group; ap < 0.05, bp < 0.01, cp < 0.001.

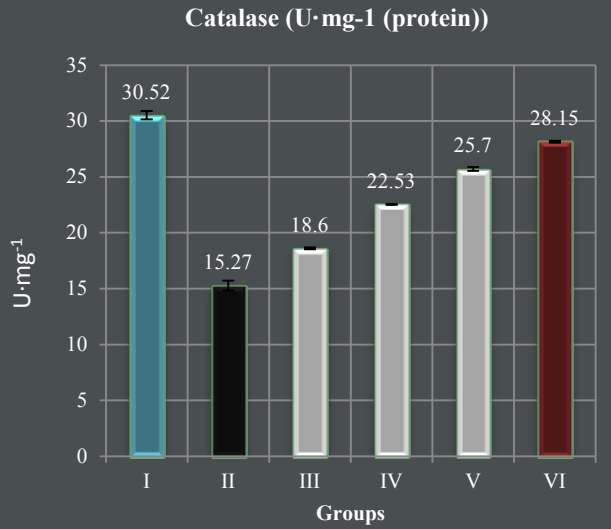
Effect of *Ei*L-AgNPs on Antioxidant Proteins of Experimental Swiss Albino Mice











Values are Mean±SE, n = 6; * p<0.001 statistically significant when compared with Group I;
Statistically significant when compared to EAC control group; ap < 0.05, bp < 0.01, cp < 0.001.

SUMMARY

- The silver nanoparticles were synthesised and characterized using *E. indica*.
- *In vitro* cytotoxic effect was examined using MTT Assay (HT 29 cells).
- Toxicity study was carried out to identify toxic effects of *Ei*L-AgNPs on swiss albino mice.
- Anticancer study was carried out to examine the cytotoxic potentials of EiL-AgNPs in EAC bearing mice.

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THANK YOU

Etiological spectrum of hepatitis and prevention of complications in general medicine patients

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Specialist in infectious diseases, SSIUH
shanatol@mail.ru

Abstract

Background: Liver diseases are highly prevalent in patients undergoing health check-up in Cambodia. The data on general population affected with liver pathology remains to be scarce. Chronic liver diseases are associated with risks of developing cirrhosis and hepatocellular carcinoma. This descriptive study was designed to investigate the etiological spectrum of liver diseases and prevention of complications in the department of internal medicine in Sen Sok International University Hospital (SSIUH) in Phnom Penh.

Methods: Clinical data and blood samples were analyzed in 521 patients visiting infectious diseases and general medicine clinics in SSIUH from 2015 to 2017. The mean age of the patients was 45.3±0.8 years, and 50.5% were males. 74.3% patients were Cambodians. Biochemical profile and serology data were used in the study. Additionally, the follow-up regularity was analyzed in different groups of patients.

Results: Out of the whole (n=521), 46.4% were diagnosed with having liver pathology, 27.3% had abnormal liver function tests. Almost 60% of patients with various liver diseases suffered from viral hepatitis. All viral hepatitis cases were chronic. Chronic hepatitis B was diagnosed in 60.3%, chronic hepatitis C in 34.1% of cases. One single positive serological marker HBcoreAB was found in 12 patients (8.3%). Toxic liver was diagnosed in every 7th patient, steatohepatitis in every 8th patient, biliary disorders in every 12th patient. Reactive hepatitis (5%) was found in cases of dengue, acute viral respiratory infections and in herpetic infections. 25.3% were treated in in-patient department, 74.7% were out-patient. Only 48.9% of patients with viral hepatitis came for follow-up regularly or occasionally despite therapeutic patient education provided initially. The highest adherence to treatment was noted in chronic hepatitis C patients receiving direct-acting antivirals.

Conclusion: The prevalence of liver diseases, including viral hepatitis, is high in patients visiting general medicine doctors for various reasons. A clinician should as well be aware of patients suffering from occult hepatitis B infection, steatohepatitis, metabolic syndrome, and reactive hepatitis in different infections and conditions. All of the mentioned above cases required regular follow-up in view of possible complications. The number of patients, coming back for follow-up, remains to be low. Only 1 in 5 patients diagnosed with liver pathology came back for a regular follow-up in order to monitor laboratory parameters and to discuss further management. The highest adherence to further treatment and monitoring was found in the group of viral hepatitis patients. Therapeutic education sessions with patients and their families are essential to improve adherence, quality of life, and to decrease the risks of severe outcomes and complications.

Keywords: Liver disease, cirrhosis, hepatocellular carcinoma, prevention.

មន្ទីរពេទ្យ សាកលវិទ្យាល័យ អន្តរជាតិ សែនសុខ

SEN SOK INTERNATIONAL UNIVERSITY HOSPITAL

Etiological spectrum of hepatitis and prevention of complications in general medicine patients

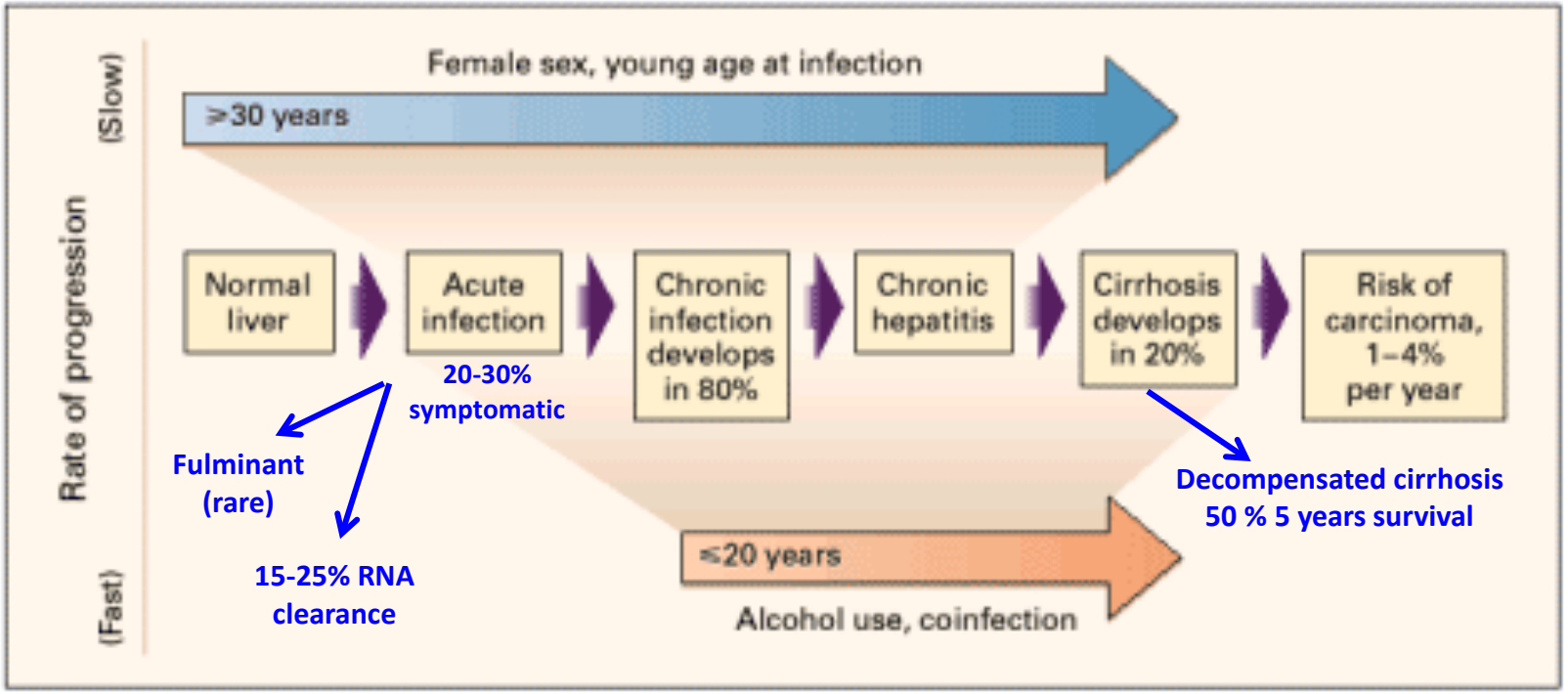
Anatoly Shevaldin MD PhD
Infectious diseases

Phnom Penh
2018

Hepatitis B

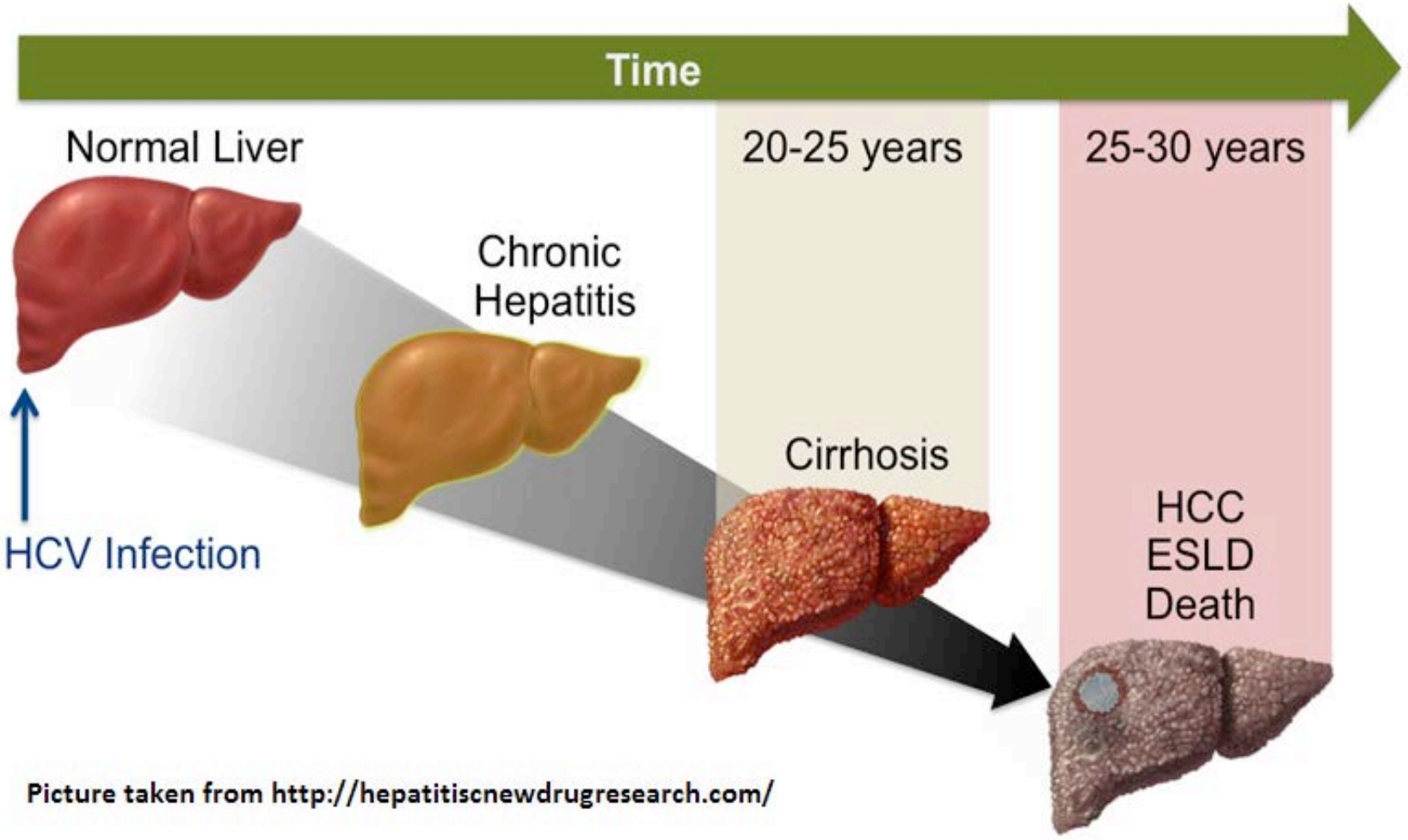
- 15-25% of people with chronic hepatitis B will develop serious chronic liver disease (CHB)
  - Active (replication), immune tolerance (20%)
    - HBeAg+, DNA↑, LFT (N)
  - Inactive (integration), immune control (80%)
- 1 in 10 people with cirrhosis will develop HCC
- 60-80% of liver cancer patients have HBV or HCV
- 1 in 100 adults with acute HBV infection can develop fulminant liver failure
- 2 people die each minute from hepatitis B outcomes

Natural History of HCV Infection and Its Variability From Person to Person



www.medscape.com

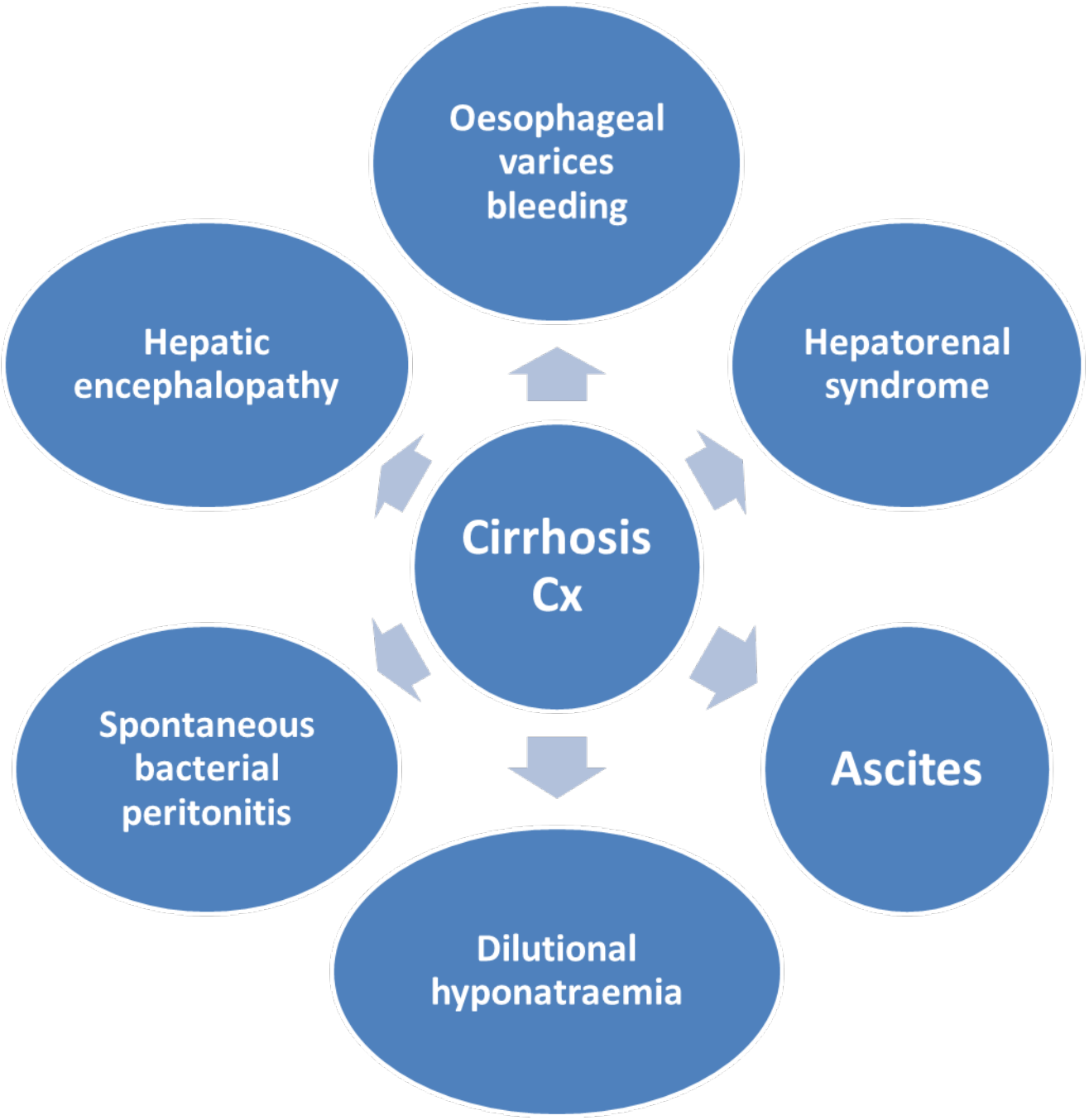
Hepatitis C

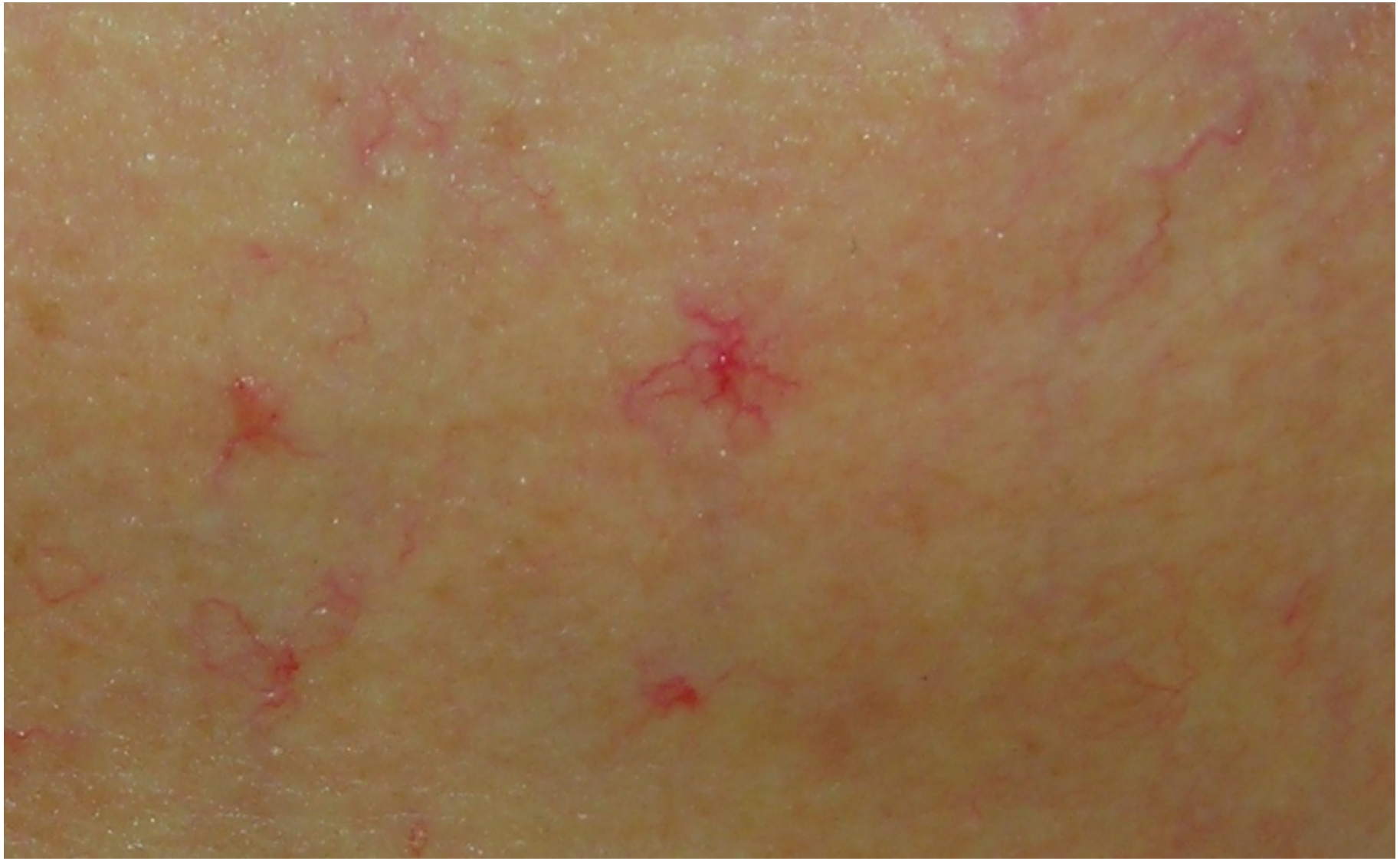


Picture taken from http://hepatitiscnewdrugresearch.com/

Viral hepatitis complications

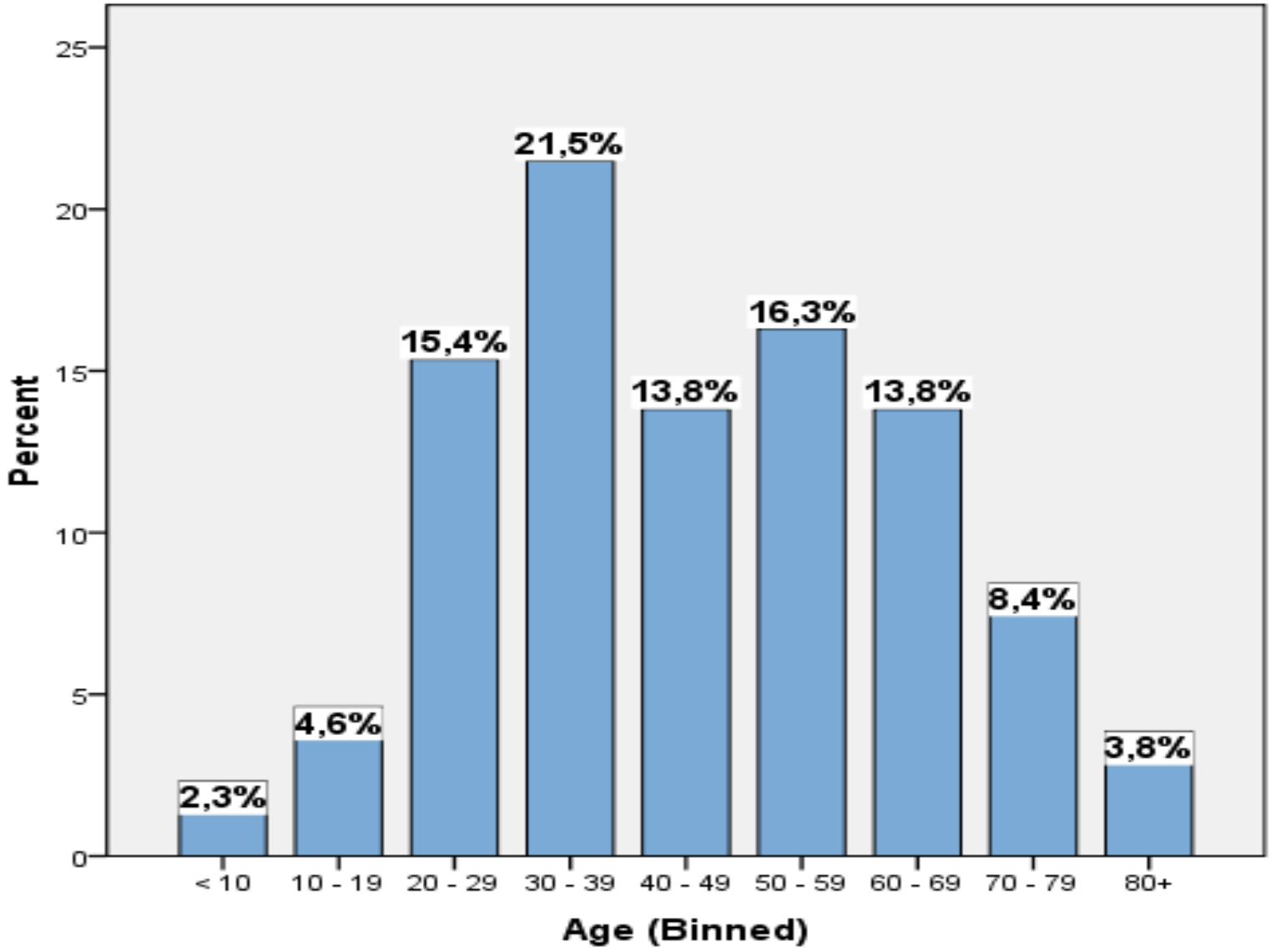
- Liver failure
- Fulminant liver failure
- Biliary diseases
- Cirrhosis
- Hepatocellular carcinoma
- Decompensating co-morbidities


Oesophageal varices bleeding
Hepatorenal syndrome
Ascites
Dilutional hyponatraemia
Spontaneous bacterial peritonitis
Hepatic encephalopathy
Cirrhosis Cx

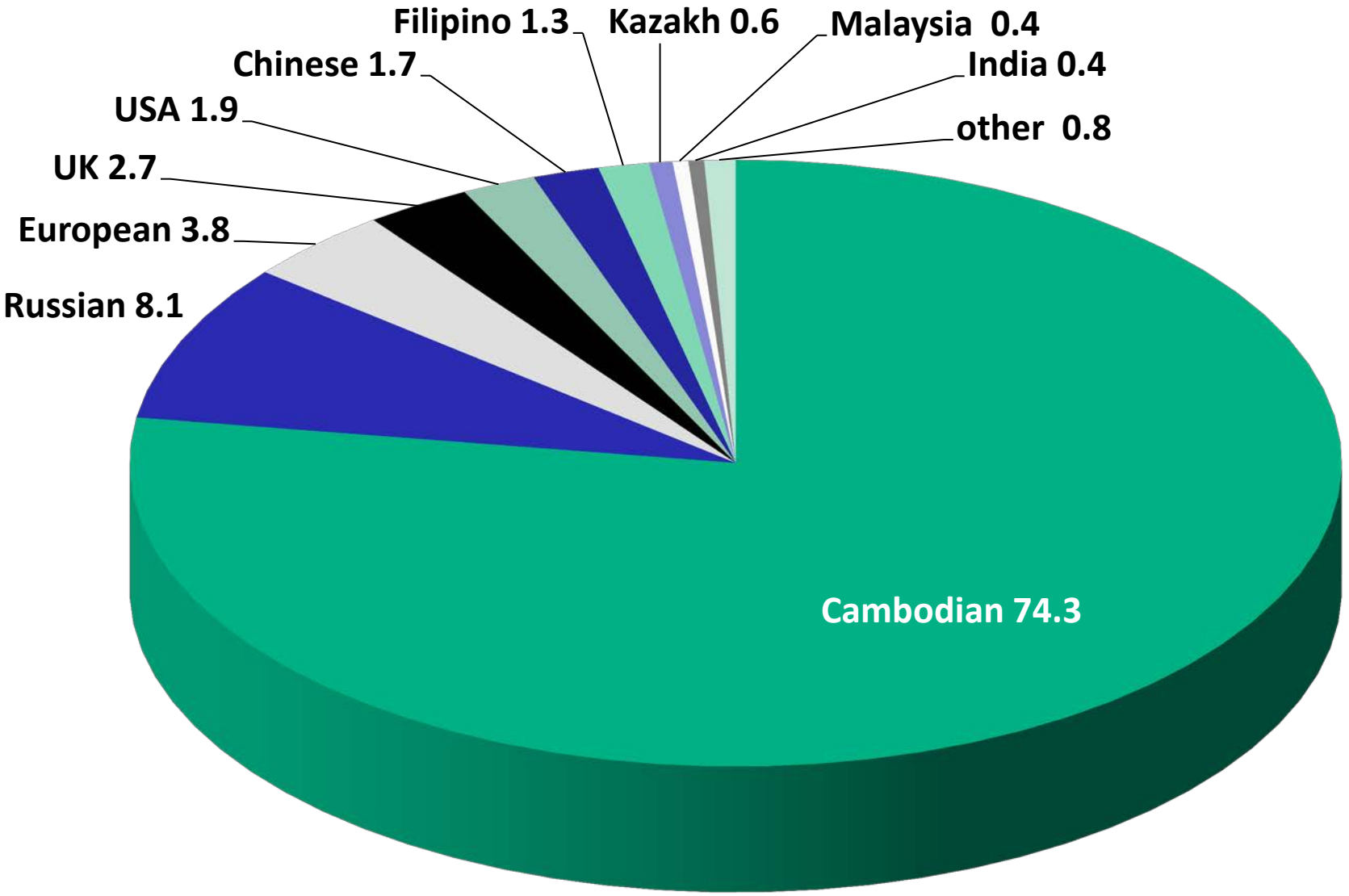


General information

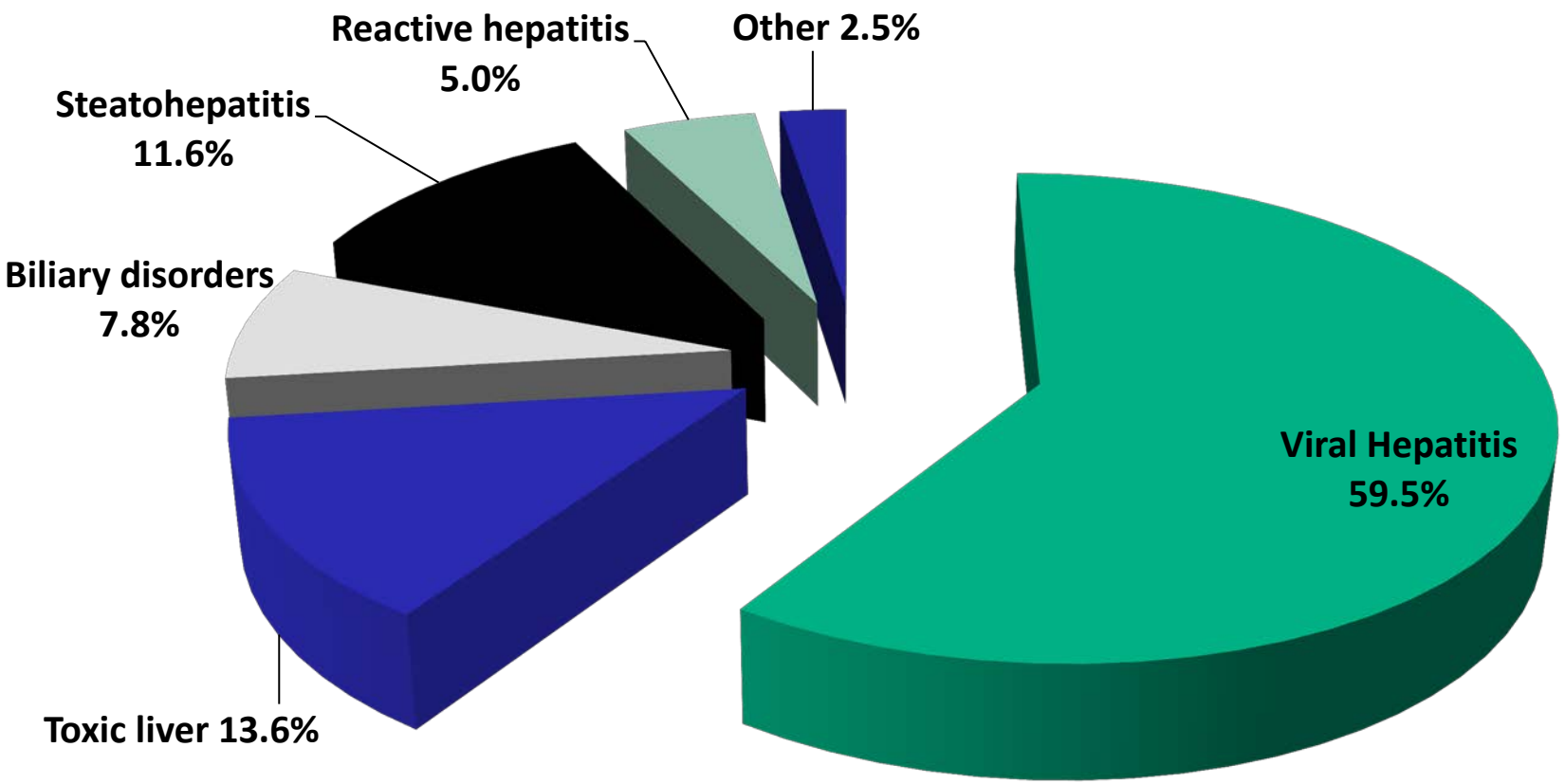
- n=521 patients
- Age 45.3±0.8 years (1-90)
- Males 50.5%, females 49.5%
- IPD 25.3%, OPD 74.7%
- Forms of severity:
  - Mild 43.4%
  - Moderate 41.1%
  - Severe 12.9%
  - Critical 2.5%



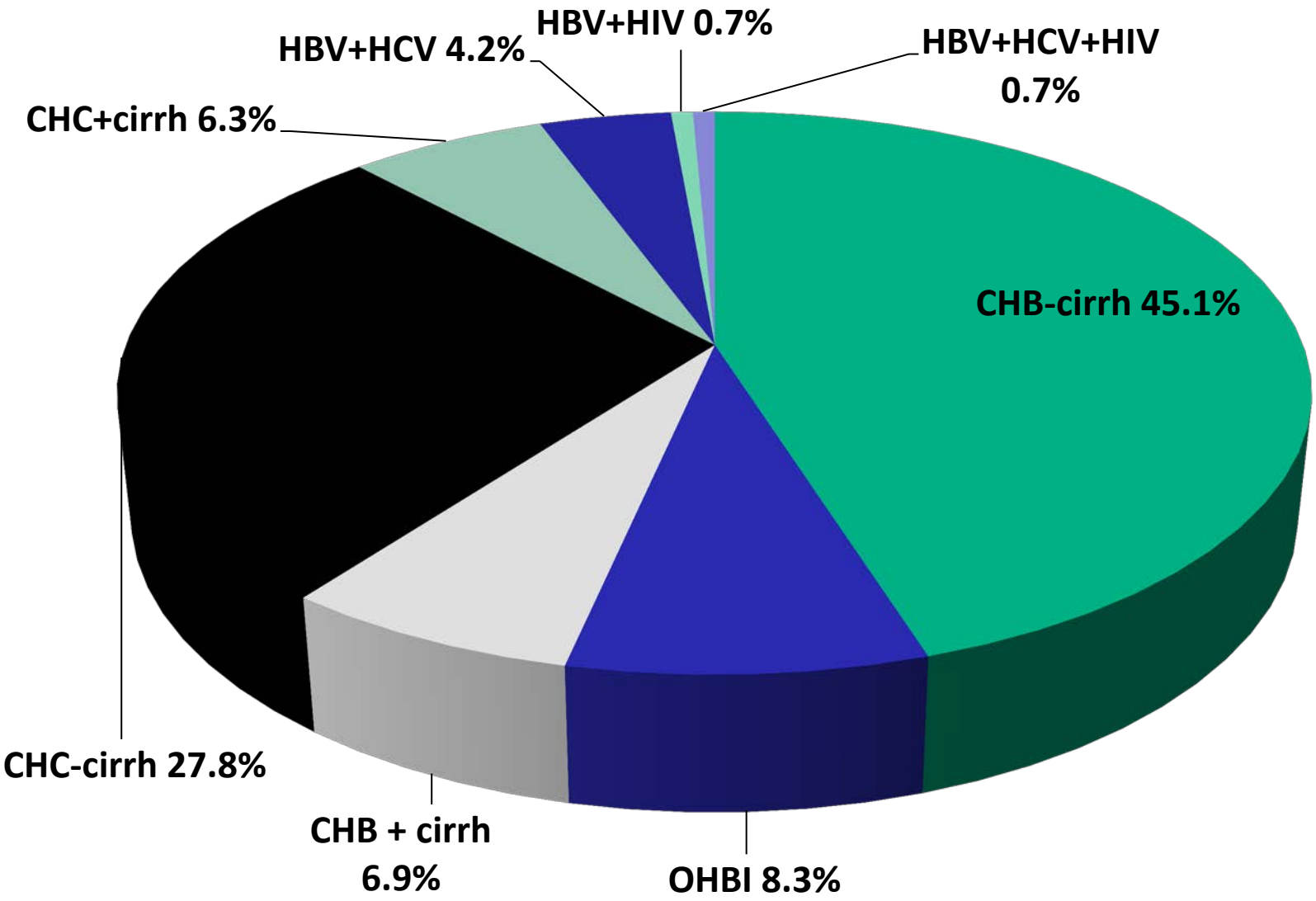
Age 45.3±0.8 years (1-90)


Filipino 1.3
Kazakh 0.6
Malaysia 0.4
Chinese 1.7
India 0.4
USA 1.9
other 0.8
UK 2.7
European 3.8
Russian 8.1
Cambodian 74.3

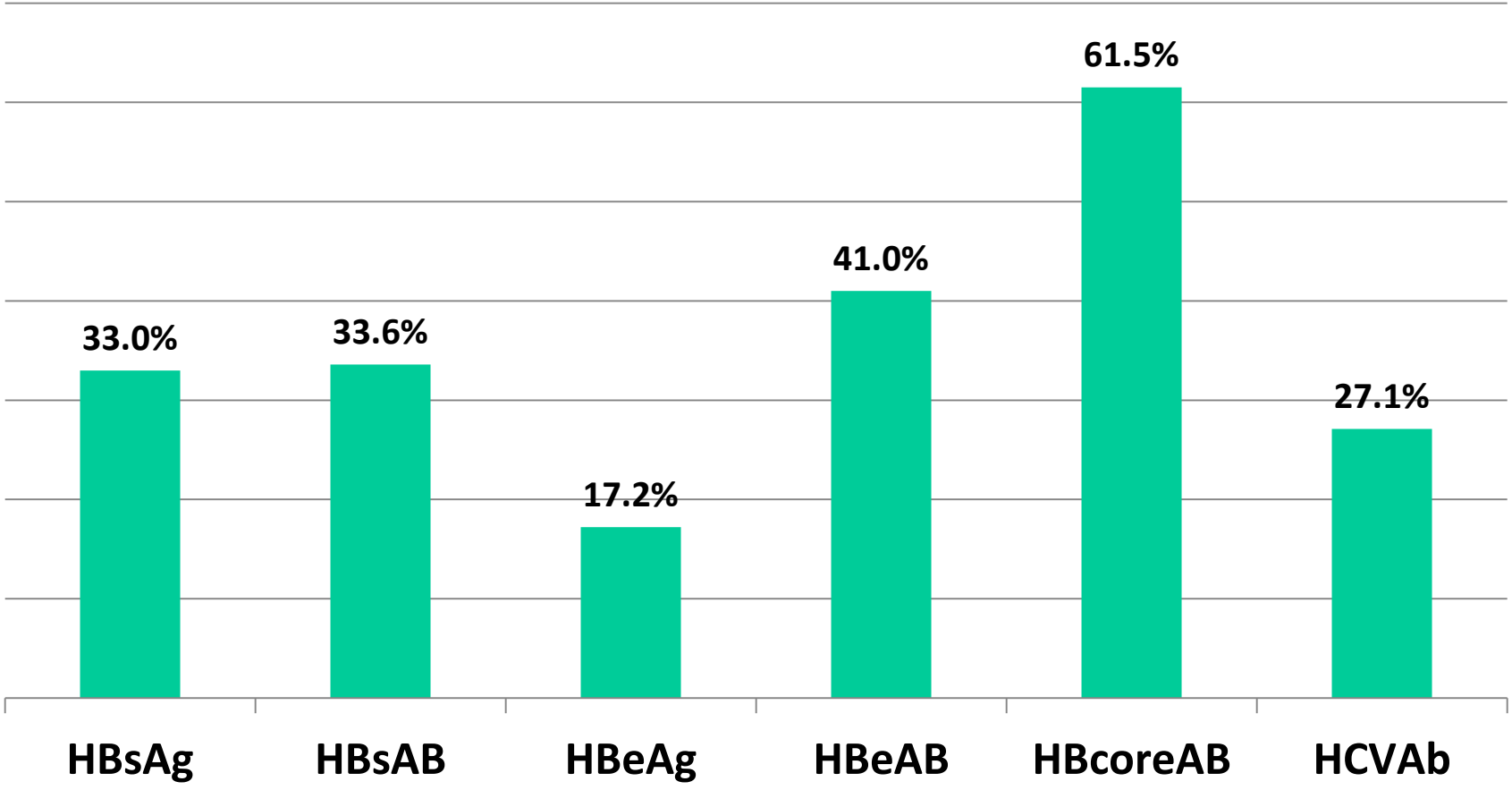
Structure of liver clinic cases (n=242)



Structure of viral hepatitis cases (n=144)



Serological profile in liver patients



Hepatitis B spectrum

- **Acute hepatitis B**
  - Disappeared from daily practice – vaccination
- **Chronic hepatitis B**
  - Immune tolerant phase (HBeAg+) 17.2%
  - Immune control phase (HBeAB+) 41%
- **Occult hepatitis B** (HBsAg-, HBcorAB+, HBsAB-)
  - Must not donate blood or organs
  - Family members vaccination recommended
  - Hepatitis B Vaccine is ineffective in OHBI patients
  - Regular follow-up is a

OHBI

- n=12
- HBsAg-, HBsAB-, **HBcoreAB+**, HBeAg-, HBeAB-

- AST 86.0±47.78 (21-560)
- **ALT 76.82±42.26 (11-495)**
- Tot bil 1.09±0.17 (0.50-1.60)
- **GGTP 137.25±84.53 (19-385)**
- AP 184.67±55.77 (123-296)

- **Persistence of low-level HBV may contribute to HCC development!**

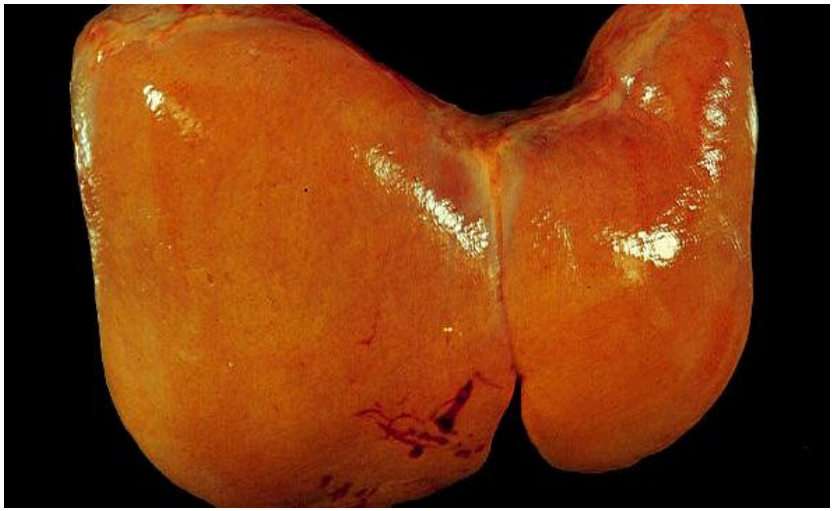
Biochemical profile in liver patients (n=242)

- 27.3% abnormal liver function tests

- AST 74.81±9.27 (11-1408)
- **ALT 63.81±4.76 (11-495)**
- Tot bil 1.75±0.33 (0.3-39)
- **GGTP 110.97±14.49 (11-1097)**
- AP 183.15±16.38 (102-428)

Hepatic cytolysis syndrome

- CHB, CHC, CHB+CHC, +/-HIV
- Herpetic infections (HSV, EBV, CMV)
- Cholestatic conditions
- Toxic liver (medications, alcohol)
- Fatty liver (NAFLD, ArLD)
- Steatohepatitis
- Congestive hepatopathy
- Dengue
- Syphilis
- Parasitosis (liver flukes)
- Autoimmune hepatitis



http://www.pathguy.com

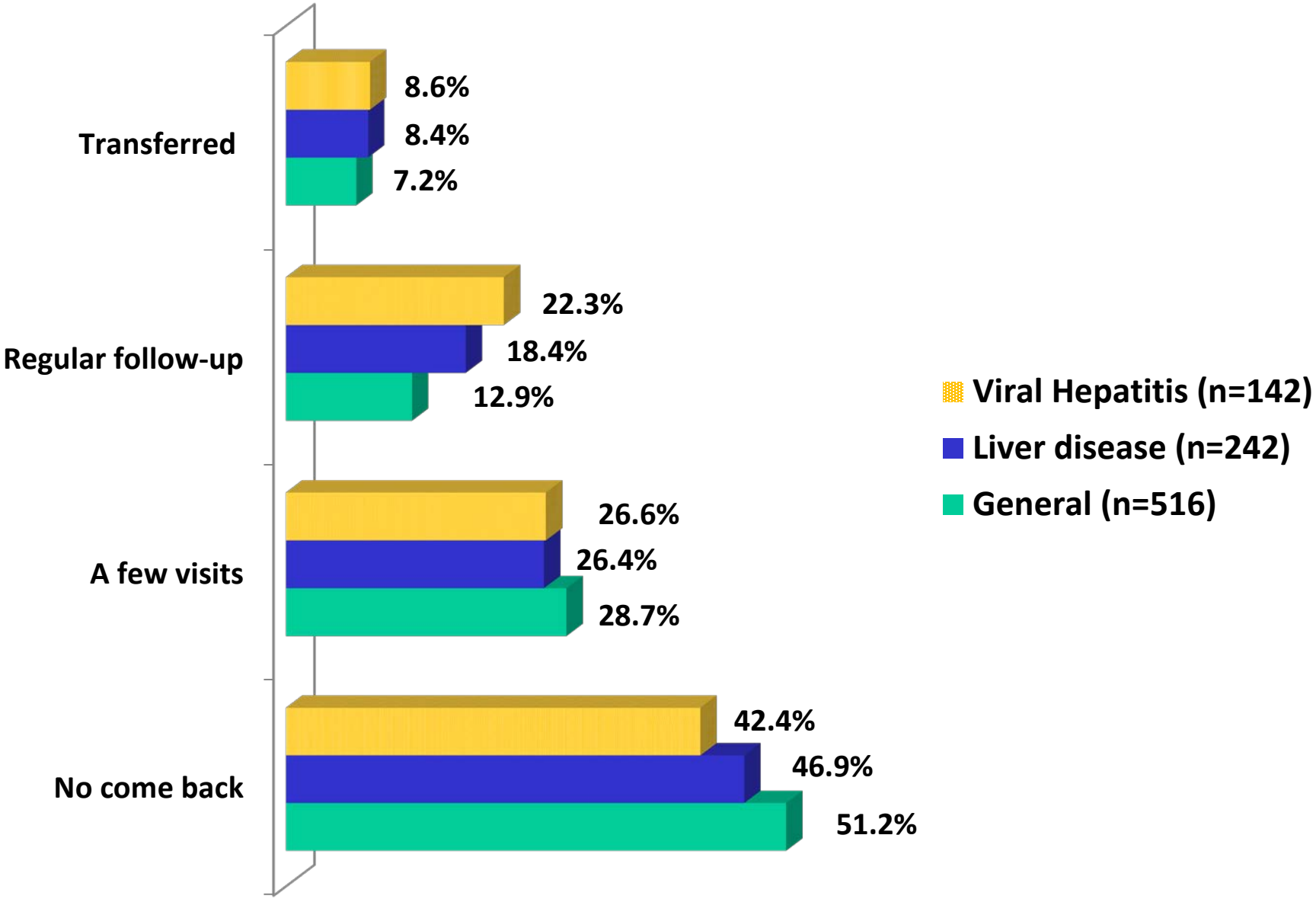
- **Adherence** refers to how closely the patient follows the treatment regimen as recommended by the doctor

- Calendars for visits
- Laboratory control including virology
- Regular ultrasound scan
- Fibroscan annually
- EGD in cirrhotic stage

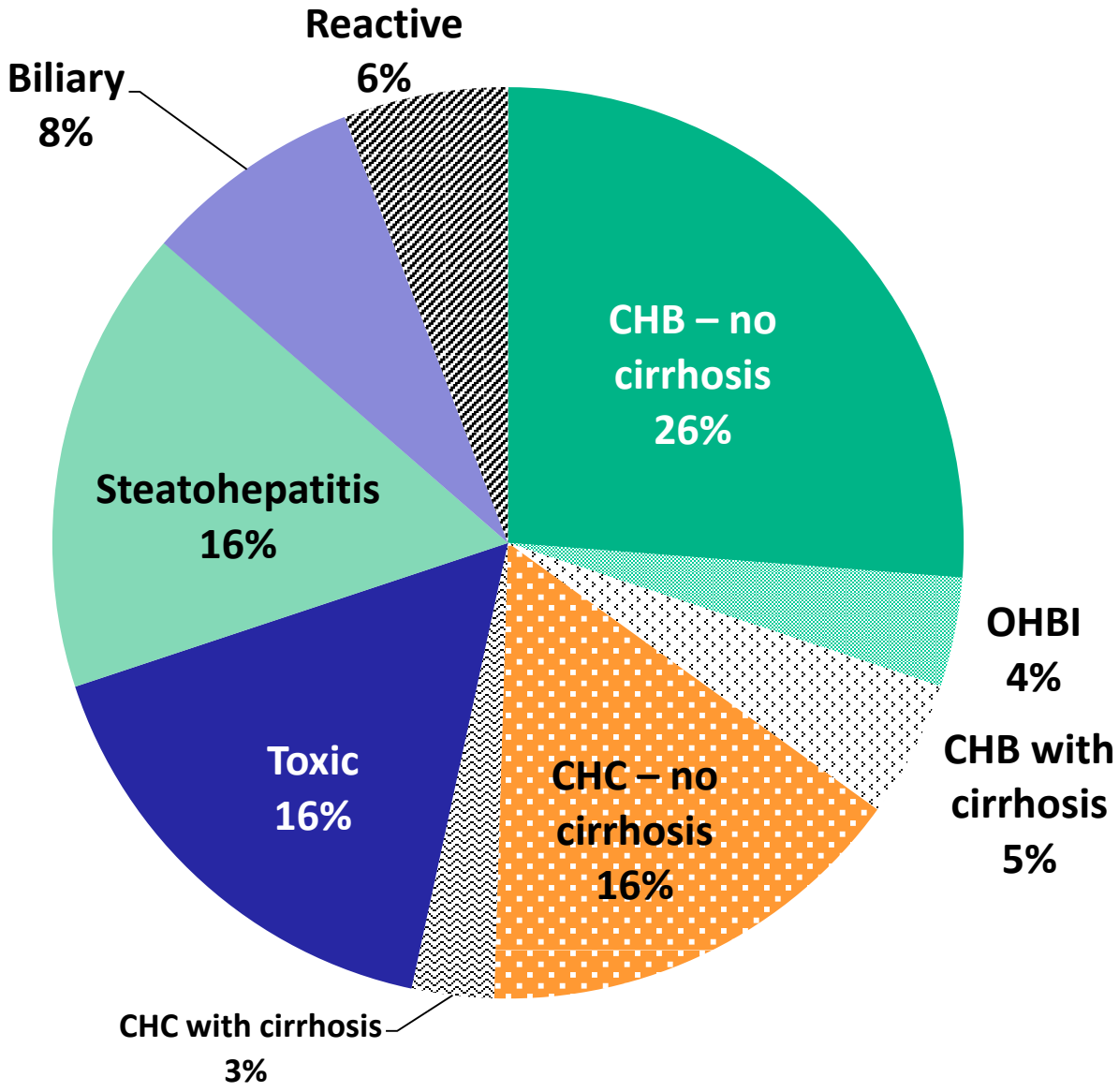
Therapeutic education

- Continuous process
- Nature of disease, transmission, outcomes, complications (cirrhosis, HCC)
- Factors that aggravate liver disease, co-morbidities, potential addictions, obesity, metabolic syndrome, diabetes etc.
- Diet, occupational hazards, emotional support
- **Health** as a well-being in all domains of life (physical, mental, emotional, social, spiritual) – not just absence of disease

www.healthsearchoonline.com


Transferred
8.6%
8.4%
7.2%
Regular follow-up
22.3%
18.4%
12.9%
A few visits
26.6%
26.4%
28.7%
No come back
42.4%
46.9%
51.2%
Viral Hepatitis (n=142)
Liver disease (n=242)
General (n=516)

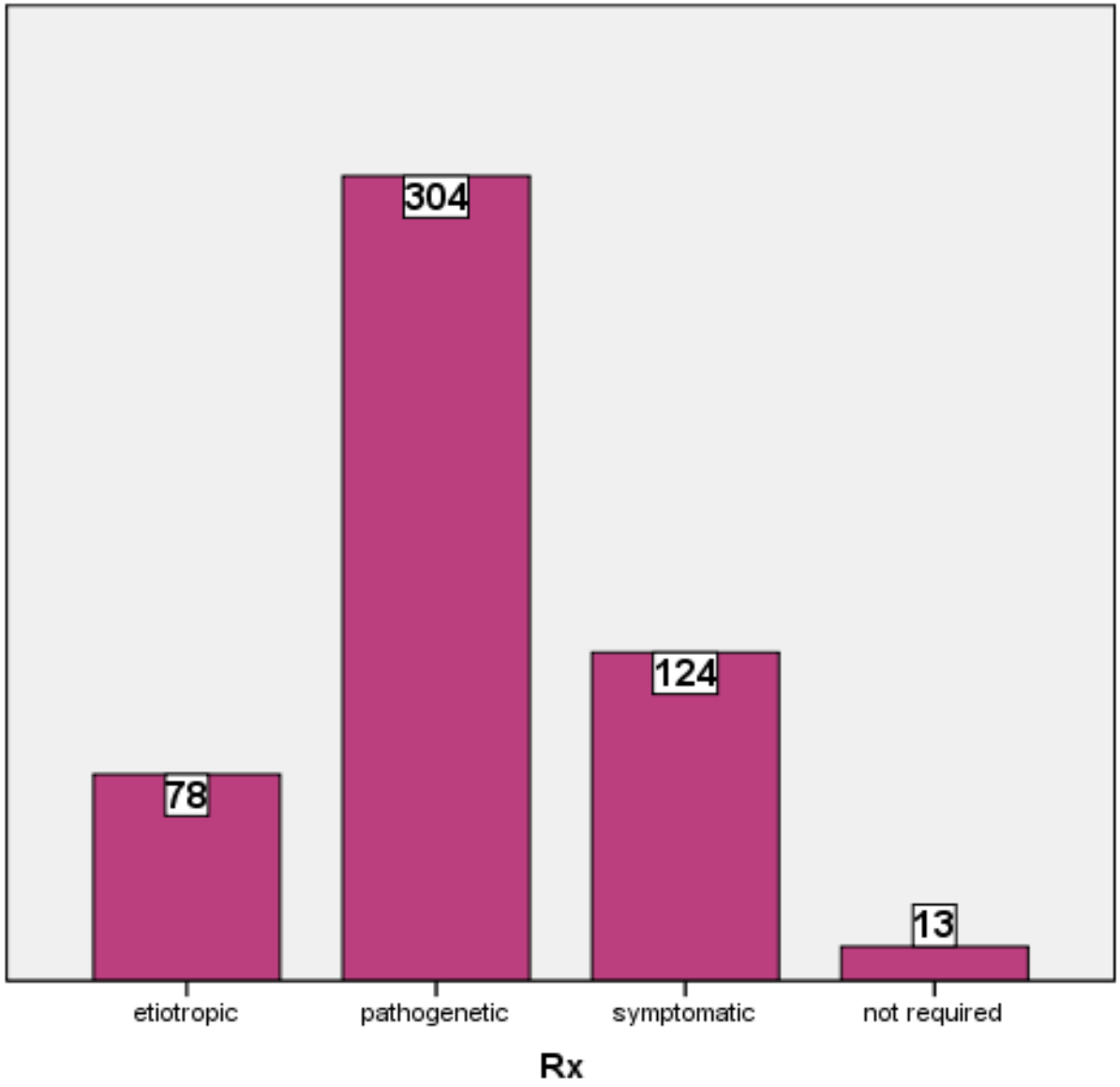
Failure to follow-up (liver patients)

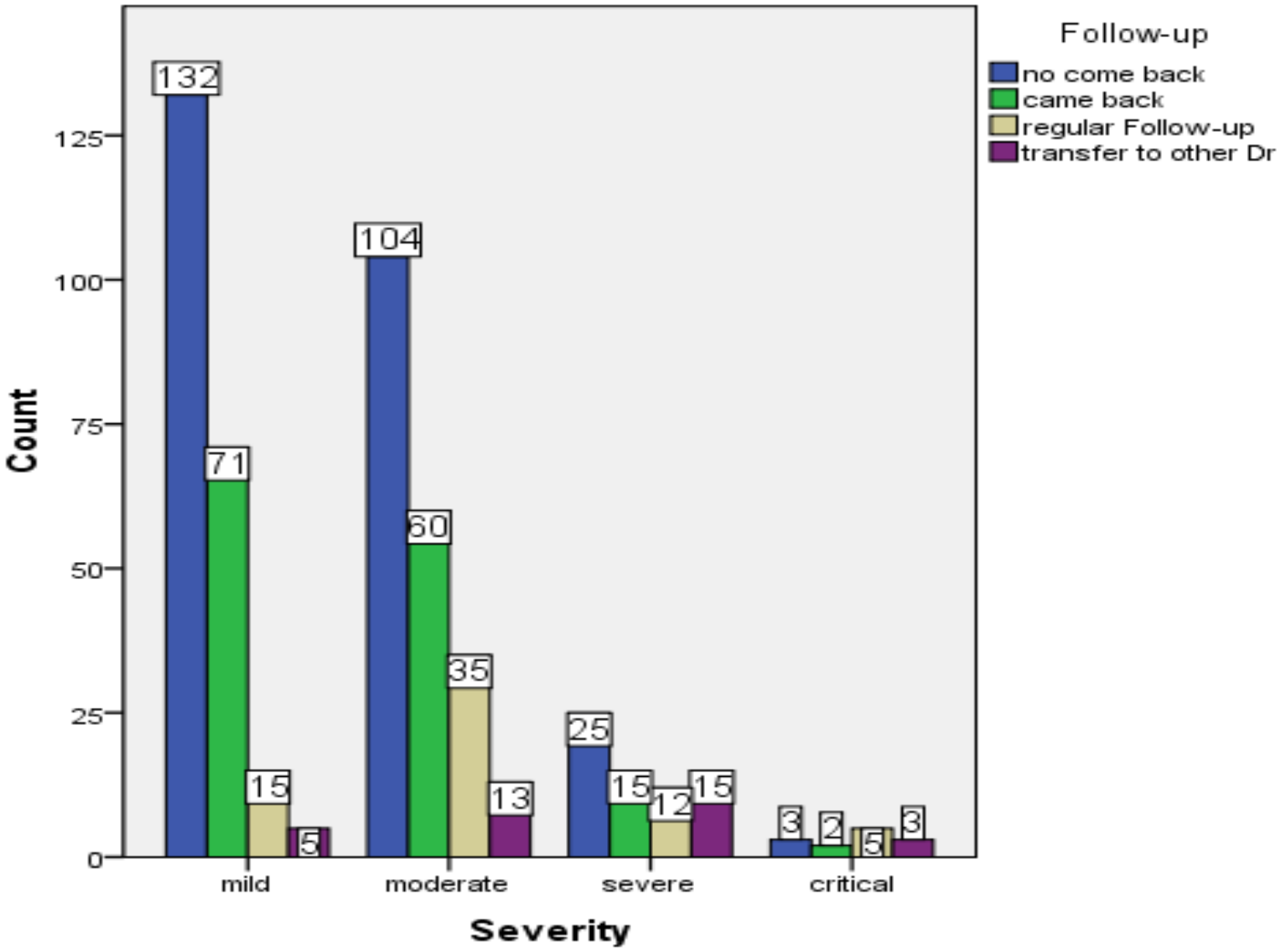


Follow-up correlations

- Positive correlation between age and follow-up ($R=0.125$, $p<0.0004$)
- There is no gender and follow-up frequency correlation ($p>0.5$)
- Correlation between severity and more specific treatment regimen option ($R = -0.137$, $p=0.002$)
  - Etiotropic 20.7%
  - Pathogenetic 63.5%
  - Symptomatic and supportive 13.7%
  - No treatment required 2.1%
- Severity of illness and follow-up frequency ($R=0.292$, $p<0.0001$)

Treatment regime




Follow-up
no come back
came back
regular Follow-up
transfer to other Dr
Count
0
25
50
75
100
125
132
71
15
5
104
60
35
13
25
15
12
15
3
2
5
3
mild
moderate
severe
critical
Severity

Follow-up linear regression

- Follow-up and severity values:
  - R=0.292, p<0.001
  - R square = 0.086
    - Only 8.6% patients follow-up is dependent on severity of illness
    - Hence, not very close relation between variables (other factors matter: age, finances, personal etc.)
  - B=0.351 (Severity)
    - Expected follow-up regularity to increase by 0.351 if severity is increased by 1 point

How to stop the progression of liver disease

- Lifestyle recommendations
- Early investigation & treatment (AVT)
- Treatment of co-infections (B+C, B+D, B+C+HIV)
- Treatment of co-morbidities
- Liver transplantation

Preventing the outcomes

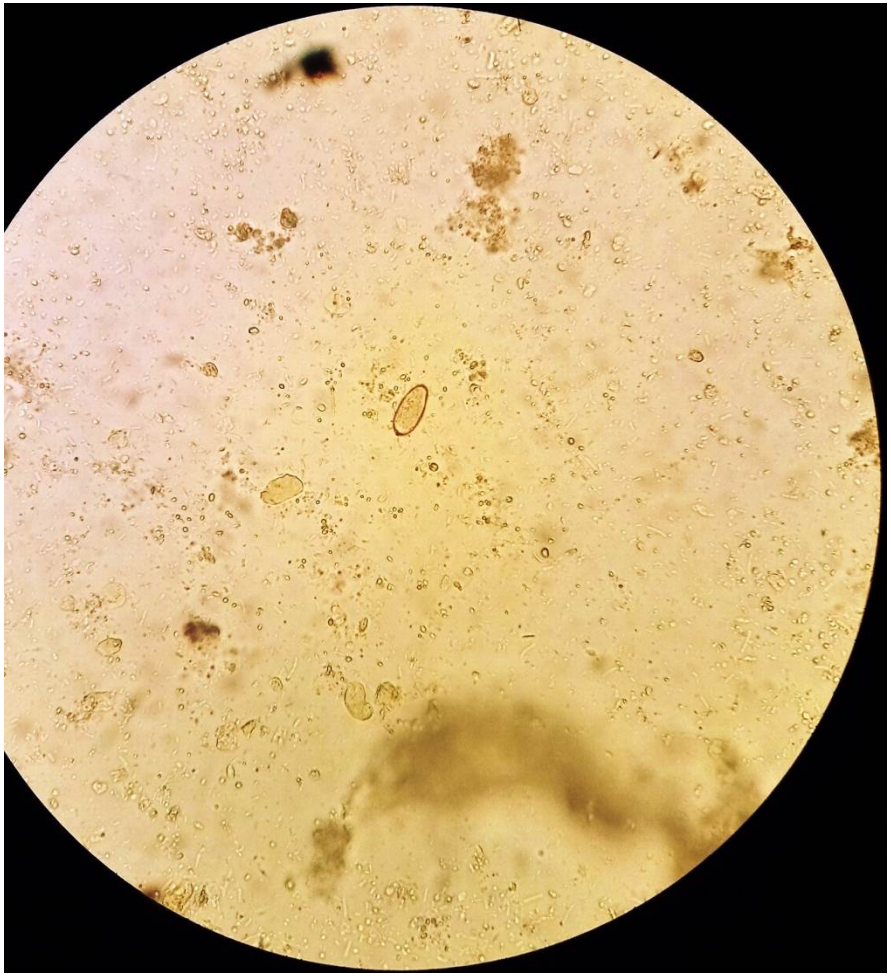
- **Early screening in acute hepatitis**
  - Suspicious syndromes
  - Risks of chronic form development
- **Hospital admission and treatment**
  - Full examination (inc. co-morbidities)
  - Consider toxic hepatitis
  - IV fluids & supportive measures
  - Suitable treatment selection
  - Follow-up
  - Lifestyle regular discussion

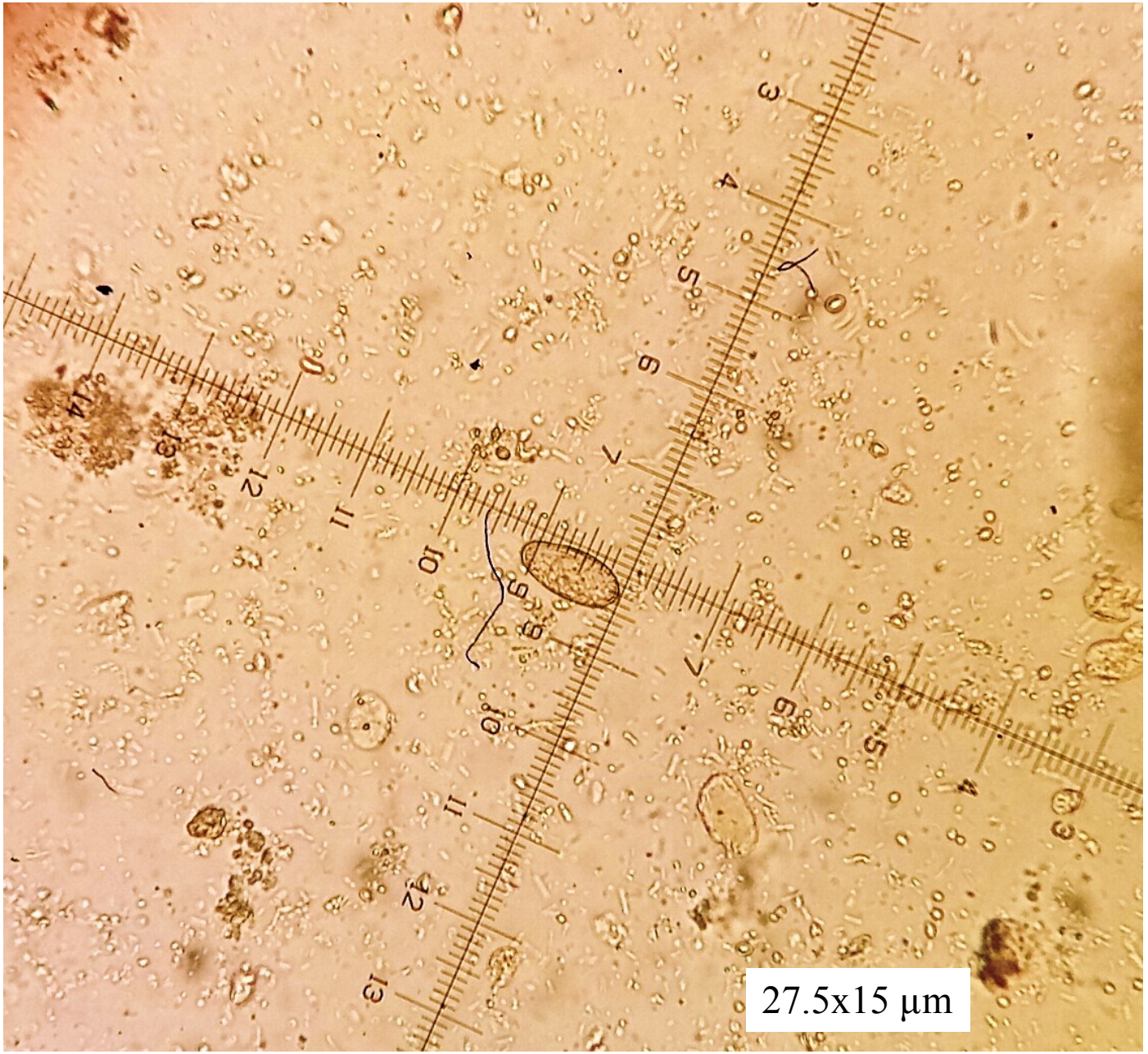
Preventing the complications

- **Biliary diseases**
  - Ultrasonography
  - Biochemical profile
  - Treatment & lifestyle measures
- **Liver failure**
  - Urgent admission
  - Alcohol restriction
  - Pathogenetic treatment in IPD
- **Liver fibrosis**
  - Early investigation (FibroScan, scoring systems MELD, UKELD)
  - Early treatment (supportive, NA, IFN+R, DAA)
- **Liver cirrhosis**
  - Early investigation
  - Frequent follow-ups
  - Early supportive treatment
  - Consider liver transplantation
- **HCC**
  - Oncomarkers as a routine
  - Medical imaging
  - Pathogenetic treatment
  - Control of co-morbidities
  - Oncological follow-up & treatment

Case

- Man, 35 yo, Khmer
- c/o: abdominal bloating, allergies for 15 years
- AST 38 U/L, ALT 71 U/L
- PLT 132→173→145
- Eos 0.75→1.56
- TGR 243, GGTP 292
- HBsAg+, HBcoreAB+, HBeAg-, HBeAB-, HBsAB-; HCVAb-, HIVAb-
- 3TC 100 OD (Jan.2016)
  - HBV-DNA 120,000 IU/mL → 0 IU/mL → 22,800 IU/mL
- TDF 300 OD (June 2018)




27.5x15 µm

Conclusions

1. The spectrum of cases managed in general medicine and infection clinic is highly diverse
2. Chronic hepatitis B patients are the majority in the liver clinic
3. Close monitoring is essential in “occult hepatitis B” patients
4. Co-morbidities require control
5. Regular follow-up with lifestyle and timely treatment corrections is important in prevention of complications

Antibiotic prophylactic therapy in open appendectomy-Summary

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Abstract

Background: The use of antibiotic prophylaxis before any surgery has evolved greatly in the last 20 years. In Cambodia, we are not sure about Antibiotic prophylaxis guideline, if it is applied to every hospital. In Sihanouk Hospital Center of HOPE (SHCH), Antibiotic Prophylaxis using guidelines are applied from its beginning, especially in surgical department, especially in open appendectomy procedure.

Methods: It is retrospective study of 1 year 2016 with 86 patients of open appendectomy is SD of SHCH. The main objectives of our study were to show the advantages of Antibiotic prophylaxis and study the effectiveness of Antibiotic prophylaxis in surgery, reduction of Antibiotic resistant and cost saving in surgical price for poor patients who need appendectomy.

Results: In our series, All patients without appendiceal perforation 78 (90.6%), their wound will check in D3 and remove sutures in D7 to D10. All these patients were used only 1 dose of Ceftriaxone 2g for Antibiotic prophylaxis. Only 1 case (1.2%), her wound was infected seen in D3 and need to managed by laying open the wound, wound toilet with normal saline, and loose packing of the wound daily followed by secondary closure. All patients who had appendiceal perforation with locale peritonitis 8 (9.3%), their wound is open with wet to dry dressing change daily followed by secondary closure or healing by secondary intention. Most of the patient is discharged home in D3 to

D5. The medium is D4. However, 6 (6.9%) of patients with locale peritonitis could stay in hospital till D14 because of their wound is infected. Their Antibiotic use is according to Gram Stain and Culture results. We noted that 2 (2. 3%) patients have adhesive occlusion and need re-laparotomy and adhesiolysis in later on. No mortality rate.

Conclusion: Single dose of preoperative antibiotics is adequate for prevention of postoperative infective complications in patients with non-perforated appendicitis undergoing open appendicectomy. Prolonging the use of antibiotics can lead to unnecessary antibiotic related complications such as longer hospitalization, higher costs and bacterial resistance.

Keywords: Antibiotic prophylaxis, surgery, guidelines, appendectomy, procedures.

Antibiotic Prophylaxis in Open Appendectomy

Preap Ley, M.D.

INTRODUCTION

- The use of antibiotic prophylaxis before any surgery has evolved greatly in the last 20 years for reducing postoperative wound infections, hospitalization duration and costs. Especially to minimize antibiotic resistant.

- In Cambodia, we are not sure about Antibiotic prophylaxis guideline, if it is applied to every hospital. In Sihanouk Hospital Center of HOPE (SHCH), Antibiotic Prophylaxis using guidelines are applied from its beginning, especially in surgical department.

- The predominant microbial flora associated with acute appendicitis are found and these microbes may cause postoperative wound infection depending on the degree of inflammation of appendix, surgical technique and duration of operation. Antibiotic prophylaxis is one of many measures that should be taken into account in order to reduce postoperative appendectomy morbidity of primarily wound infection.

OBJECTIVES OF THE STUDY

- Determine the **role of postoperative antibiotics** in reducing the surgical site infections (SSIs) and intra-abdominal abscess formation after open appendectomy.

- Show our **useful protocol of Antibiotic prophylaxis** to prevention of soft tissue infection for treatment of appendectomy.

- Determine the **usefulness of Antibiotic prophylaxis in surgery** and **reduction of Antibiotic resistant and cost saving** in surgical price in Cambodia.

- **Share our experience** with the other facilities in Cambodia.

PATIENTS AND METHODS

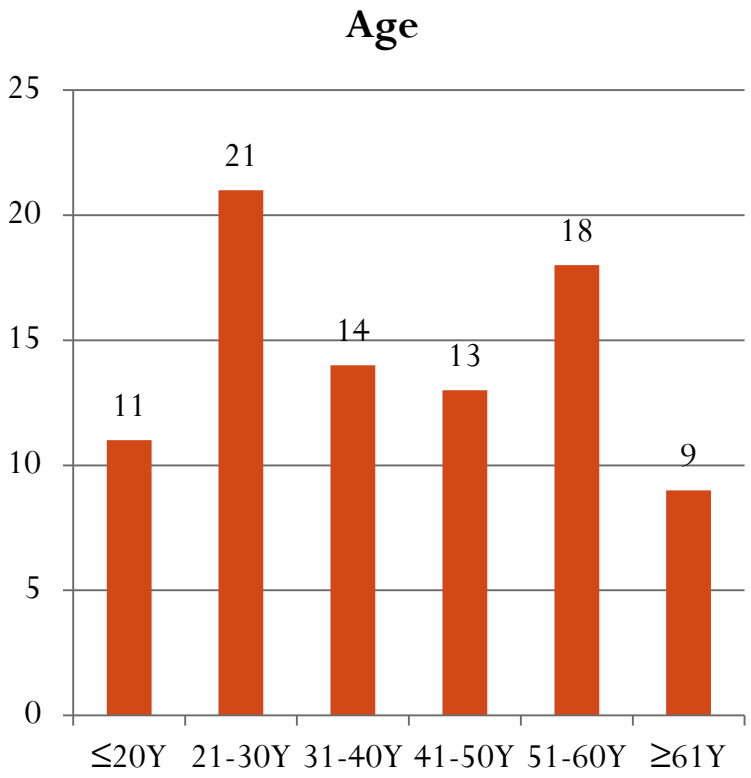
- This is the retrospective collection of data on all patients diagnosed with Appendicitis and treated with open Appendectomy.

- This study is conducted in surgical department of Sihanouk Hospital Center of Hope, Phnom Penh, Cambodia for 1 year of 2016.
  - We performed a retrospective review of 86 consecutive patients admitted between 1st January and 31st December 2016 in surgical department of Sihanouk Hospital Center of Hope who met our criteria.

RESULTS

Age Distribution

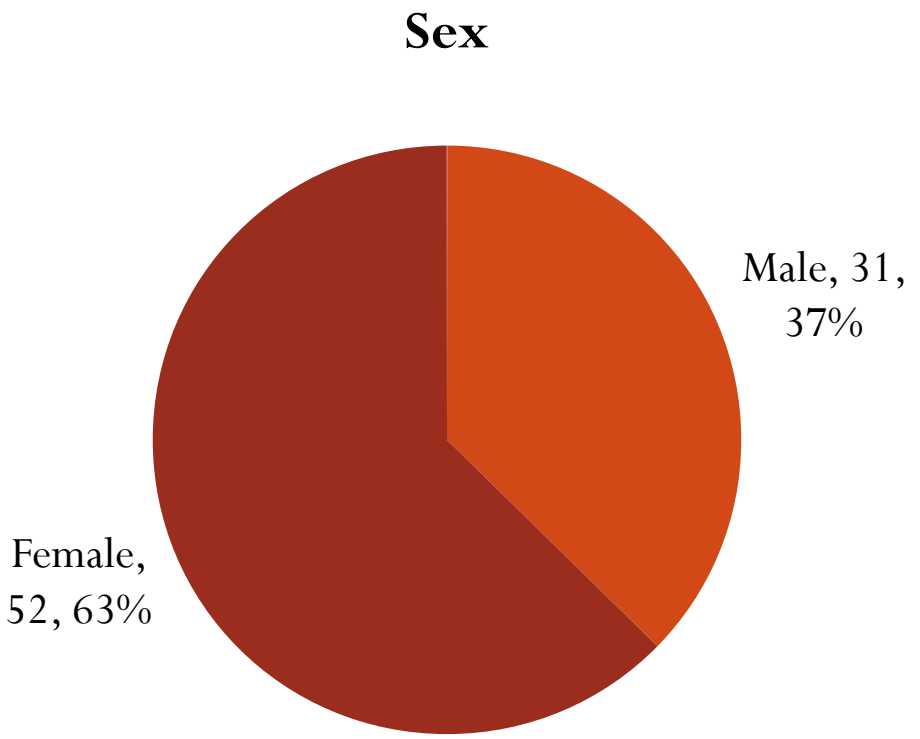
- According to ages, we found that our patient age getting Open Appendectomy is classified from 12 to 78years old. The medium is 45years old.



RESULTS

Sex Distribution

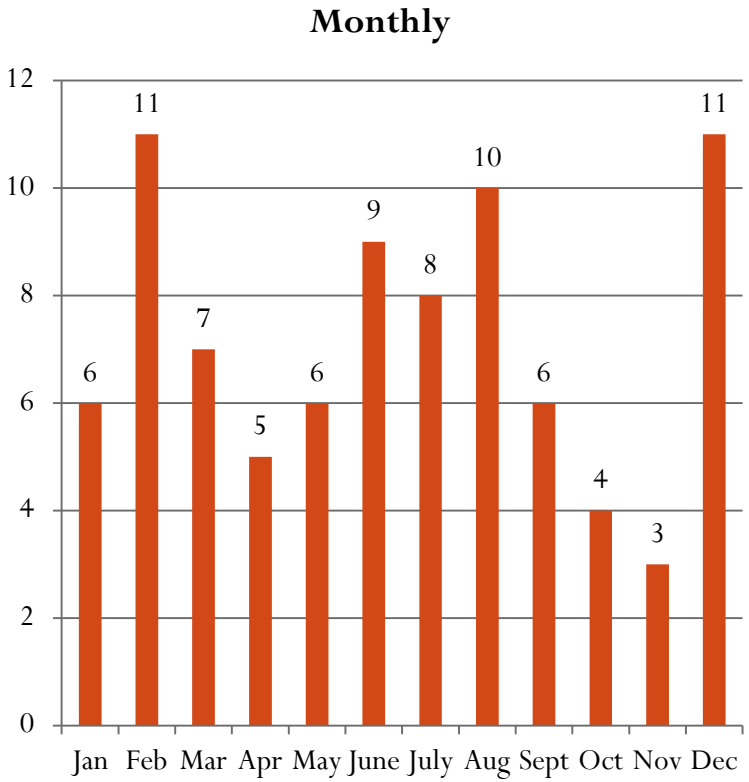
- According to Data collection on 86 cases, we can classify male: 31 so 37% and female: 52 so 63%.
- The sex-ratio M: F is 1: 1, 4.



RESULTS

Monthly Distribution

- According to the season, we found that the predominance is slightly in the months of February, August, and December.



RESULTS

Arrival Circumstance

- We noticed that most of our patients arrived within 24 hours (39 patients is 45%) and 48-72 hours (15 patients is 17,4%).
- This explains the severity for our patients.

Duration	Number of case	Percentage
<24 hours	39	45.3%
24-48 hours	23	26.7%
48-72 hours	15	17.4%
72 hours to 5 days	7	8.1%
5-7 days	2	2.3%

RESULTS

Operative preparation time

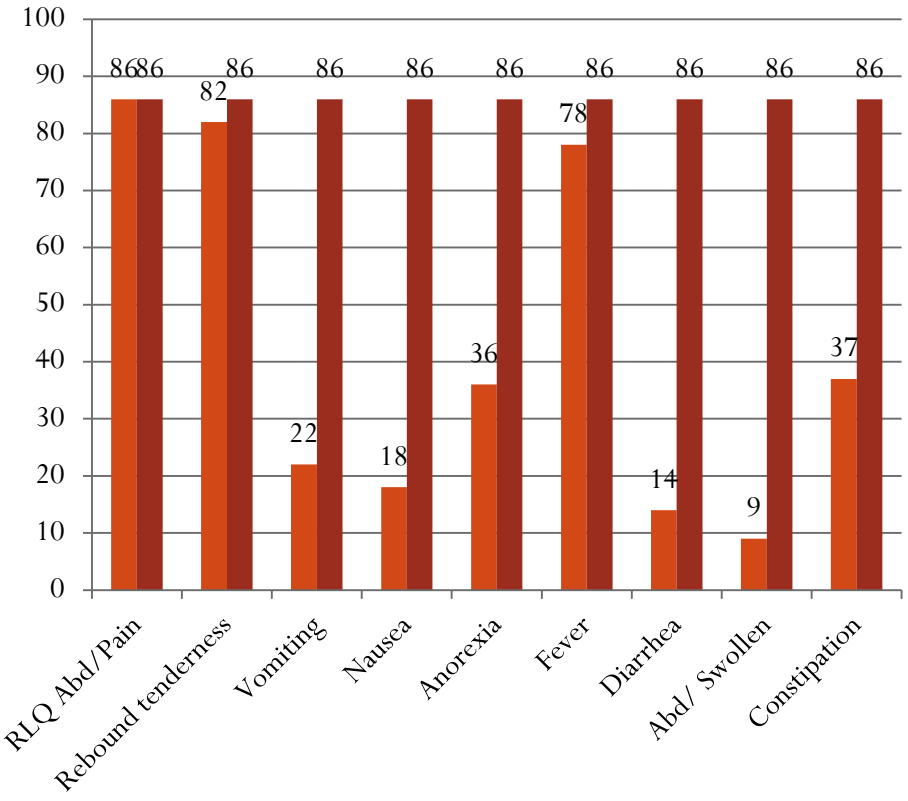
- The duration between the arrival in hospital of all patients and operation less than 4 hours = 54 cases is 62,7%, Between 4-24hours 27 cases is 31,3% and over 24hours 5case is 5,8%.

Duration	Number of Case	Percentage
<4 hours	54	62.7%
4-24hours	27	31.3%
>24hours	5	5.8%

RESULTS

Clinical Symptom

- Abdominal Pain:
  - The right lower quadrant: 86, 100%
  - Rebound tenderness: 82 cases is 95.3%
- Vomiting: 22, 25.5%
- Nausea: 18, 20.9%
- Anorexia: 36, 41.8%
- Fever: 78, 90.6%
- Diarrhea: 14, 16.2%
- Abdominal swollen: 9, 10.4%
- Constipation: 37, 43%.



RESULTS

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- Fever: 78, 90.6%
- Diarrhea: 14, 16.2%
- Abdominal swollen: 9, 10.4%
- Constipation: 37, 43%.

Symptoms	Number of cases	Percentages
The right lower quadrant abdominal pain	86	100%
Rebound tenderness	82	95.3%
Vomiting	22	25.5%
Nausea	18	20.9%
Anorexia	36	41.8%
Fever	78	90.6%
Diarrhea	14	16.2%
Abdominal swollen	9	10.4%
Constipation	37	43%

RESULTS

General Signs - Temperature

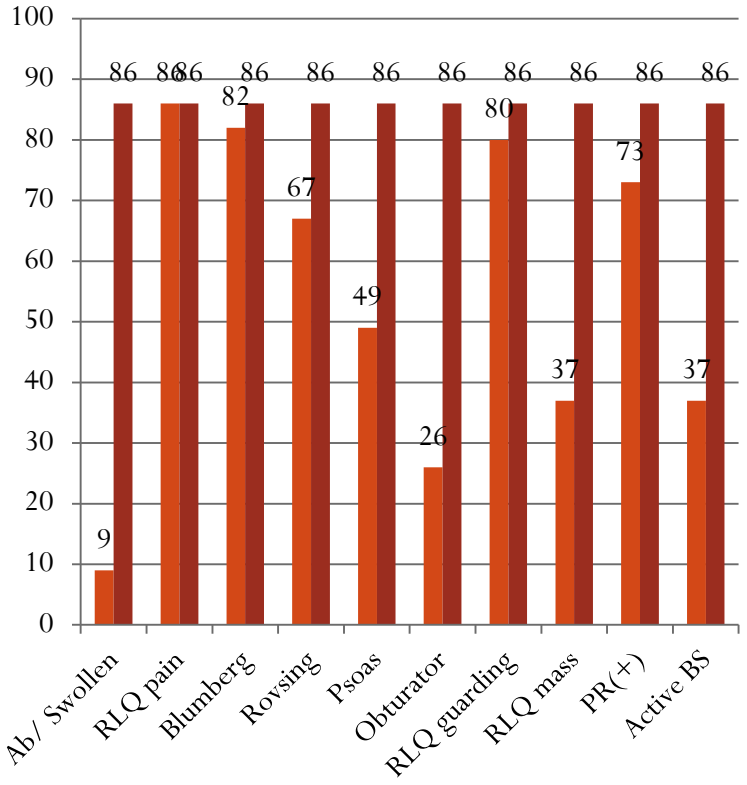
- The average temperature of 86 patients is 38, 5 °C with minimum 37, 5°C and maximum 40°C.

Temperature	Number of case	Percentage
37,5°C	14	16.2%
38°C	28	32.5%
38,5°C	25	29%
39°C	15	17.4%
40°C	4	4.6%

RESULTS

Physical Signs

- Look & Percussion:
  - Abdominal swollen: 9, 10.4%
- Palpation:
  - Increased pain on palpation of right iliac fossa is 86, 100%.
  - Rebound Tenderness – Blumberg sign: 82, 95.3%.
  - Right lower quadrant abdominal guarding 80, 93.0%
  - Right lower quadrant abdominal mass: 37, 43%
  - Rovsing sign: 67, 77.0%
  - Psoas sign: 49, 56.9%
  - Obturator sign: 26, 30.2%
  - PR with right lower abdominal pain: 73, 84.8%
- Listent:
  - Active bowel sound: 37, 43%



RESULTS

Laboratory Investigation

- Although 70–90 percent of people with appendicitis may have an elevated white blood cell (WBC) count, there are many other abdominal and pelvic conditions that can cause the WBC count to be elevated.

Leukocyte	Number of case	Percentage
10000/mm^3	8	9.3%
10000-15000/mm^3	17	19.7%
15000-20000/mm^3	11	12.7%
20000-25000/mm^3	16	18.6%
25000-30000/mm^3	24	27.9%
>30000/mm^3	10	11.6%

RESULTS

Imagery/ Abdominal X- Ray

- We did erect abdominal X-Ray in 22 cases of 86 patients. The result is:
- Stercolith seen: 2,9%.
- Small bowel loop with Air-fluid levels: 13,59%.

Result	Number of Case	Percentage
Stercolith	2	9%
Air-Fluid level	13	59%

RESULTS

Imagery/ Abdominal Ultrasound

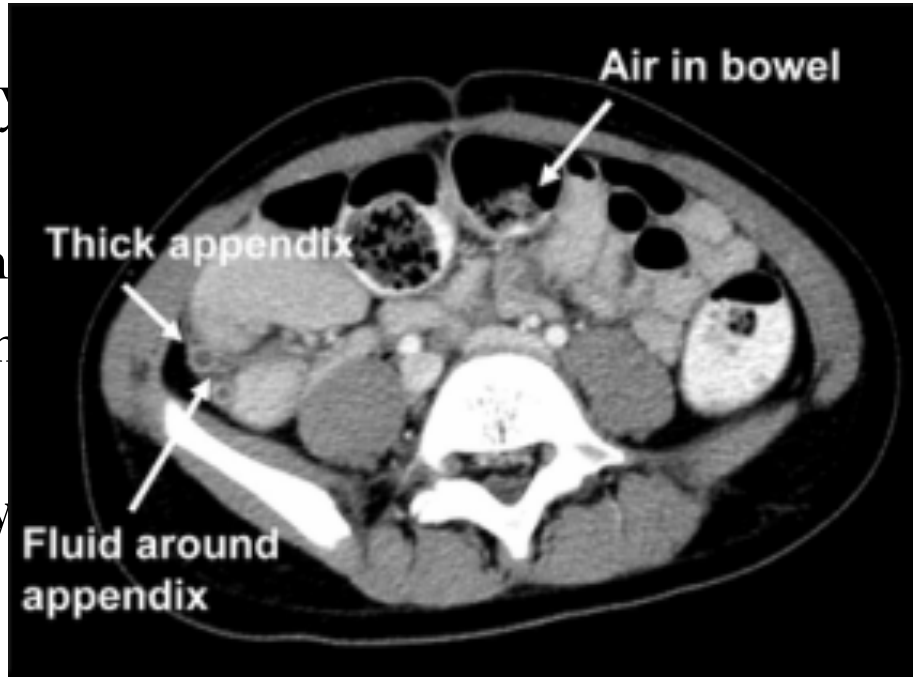
- Even appendicitis is usually diagnosed clinically. In our series, all our 86 patients were done by ultrasound of abdomen. But diagnostic positive confirmation is only 84, 97.6% cases. There are:
  - Appendix Diameter more than 8mm: 59, 68.6%
  - Appendix stercolith: 2, 2.3%
  - Peri-appendix abscess: 12, 13.9%
  - Douglas abscess: 5, 5.8%

Diagnosis positive or precise of echography	Number of case	Percentage
Appendix diameter > 8mm	59	68.6%
Stercolith	2	2.3%
Peri-appendix abscess	12	13.9%
Douglas abscess	5	5.8%

RESULTS

CT scan abdominal-pelvis

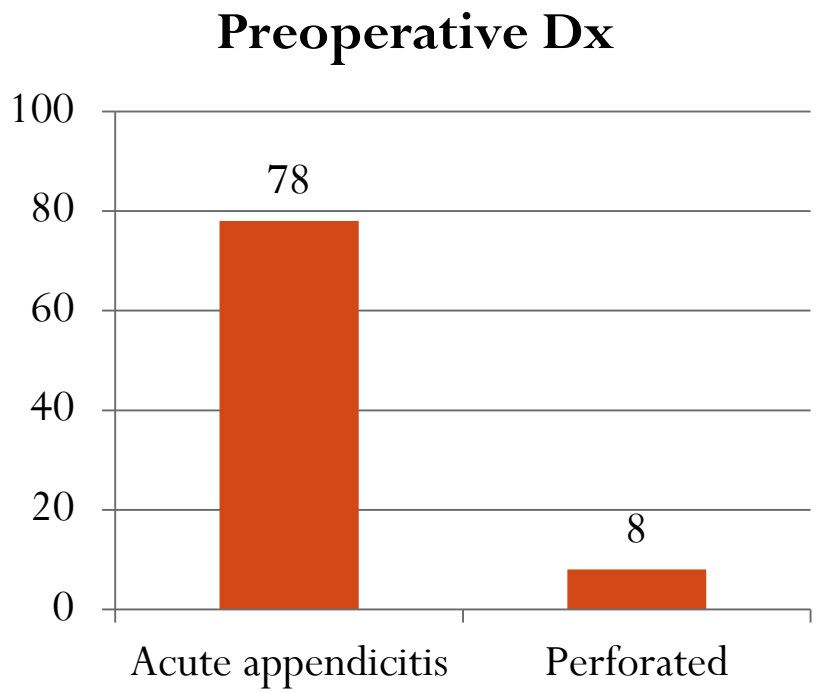
- The computed tomography was performed in 2, 2.3% patients, who present with 7 days of abdominal pain in right iliac fossa and echography presented only a big mass in right iliac fossa.



RESULTS

Pre-Operative Diagnosis

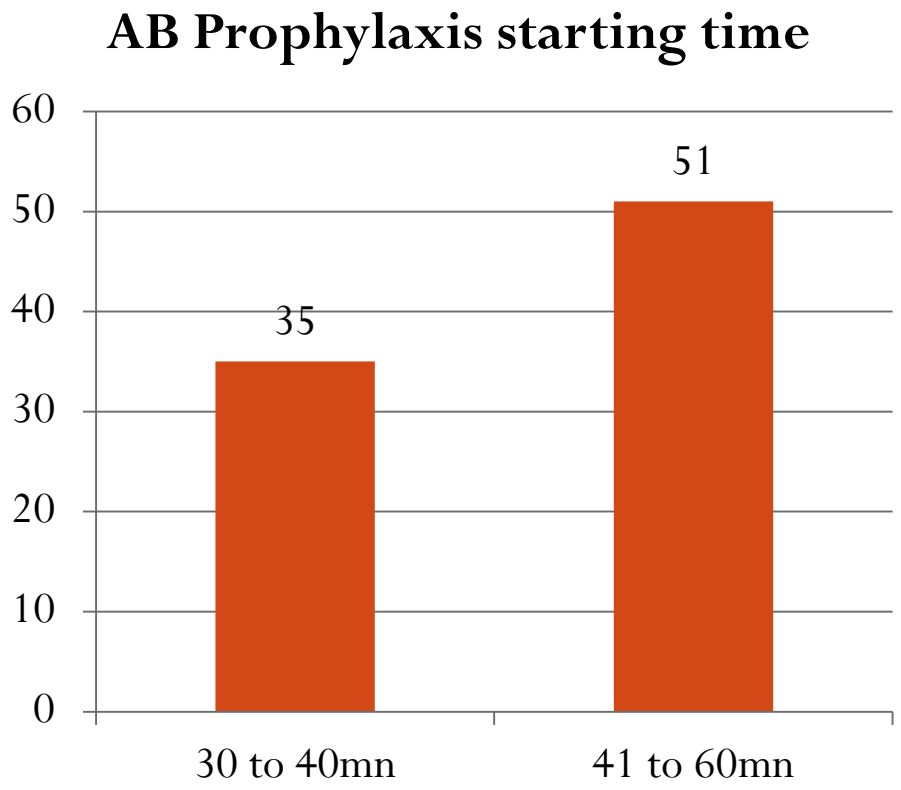
- After a well conducted clinical examination with all para-clinical assessments, our diagnosis is:
  - Acute appendicitis: 78, 90.6%
  - Locale Peritonitis and abscess due to perforated appendicitis: 8, 9.3%



RESULTS

Antibiotic prophylaxis duration

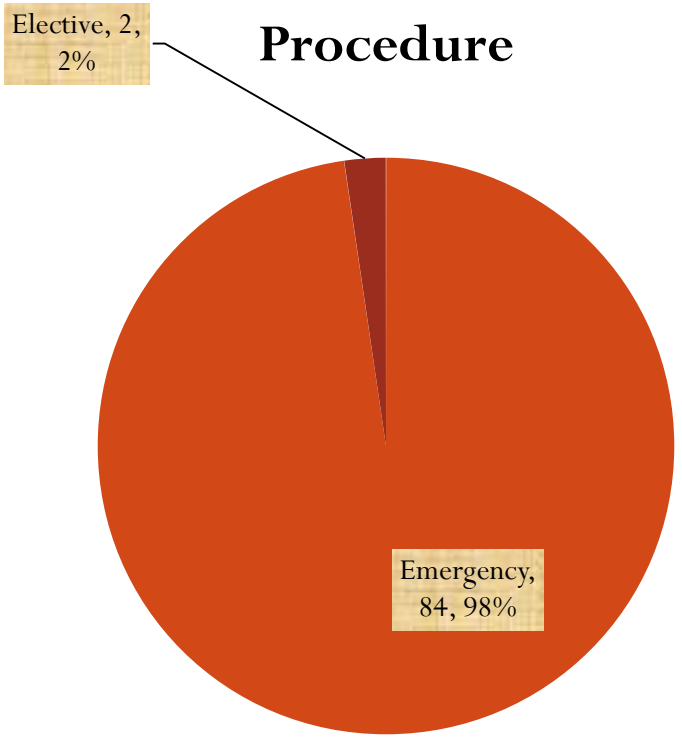
- Antibiotic prophylaxis before skin incision ranged from 30mn to 60mn, the medium is 46mn:
  - 30mn to 40mn: 35 cases
  - 41mn to 60mn: 51 cases
- In Sihanouk Hospital Center of HOPE antibiotic prophylaxis protocol, we have to use Cefazoline 2g for every appendectomy procedures, but because of Cefazoline are run out of stock, our committee decided to use Ceftriaxone 2g instead. In our series, only 1 case that we used Meropenem 1g because of her UTI is infected with ESBL positive.



RESULTS

Type of Operation

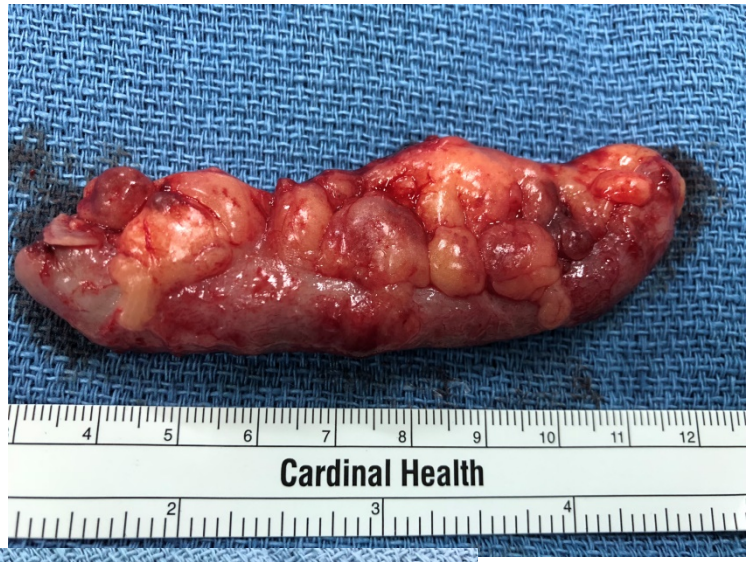
- There are 84, 97.6% patients were performed emergency appendectomy and only 2, 2.3% cases were elective procedure because of their associated disease such as Urosepsis and ovarian cyst.

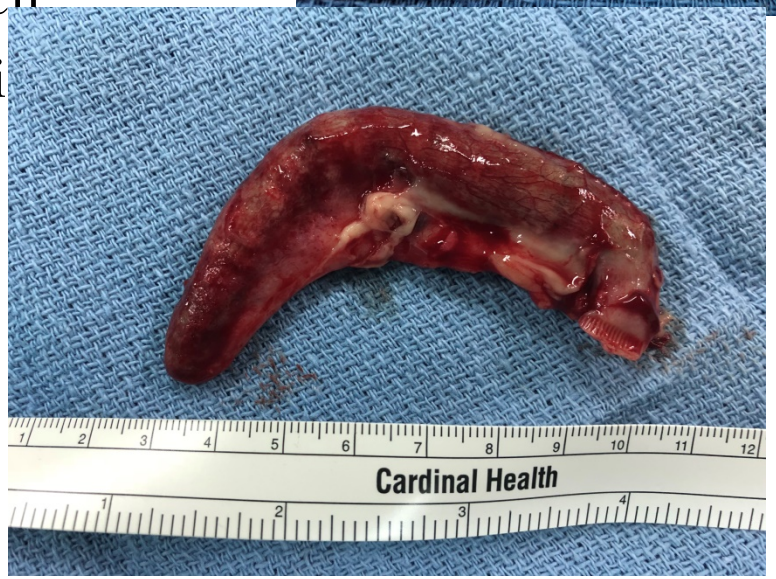


RESULTS

Operation duration

- The duration of appendectomy procedure is done from 30mn to 152mn according to their difficulty. The medium i 86mn

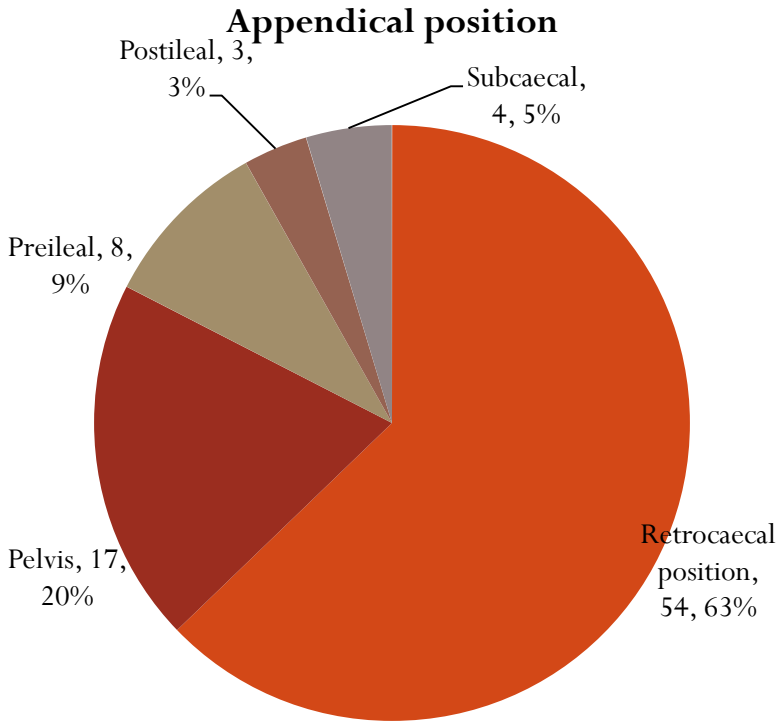




RESULTS

Exploration

- The variation of appendicitis:
  - Retrocaecal position: 54, 62.7%
  - Pre-ileal position: 8, 9.3%
  - Pelvis:17, 19.7%
  - Post-ileal position: 3, 3.4%
  - Subcaecal: 4, 4.6%



RESULTS

Appendix Aspect

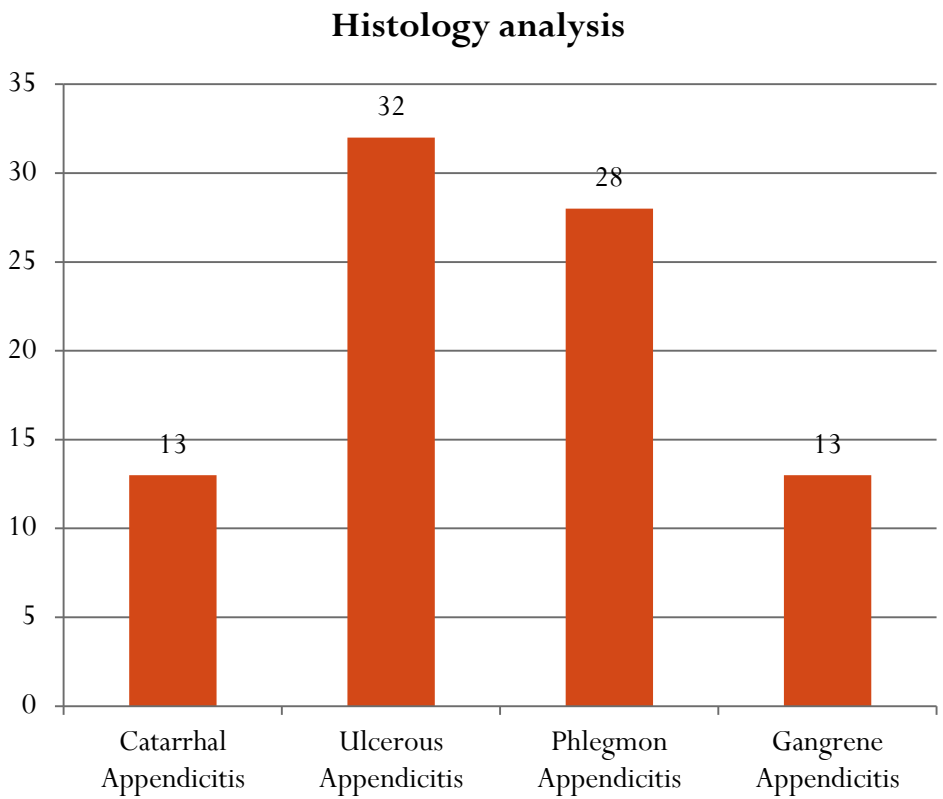
- The macroscopic view of appendix describe by surgeon during appendectomy is:
  - Non perforated Appendicitis:
    - Catarrhal Appendicitis: 22, 25.5%
    - Phlegmon Appendicitis: 17, 19.7%
    - Gangrene Appendicitis: 39, 45.3%
  - Perforated Appendicitis with locale peritonitis or abscess 8, 9.3%:
    - Phlegmon perforated appendicitis: 6, 6.9%
    - Gangrene perforated appendicitis: 2, 2.3%.

Appendix Aspect	Number of Case	Percentage
Catarrhal Appendicitis	22	25.5%
Phlegmonous Appendicitis	17	19.7%
Gangrenous Appendicitis	39	45.3%
Perforated Appendicitis with locale Peritonitis or Abscess	8	9.3%

RESULTS

Histology Examination

- The sample was collected for histological analysis. The result of Anatomopathology is:
  - Catarrhal Appendicitis: 13 cases
  - Ulcerous Appendicitis: 32 cases
  - Phlegmon Appendicitis: 28 cases
  - Gangrene Appendicitis: 13 cases



RESULTS

Evolution and Complications

- The temperature of the most of the patients is become normal in D1 toD3. The medium is after D1.
- Patient can pass gas and stool in D2 to D5. The medium is D3.
- Usually patient can start clear fluid consumption 30cc/hour from D1 and free diet in D3. But some patients who got locale peritonitis due to appendiceal perforation could start free diet from D3 to D7. The medium is D5.

RESULTS

Evolution and Complications

- Surgical site infection (SSI) was defined as pus discharge from the wound that necessitated wound opening and drainage.
- Intra-abdominal collection was defined as the fluid collection inside the peritoneal cavity confirmed by ultrasound or computed tomography that required drainage.

- In our series, All patients without appendiceal perforation (78, 90.6%), their wound will check in D3 and remove sutures in D7 to D10.
  - All these patients were used only 1 dose of Ceftriaxone 2g for Antibiotic prophylaxis.
  - Only 1 case (1.2%), her wound was infected seen in D3 and need to managed by laying open the wound, wound toilet with normal saline, and loose packing of the wound daily followed by secondary closure.

RESULTS

Evolution and Complications

- All patients who had appendiceal perforation with locale peritonitis (8, 9.3%), their wound is open with wet to dry dressing change daily followed by secondary closure or healing by secondary intention with at least 7 days of antibiotics.
- Most of them could switch IV to Po AB in D3 or D5, especially after their temperature and WBC subsided with normal gas and stool.
- Among them 6, 6.9% of patients with locale peritonitis could stay in hospital till D14 because of their wound is infected. Their Antibiotic use is always according to Gram Stain and Culture results.
- In our series, we noted that 2, 2. 3% of adhesive occlusion and need re-laparotomy and adhesiolysis in later on.
- No mortality rate.

DISCUSSIONS

Single dose of pre-operative AB prophylaxis for NPA

Study	SSI	Commands
Liberman and colleagues (1995)	1.9%	A single dose of pre-operative AB is the optimal prophylaxis for NPA
Mui and coworkers	6.4%	single dose of pre-operative AB could adequately prevent the postoperative infective complications
Le and associates	1.3%	No significant difference in SSIs rate in I dose of pre-operative AB
Coakley and colleagues	5.78%	addition of postoperative antibiotics did not reduce the infectious complications, rather significantly increased the morbidity in the terms of higher rates of antibiotic-associated diarrhea and Clostridium difficile infection. In addition, postoperative antibiotics had significantly prolonged the hospital stay and increased the treatment cost without affording any appreciable clinical benefit
Our study	1.2%	accordance with above researches and also no antibiotic related complication like diarrhea, and they could discharge home earlier.

DISCUSSIONS

AB USE in perforated appendicitis with locale peritonitis

Study	SS Wound	Post operative AB	Commands
Taylor et al	Open wound and W→D dressing	3 to 5 days	Discontinuation of IV antibiotics based on resolution of clinical findings, such as absence of pyrexia, and supported by a decrease in leukocytosis.
Our study	The same	At least 7 days	Most of them could switch IV to Po AB in D3 or D5, especially after their temperature and WBC subsided with normal gas and stool. Their Antibiotic use is always according to Gram Stain and Culture results.

CONCLUSIONS

- A single dose of pre-operative antibiotics (In our study: Ceftriaxone and metronidazole) was sufficient in controlling the SSIs after appendectomy for NPA.

- Postoperative antibiotics did not add an appreciable clinical benefit in these patients. Therefore, surgeons need to update their practice of antibiotic prophylaxis according to the standard guidelines and evidence based medicine.

- Again, we clear that preoperative antibiotic prophylaxis is recommended in all patients with acute appendicitis, whereas postoperative antibiotics only in cases of perforation with peritonitis.

Thank You

The case of Acute Promyelocytic Leukemia in children

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Abstract

Acute promyelocytic leukaemia (APL) is a rare subtype of acute myeloid leukaemia. The outcome of paediatric APL has improved substantially over the past 20 years; cure rates above 80% are expected when all-trans retinoic acid (ATRA) and arsenic trioxide (ATO) are given at diagnosis. The presenting features of paediatric APL may include DIC, severe bleeding and thrombotic complications, which contribute to the high early mortality. It is crucial to begin ATRA and ATO therapy, and intensive platelet and fibrinogen replacement on first suspicion of APL. Combination therapy with ATRA and arsenic trioxide provides very effective frontline treatment and may reduce the need for subsequent anthracycline therapy. Early treatment is the key for survival.

Case report: We report the case of an 11 year old girl who arrived at Angkor Hospital for Children with the chief complaint of spontaneous bruising on her arms, legs and back for 15 days. She did not have active bleeding signs, fever, or headache. She also complained of intermittent abdominal pain but had no diarrhea or constipation. She was previously healthy. She was initially diagnosed with dengue fever at a private clinic. At a second clinic she was diagnosed with a "blood disorder" and was prescribed oral medication for three days. She then developed fever and oral ulceration, and was referred to Angkor Hospital for Children.

On examination, the child was alert. She was tachycardic with a heart rate of 106bpm and temperature of 38^{o}C. She had bruising on bilateral arms, legs and back, bilateral cervical lymphadenopathy, tonsillar hypertrophy grade II with exudate and small red ulcers on her hard palate. Other ROS was unremarkable.

The CBC on admission showed anemia (Hb: 94g/dl), severe thrombocytopenia (platelet: 18x10^{9}/L), CRP 146 mg/dL and normal blood film. Chest x-ray and heart ultrasound were normal but there was left submandibular suppurative adenitis. By day XX, she had developed leucopenia (WBC: 2.3x10^{9}/L), severe anemia (Hb: 5.9g/dl), severe thrombocytopenia (platelet: 5x10^{9}/L), blast cell 0.4 x10^{9}/L. Cytogenetic studies and flow cytometry (*HaematoLogics Inc*., Seattle, USA) confirmed the diagnosis of APL

She was initially treated for acute tonsillitis and neutropenic fever. After discussion with our oncology team and experts from the HVO-ASH network, we planned to treat this child with ATRA and AOT, which are not available in Cambodia and take about three months to arrive. While waiting for medication, the child was rapidly worsening. After counselling the mother about treatment options and prognosis, interim chemotherapy (cytarabine and doxorubicin) was started to keep her alive until the curative treatment arrived. Unfortunately, she developed active bleeding, neutropenic fever and severe pneumonia, was ventilated and passed away in PICU.

Discussion: Currently APL is one of the most treatable forms of acute leukemia (shift from highly fatal to highly curable subtype), with cure rates above 80% with combination ATRA and AOT treatment. **Early** diagnosis and treatment are essential for survival. Hopefully in the future these lifesaving drugs will be available in Cambodia.

Keywords: APL, bleeding, thrombotic, platelet and fibrinogen replacement

A case of Acute Promyelocytic Leukemia

SAM LYVANNAK

3rd year resident

Objectives

1. Case presentation
2. Literature review
3. Discussion

A 11 year old girl presented with bruising on arms, legs and back for 15 days

- Abdominal pain on & off
- No bleeding disorder before
- No URI
- Decrease appetite
- Brought to private clinics:
  - — 1st clinic diagnosed as dengue fever and
  - — 2nd more diagnosed as blood problem, gave some medicine for 3 days
- Fever just these last 2 days
- Oral blister, shortness of breath,
- Was explain to AHC

➢Healthy recently

➢No family history of bleeding disorder

➢Vaccination is up-to-date

➢ Normal growth & development

ANGKOR HOSPITAL FOR CHILDREN

Physical examination

Vital signs: HR:106, RR:40, T:37.9C, SaO2:100%, BP104/70, WBT: 24kg

- GA : Alert
- Skin : Bruising on arms, legs and back
- HEENT : B/L anterior cervical LN (R: 1.2cm), Tonsil hypertrophy 2 with exudate, red and small ulcer on hard palate
- CVS : Normal pulse volume, CRT<2s, no murmur
- Resp : No retraction, clear lung sound
- GI : Soft abdomen, no HSM
- Neuro : Full conscious, normal motor and sensory

ANGKOR HOSPITAL FOR CHILDREN

Investigation

- CBC, Diff, blood film
- Electrolyte
- CRP, ESR, Blood culture
- Renal function and liver function test
- Urine analysis
- ASLO, RF, SLE antibody
- Blood culture for meloidiosis
- Throat swab
- Chest X-ray
- Heart Ultrasound
- Neck Ultrasound

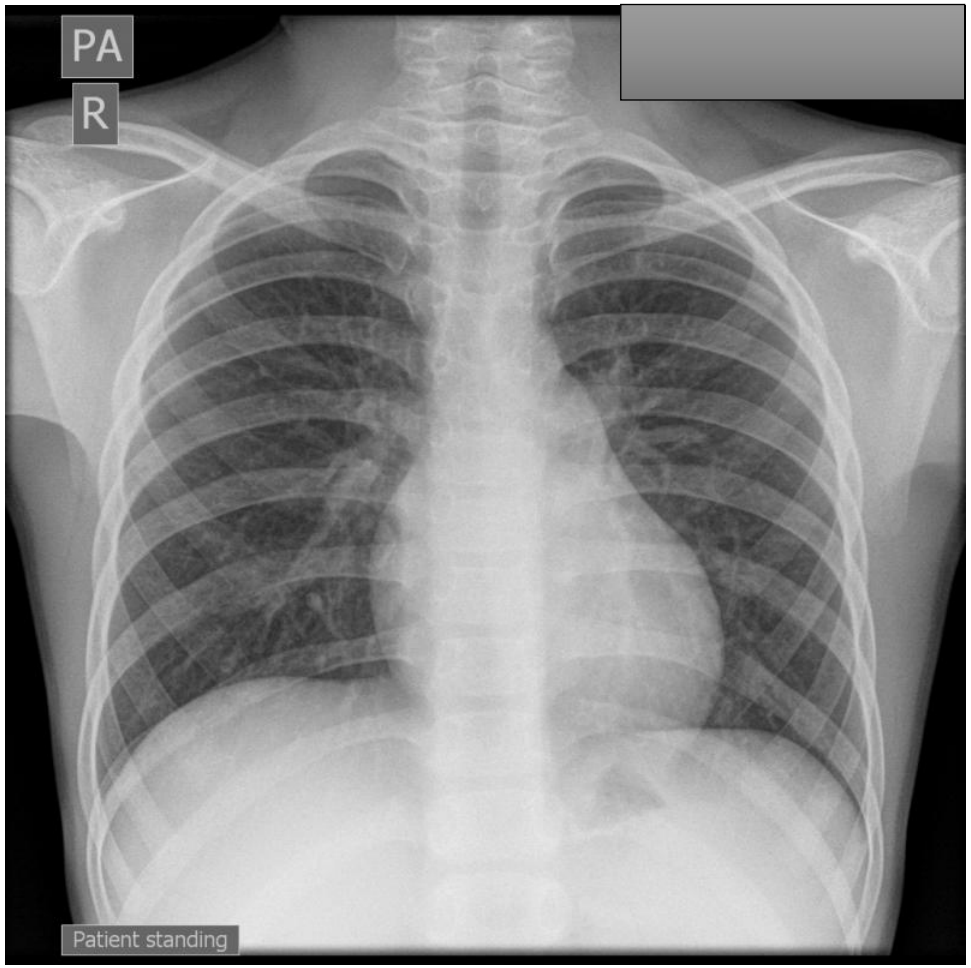
Angkor Hospital for Children

Lab result

- WBC: 4.6, Hb: 94, MCV: 75
- Platelet: 18
- Lymph: 1.7
- Neut: 2.1
- CRP: 146
- ESR: 75
- Blood film: normal red cell
- Electrolyte: normal
- ALT: 35, AST: 36
- Urea: 4.5, Crea: 90
- UA: normal
- ASLO < 200
- RF < 20
- SLE antibody: Negative
- Blood culture for Melioidosis and Strep A (-)
- Throat swab: Negative

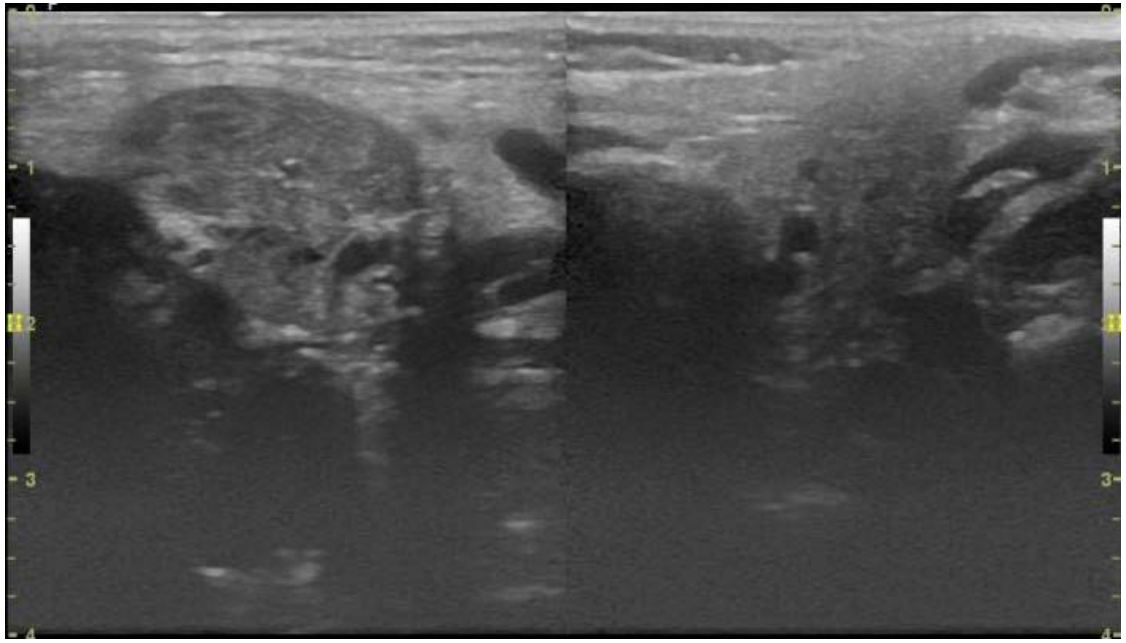
ANGKOR HOSPITAL FOR CHILDREN

- **Chest X-ray**



- **Heart USS**
  - Normal heart anatomy
  - Normal heart function

- **Neck US**
  Left submandibular suppurative adenitis



Differential Diagnosis

1. Tonsilopharyngitis
2. Sepsis
3. ITP

Angkor Hospital for Children

Plan & Management

1. Penicillin V
2. Paracetamol
3. Waiting other lab test for further management
4. Admitted in IPD

Angkor Hospital for Children

15 days progression in IPD

- Still continuously fever until the last 2 days before discharge
- Severe thrombocytopenia -> Transfused platelet
- Severe anemia -> Transfused FWB
- Neutrophenia fever -> treated with meropenem

- Found **blast** in blood film → suspected acute leukemia → sent peripheral blood to Seattle, US

Blood result from US

Cytogenetic: <u>Positive for PML/RARA</u>

What is your diagnosis now?

Angkor Hospital for Children

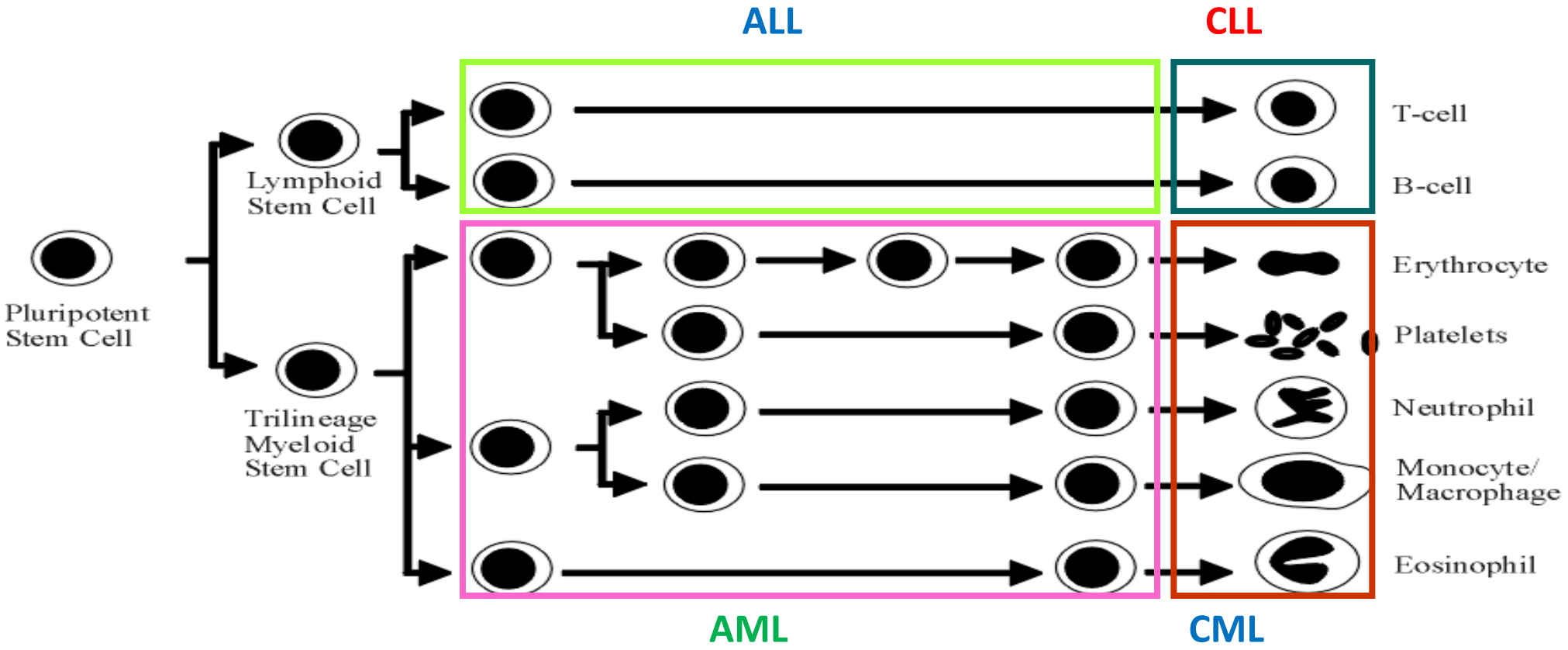
Acute Promyelocytic Leukemia

Review of Literature

Angkor Hospital for Children

Types of Leukemia

- Leukemia is a malignant disease characterized by unregulated proliferation of one cell type



Introduction (APL)

- First described in 1957 by “Hillestad (Sweden)”, as a hyperacute fatal illness.
- APL is a subtype of AML causing by the translocation of chromosomes 15 and 17, which results in the *PML-RARA* fusion gene **t(15;17)(q22,q12)** by **WHO 2008**
- Previously known as AML M3 by French American British (FAB)
- Characterized by a rapidly fatal course with a high incidence of early hemorrhagic death

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Epidemiology

- Incidence of all AML is 3-5/100k
- APL represents 5-10% of AML
- In total 600-800 new APL cases/year
- Incidence of APL is highest in young adults

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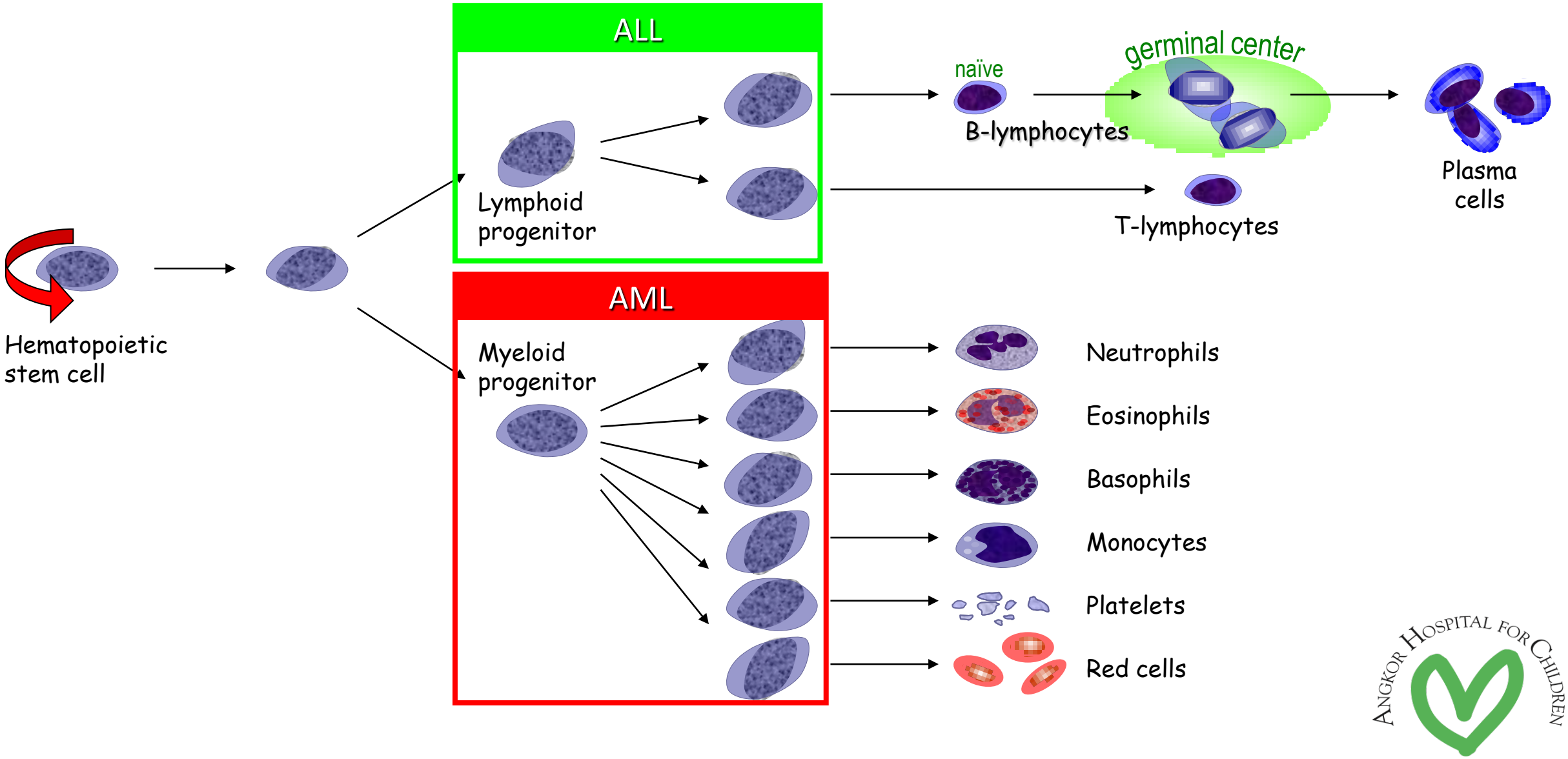
Pathogenesis



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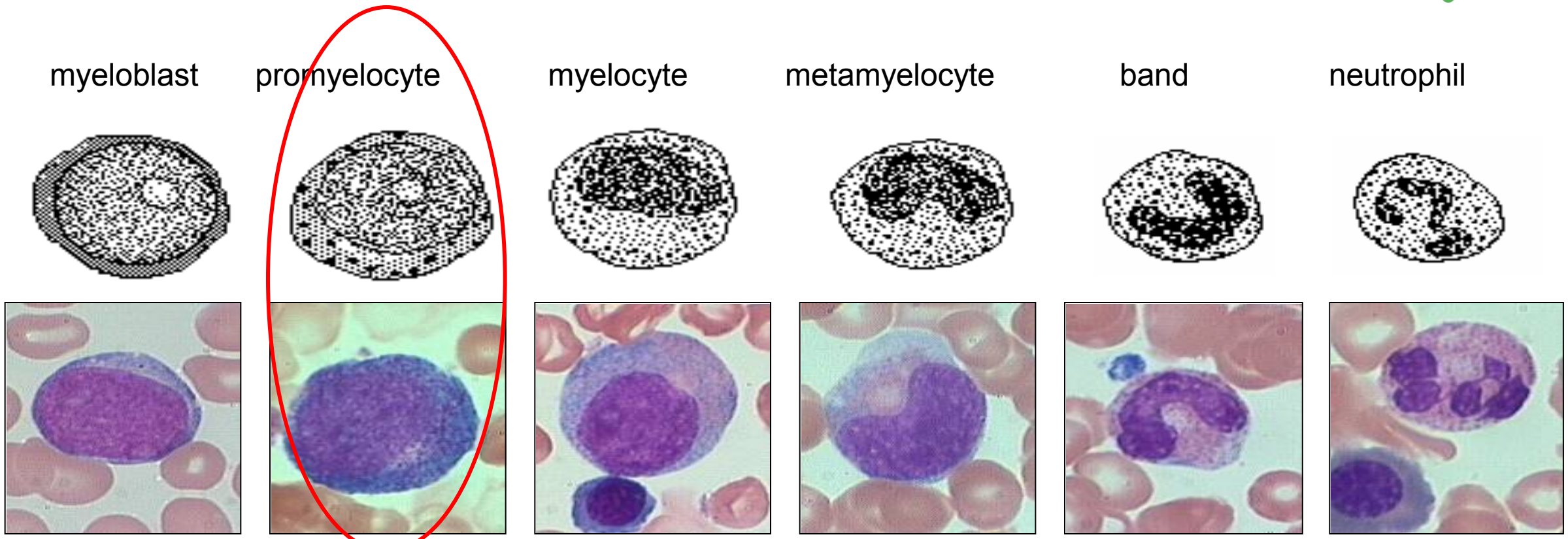
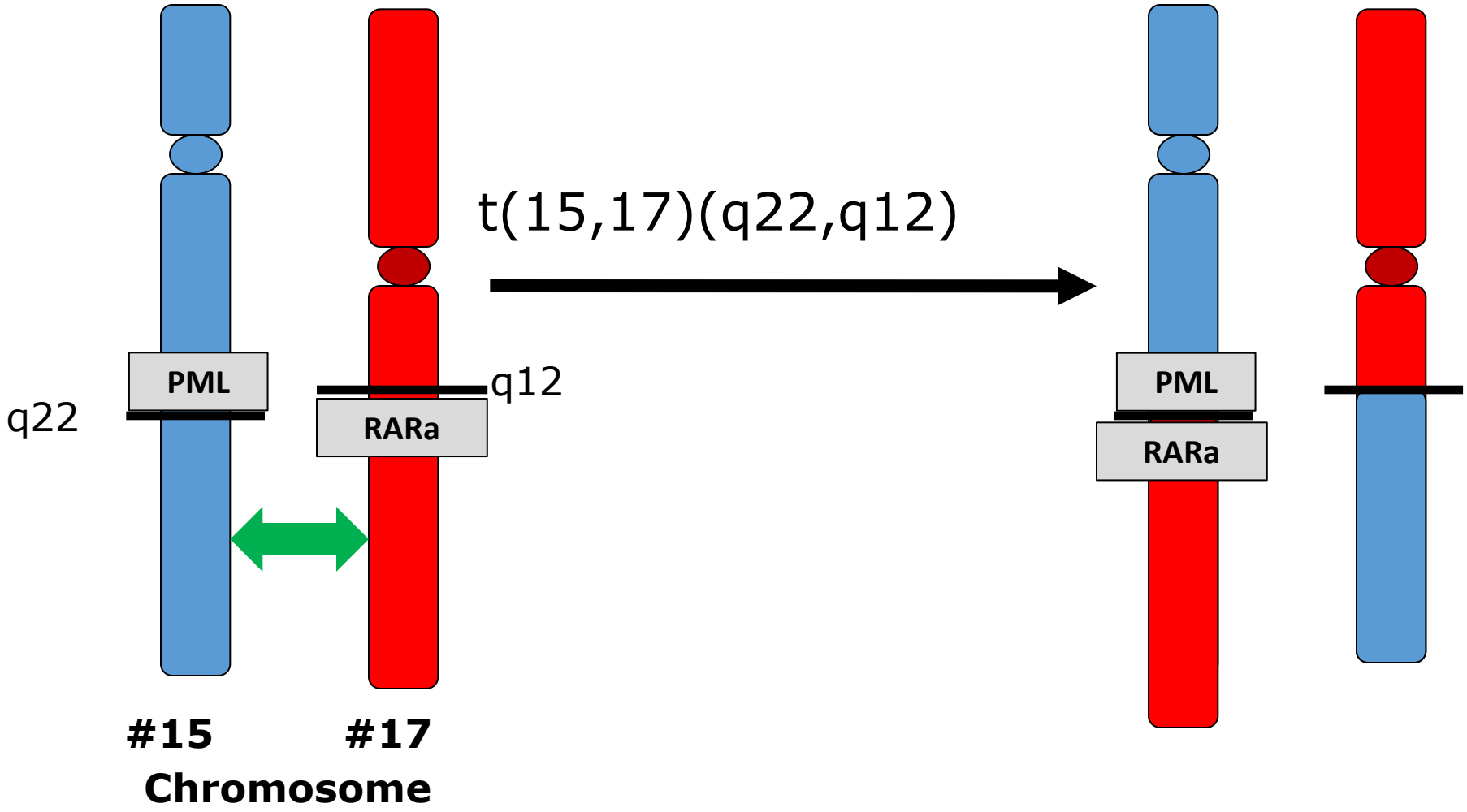
Myeloid maturation



Neutrophil MATURATION

Pathogenesis

- Abnormality is a translocation of retinoic acid receptor alpha:
  - 95% PML-RARa – t(15;17)
  - <5% PLZF-RARa – t(11;17)



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FAB Classification of AML

M0	Undifferentiated/minimally diff.	Large, **agranular** blasts >90%
M1	Acute Myeloblastic (no maturation)	>90% blasts; <10% pro/mono
M2	Acute Myeloblastic (w/ maturation)	30-89% blasts; >10% pro/myelo <20% monocytic
M3	**Acute Promyelocytic - hypergranular**	**Hypergranular; Auer rods**
M3v	M3v = variant microgranular type	v - fine granularity
M4 M4Eo	Acute Myelomonocytic M4Eo = with eosinophilia	≥30% blasts, <80% monocytic
M5a M5b	Acute Monocytic Acute Monocytic w/ differentiation	>80% monocytic cells M5a: >80% monoblasts M5b: <80% monoblasts
M6	Acute Erythroleukemia	>50% erythroblasts in marrow (>30% of nonerythroid are blasts)
M7	Acute Megakaryoblastic	>30% megakaryoblasts

Diagnosis of APL

Clinical

Morphological

Immunophenotyping

Cytogenetics

Molecular genetics

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Clinical features

- ❑ Pancytopenia
  - Anemia – weakness, fatigue
  - Neutropenia – severe infections
  - Thrombocytopenia – mucosal or GI bleeding, ecchymosis.

- ❑ Coagulopathy- DIC
  - Severe bleeding

- ❑ Other signs it depends on its infiltration

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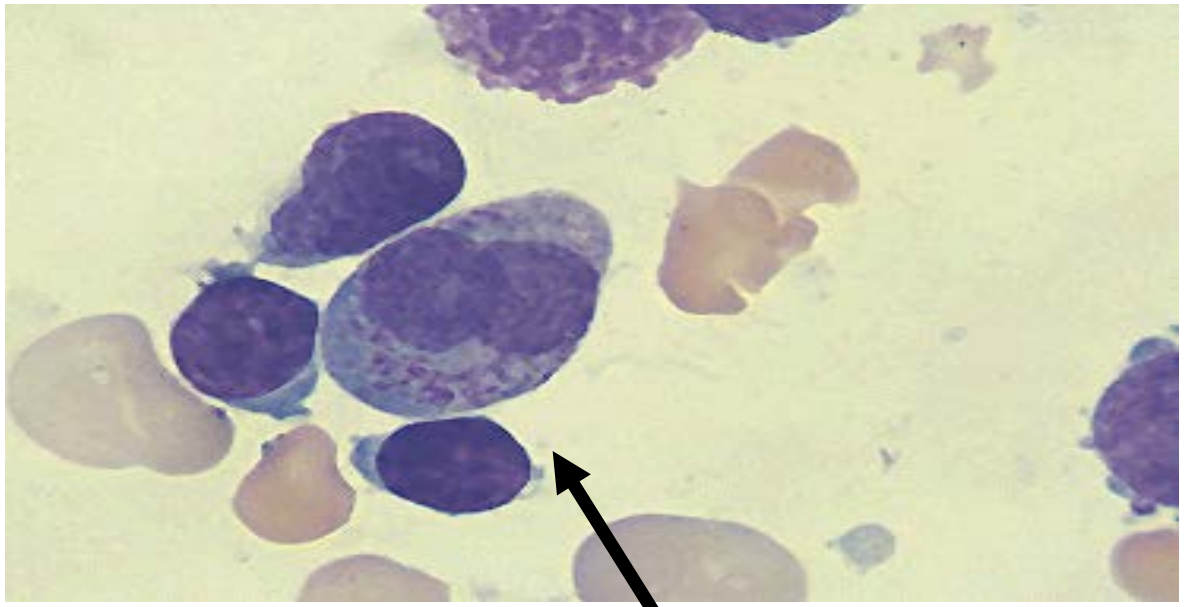
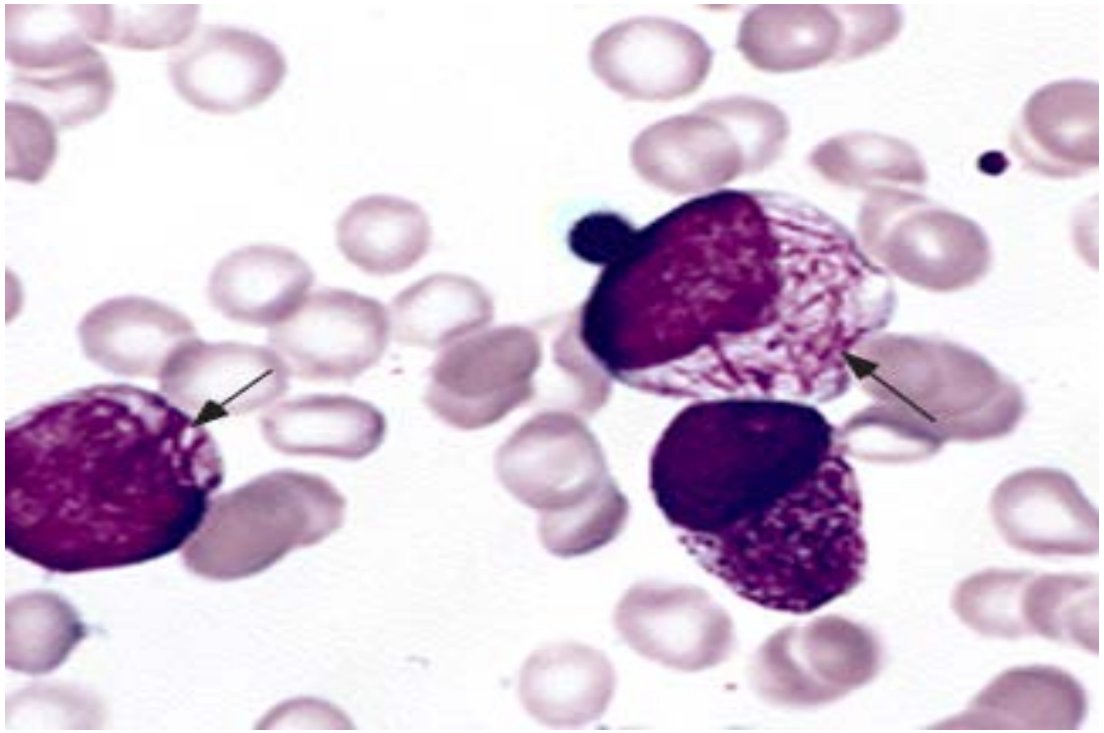
Morphological

Peripheral Smear



Hypergranular morphology

Bone Marrow Aspiration



Hypergranular morphology: shows multiple **Auer rods** (“faggot cells”)

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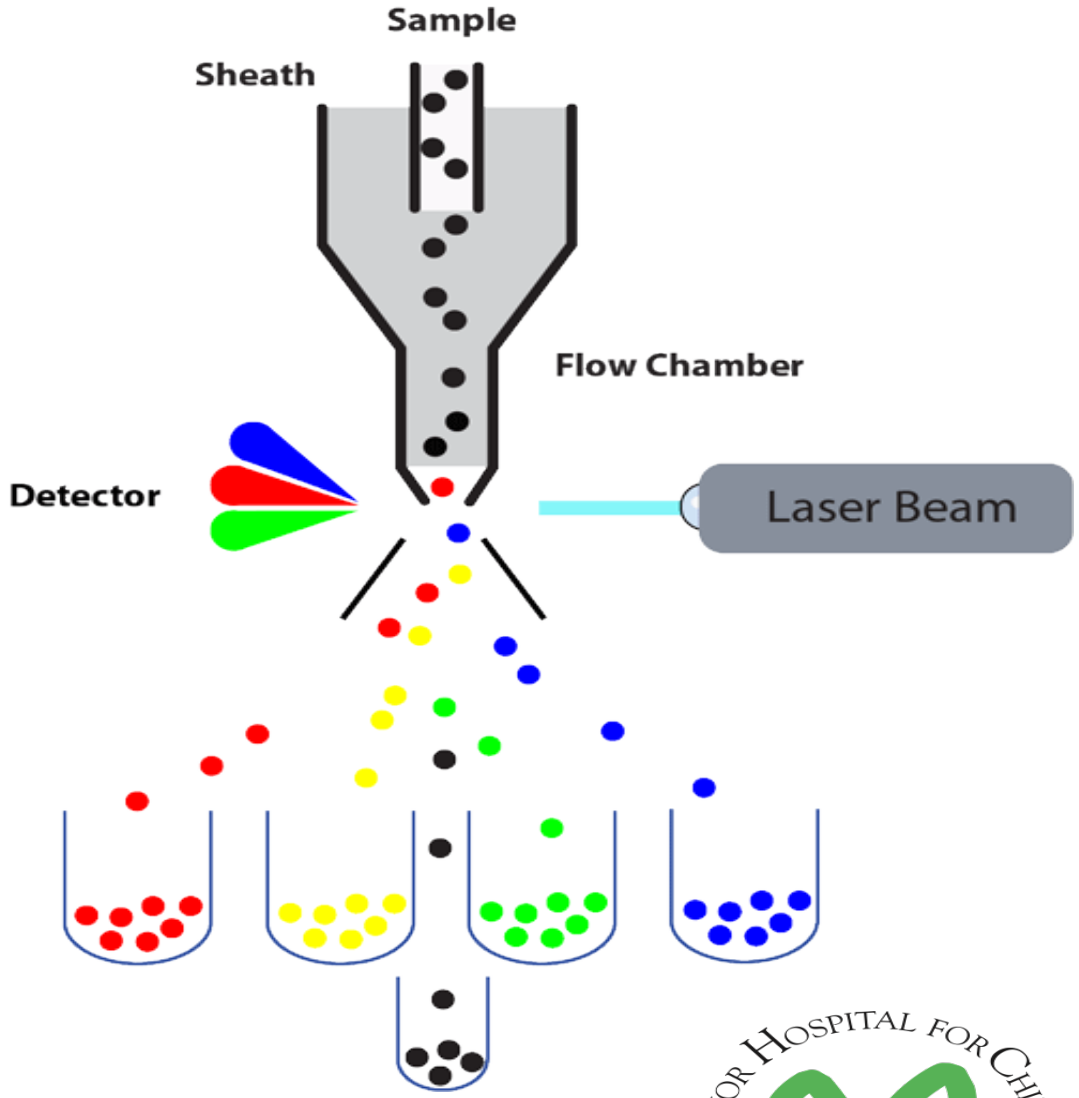
Immuno-phenotyping

Flow cytometry

- Classically CD33+, CD13+, MPO+, CD34–, HLA-DR–.
- CD2 and CD34 expression common in microgranular varient.
- CD56 in 20% of cases; associated with worse outcome.



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Cytogenetics

- Karyotype
  - Detects translocation variant
  - **t(15;17)(q22;q12); PML-RARA.**

Molecular genetics

- RT-PCR
  - Can detect residual disease
  - "Gold Standard"

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Treatment

- Supportive treatment
- Specific treatment

Supportive Treatment

- ❑ Severe Cytopenias
  - Transfuse blood products
  - Note: PRBCs can worsen coagulopathy
- ❑ Neutropenic Fever
  - Start broad spectrum antibiotic
- ❑ Tumor Lysis - rare with APL
  - replete electrolytes, hydrate, allopurinol…
- ❑ Coagulopathy/DIC :

  Very common with APL
  - Maintain platelets >20-30k
  - Maintain fibrinogen >100-150mg/dl
  - Avoid invasive procedures if possible
  - Start ATRA at preliminary diagnosis

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Specific Treatment

- The treatment APL is the use of medicines that help the leukemia cells grow up (mature) and allow normal blood cells to be produced.

- Drugs:
  - All trans retinoic acid (ATRA)
  - Arsenic trioxide (ATO)

- It is divided into 2 phases:
  - induction (4-6 weeks)
  - continuation (7 months)

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Differentiation Syndrome
(ATRA Syndrome)

- ❑ Develops 2-21 days post induction with ATRA
  - Up to 25% incidence
  - Fever, peripheral edema, pulmonary infiltrates, renal/hepatic failure, serositis with effusions
- ❑ Treatment
  - Dexamathasone 10mg iv q12h x 3 days
  - Hold ATRA for severe symptoms

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Back to our patient

- The child was admitted again
  - GI bleeding -> anemia
  - Fever again

- Progression
  - Cervical lymph nodes enlargement & tonsilar hypertrophy causing upper airway partially obstruction -> ↑ WOB
  - Severe anemia -> transfused several Packed RBC
  - Severe thrombocytopenia -> several times platelet infusion
  - Severe neutropenia -> treated with meropenem

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Back to our patient cont'

- We ordered ATRA & ATO, but it took 3 months to arrive AHC

- After discussed with Oncology team:
  - Chemotheraphy (Cytarabine, doxorubicine)

- Eventually the child was died :
  - Severe pneumonia
  - Neutropenic fever
  - Bleeding

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Discussion

- Currently APL is one of the most treatable forms of acute leukemia (shift from highly fatal to highly curable subtype).
- Cure rates above 80% with combination ATRA and ATO treatment.
- **Early** diagnosis and treatment are essential for survival.
- Hopefully in the future these lifesaving drugs will be available in Cambodia.

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- Acknowledgement to **Maged Abd El Fattah Amine,***Assistant Lecturer Of Medical Oncology,South Egypt Cancer Institute*
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- **“Angkor Hospital for Children (AHC)** is a Pediatric Teaching Hospital working in cooperation with the Cambodian Government to provide free, quality care to impoverished children in Siem Reap, Cambodia. Since 1999, AHC has provided over one million medical **treatments**, **education** to thousands of Cambodian health workers and **prevention** training to thousands of families. AHC offers both inpatient and outpatient care, surgical services, ER, intensive care treatment and antiretroviral HIV therapy”.

- Contact us at: ahc@angkorhospital.org
- Learn more at: www.angkorhospital.org
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Innovative pharmacognosy research and medical benefit of natural resources in Cambodia

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Abstract

Throughout the 1980s after the regime of the khmer Rouge, Cambodia recovered and have developed in a context of "good intensity". Cambodian Pharmacognosy research also grown up into a complete scientific system characterized by multiple components, Goals and pathways, which mediate numerous research activities and efficiencies. The development of "*Pharmacognosy Research activities*" in the country, including scientific studies, has enabled to illustrate a more systematic view. Although the network adequately reflects the overall philosophy of traditional medicine knowledge, its complexity hinders the relevant medical benefit inside of the community traditional therapy myths. Beside this issue a helpful strategy doing is to converge the initial community myths and scientific pharmacognosy study which aims to complement the needs in the communities in terms of disease prevention and treatment based on evidence. Hereby, we are optimistic that it will make benefit from an innovative pharmacognosy research project by using Cambodian natural resources to improve the activities of complex disease prevention and therapy in the country.

Keywords: Pharmacognosy,traditional medicine, disease prevention.

The 5th International Medical Congress
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14th -15th December 2018




INNOVATIVE PHARMACOGNOSY RESEARCH AND BENEFIT OF NATURAL RESOURCES IN CAMBODIA

Prof.Chheang Sena

CONTENTS

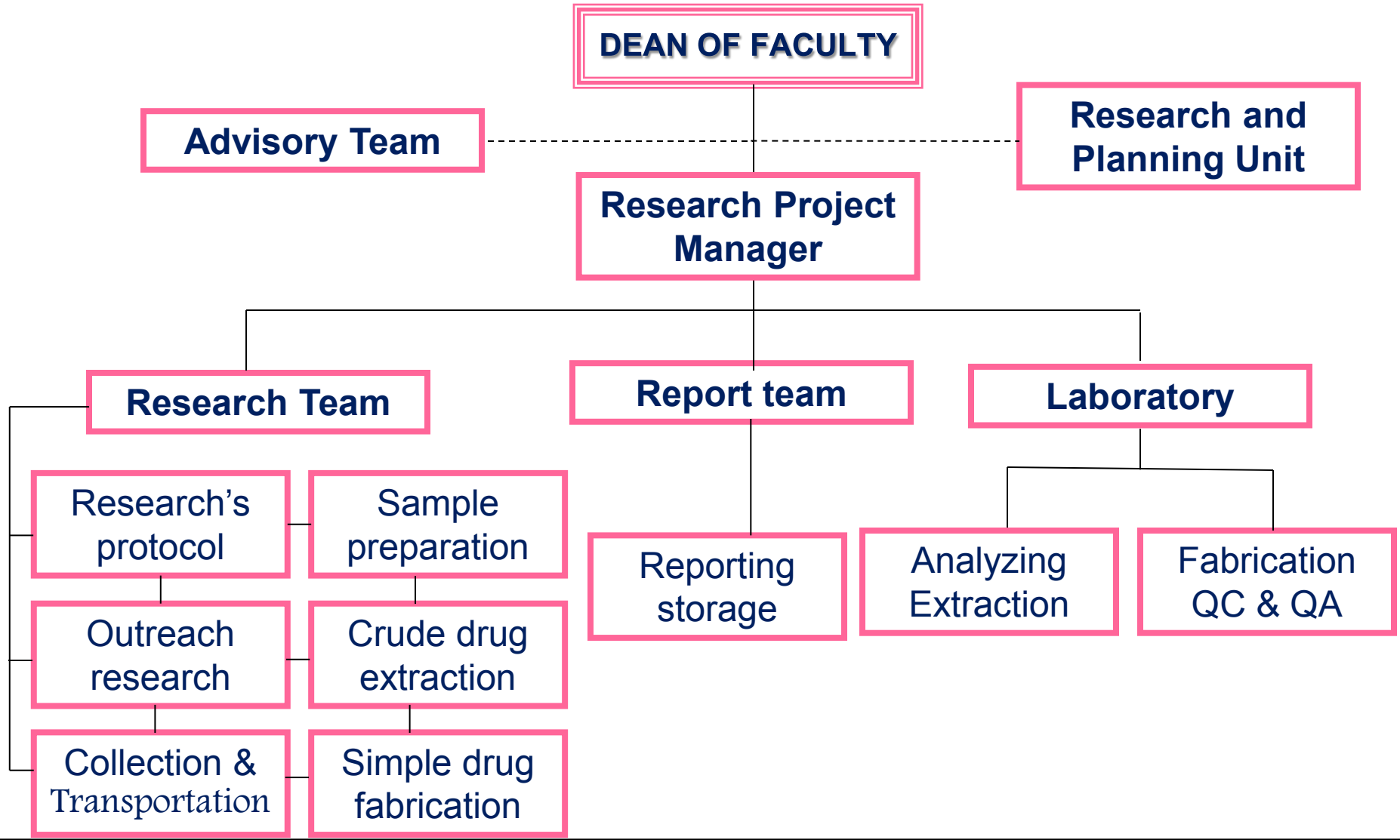
- Pharmacognosy Research Project
- Pharmacognosy Research Activities
- Vision and Goals
- General and specific objectives of the projects
- Research activity plan
- Pharmacognosy research functions
- Scientific study of crude drugs
- Individual drug study
- Outreach research and benefit of natural resources
- Expected outcome and next plan of actions

ABSTRACT:

Throughout the 1980s after the regime of the khmer Rouge, Cambodia recovered and have developed in a context of "good intensity". Cambodian Pharmacognosy research also grown up into a complete scientific system characterized by multiple components, Goals and pathways, which mediate numerous research activities and efficiencies. The development of "Pharmacognosy Research activities" in the country, including scientific studies, has enabled to illustrate a more systematic view. Although the network adequately reflects the overall philosophy of traditional medicine knowledge, its complexity hinders the relevant medical benefit inside of the community traditional therapy myths. Beside this issue a helpful strategy doing is to converge the initial community myths and scientific pharmacognosy study which aims to complement the needs in the communities in terms of disease prevention and treatment based on evidence. Hereby, we are optimistic that it will make benefit from an innovative pharmacognosy research project by using Cambodian natural resources to improve the activities of complex disease prevention and therapy in the country.

- Cambodian Pharmacognosy Research was recovered and have developed in a context of "good intensity" after regime of Khmer Rouge.
- Cambodian Pharmacognosy research was grown up into a new restored scientific system characterized by multiple components of plan.
- The development of "Pharmacognosy Research activities" in the country, including scientific studies, has enabled to illustrate a more systematic view.
- The overall complexity philosophy of traditional medicine knowledge hinders the relevant medical benefit inside of the community traditional therapy myths.
- we are optimistic that it will make benefit from an innovative pharmacognosy research project by using Cambodian natural resources to improve the activities of complex disease prevention and therapy in the country based on evidence.

PHARMACOGNOSY RESEARCH PROJECT



PHARMACOGNOSY RESEARCH FRAMEWORK

RESEARCH ACTIVITIES

STUDENT ACTIVITIES

PHARMACOGNOSY, ETHNO-BOTANY OUTREACH RESEARCH

SAMPLES COLLECTING

RESEARCH CENTER

PHARMACOGNOSY OUTREACH RESEARCH ACTIVITY

SAMPLE COLLECTING

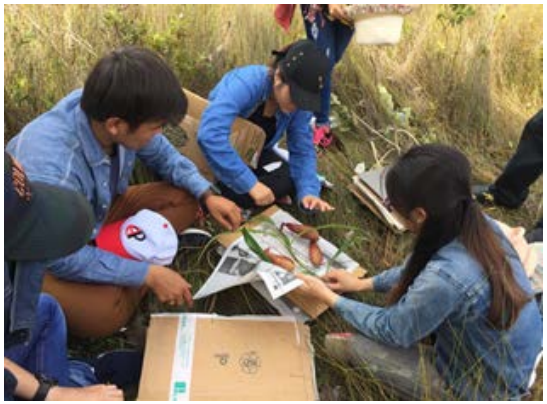
EXTRACTION,

SCIENTIFIC STUDY

REPORTING & HERBARIUM

VISION OF THE PROJECT

- To be a leading project of excellence in promoting on innovation of pharmacognosy education and research aims to contribute to the modernization and safe use of natural resources through new drug development to serve society with the efficacy and efficiency health care.



- To reach global standards in herbal drug research and collaborate for better technology exchange among the countries in the world.

PROJECT MISSION

- To build the qualify human resource to face the global challenges in herbal drug research and make them reach out to the innovative technology of new drug development.

- To be in scope dedicates to the promotion, growth for better technology and pharmacognosy modernization exchange, among the countries in the world, which aims to develop all aspects of natural products sciences.

International Collaboration

- Cambodia-China' s herbal medicine join research and technology transfer project (started in June, 2018)
- China-Asean traditional medicine book' s establishing
- 3th Asean Dean Forum 2018 on Pharmaceutical education and good pharmaceutical practice.

GENERAL OBJECTIVES OF PHARMACOGNOSY PROJECT

1.Enhancing the quality improvement of pharmacognosy knowledge and pharmacognosy research among project members and students

3.Ensuring the quality improvement (QI) and quality assurance (QA) of the project works to sustain the project.

2. Creating and strengthening the collaboration for better technology exchange among the countries in the world for the new drug finding.

4.Promoting a steady flow of funds and generating foundation to maintain the project.

SPECIFIC OBJECTIVES OF PHARMACOGNOSY PROJECT

- ***Outreach Ethno-botany research:*** *2 times per year*
- ***Crude drugs' extraction :***

  Lab works
- ***Scientific study of crude drugs***
- ***Individual drug study:***

  - Chemical test,
  - Ingredients analyzing.
- ***Pharmaceutical manufacturing:***

  Galenical production
- ***Pharmaceutical control:***

  - Adulterant test
  - Quality control

Faculty of Pharmacy	SUMMARY PROJECT PLAN

Objective-1: Enhancing the quality improvement of pharmacognosy knowledge and pharmacognosy research among faculty members and students.

Action steps	Target Indicators	Responsible persons	Budget / Resources	Remarks
1-Creating the research project concept note of in university.	A concept note was developed and approved by rector of University	Dean of Faculty	Project & partner	
2-Set up research project plan .	A concept note was developed and approved by rector of University	Research and planning Unit	Project & partner	
3-Implement project plan and activity evaluation.	Establish a summary report and keep in library	Educational office and admin	NB and partner	
4-Collecting results, reporting and publishing	Abstract, article achieved and selected for dissemination	Scientific committee and Research Unit		

Faculty of Pharmacy	SUMMARY PROJECT PLAN

Objective-2:. Creating and strengthening the collaboration for better technology exchange among the countries in the world for the new drug finding.

Action steps	Target Indicators	Responsible persons	Budget / Resources	Remarks
1.Establishing the concrete plan of MOU with local and international partners.	.Two MOU per year were developed and approved by Boards of institution partners	Dean of Faculty	Project & partner	
2-Creating join research project plan among national international partners.	.At least one join research was developed and achieved the target of plan.	Research and planning Unit	Project & partner	
3.Insuring and strengthening the collaboration between Asean Pharmnet members and other countries in the world.	. Participate in Asean Pharmnet yearly meeting and in other countries in the world.	Dean	NB and partner	

Faculty of Pharmacy		SUMMARY PROJECT PLAN		
Objective-3: Ensuring the quality improvement (QI) and quality assurance (QA) of the project works to sustain the project.				
Action steps	**Target Indicators**	**Responsible persons**	**Budget / Resources**	**Remarks**
1-To diversify donors and to develop long term partnerships with donors to support project in their endeavor.	**50 % received from donors** **25 % from University grant** **25% Students or Staffs' contribution**	Dean of Faculty & Research and planning Unit Educational office and admin	Project & partner Project & partner	
2-To conducting dissemination seminar to present the results of research.	**At least 100 participants had attended in the event**	Research and planning Unit & Academic affair Unit	Project & partner	

Faculty of Pharmacy	SUMMARY PROJECT PLAN

Objective 4: Promoting a steady flow of funds and generating foundation to maintain the project

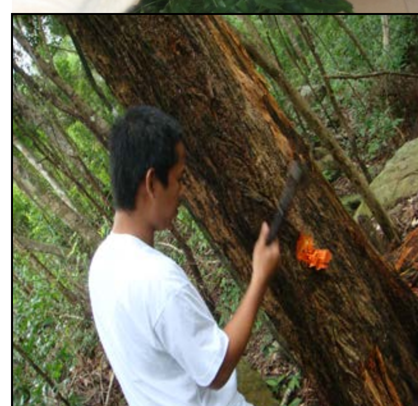
Action steps	Target Indicators	Responsible persons	Budget / Resources	Remark
1. Create a budget plan of the project	Received a budget plan and approved by Dean	Dean of Faculty & planning Unit	Project & partner	
2.Advocate to Government and non-government partners for funding	Yearly dissemination workshop on project achievement and grant promoting will be conducted	Educational office and admin		
3-Manage budget and reporting	Quarterly reports to project manager and donor	Research and planning Unit & Academic affair Unit		

Scientific study of crude drugs

- To rise out of the scientific study of drugs with accurate and sufficient descriptions.
- Main points of drug description study:
  - The form and dimensions of pieces of drug
  - Color of the samples in bulk
  - The fracture and texture
  - Odor and taste
  - Condition of the sample
  - Chemical test

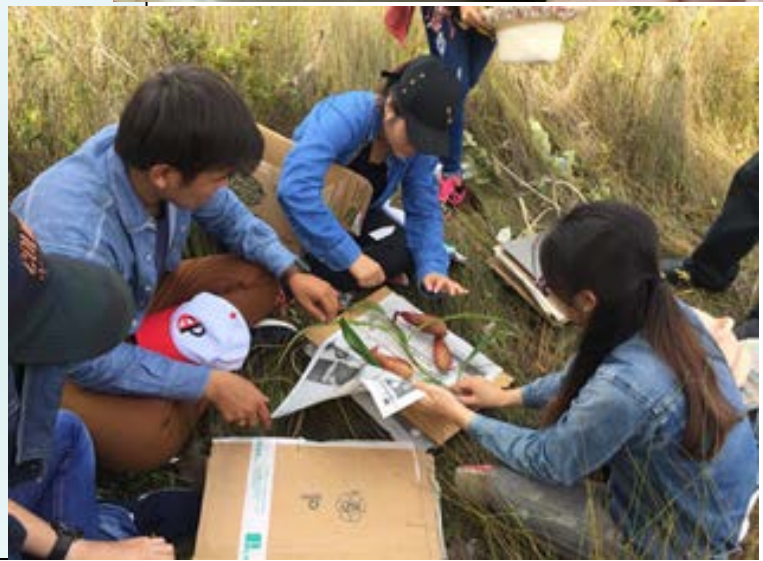
PHARMACOGNOSY ' S RESEARCH FUNCTIONS

- To identify the sources of material forming the drugs.
- To determine its morphological nature.
- To investigate its potency, purity, and freedom from admixture.
- To device methods of cultivation.
- To prescribe details of processes of collection and preparation
- to study the constituents of the drugs and investigate their chemical reactions.



INDIVIDUAL DRUG STUDY (con't)

- Adulterant testing including:
  -materials testing
  - handling during collection,
  - packing
  - transportation
- Crude drug extraction
  for Pharmaceutical manufacturing
- Test:
  - Constituent test
  - Galenical and chemical test for identify the constituents are also performed.
- Evaluation: quantitative and qualitative test.



INDIVIDUAL DRUG STUDY

- Origin: biological and geographical sources
- The history and name.
- Cultivation
- Preparation
- Collection
- Packing
- Characters:

  - physical characters

  - sensory characters: - Odour

    - Taste

OUTREACH RESEARCH ACTIVITIES

N	Research step	Student Batches/time				Dispensing description	Team leader	Student number
		PH2	PH3	PH4	PH5			
1	Out reach study and dry herb preparation	1st semester				Participant Traveling Accommodation Food Materials	2 Persons	2 cars 40 P 40 P 40 P
2	Out reach research & collecting sample for crude drug extraction		1st semester			Participant Traveling Accommodation Food Materials	2 Persons	2 cars 40 P 40 P 40 P
3	Lab works (Research laboratory)			1st semster	.Constituent testing .Ingredient Isolation .Clinical and biological essay…etc .Reporting	Participant Traveling Accommodation Food Materials	2 Persons	2 cars 40 P 40 P 40 P

Benefit of Natural Resources

"Pilot plants collected"

Name of plants	Latin´s name	Therapeutic benefit	Places of collection
ចិត្រមូលភ្លើង	Plumbago zeylanica Linn, PLUMBAGINACEAE	Dysmenorrhoea, Amenorrhea, Indigestion, Numbness, Paralysis	Hann Chey mountain, Kompong Cham province
ឈូក	Nelumbo nucifera Gaertn NYMPHAEACEAE	Spermatorrhoea, Impotency, Aging, Leucorrhoea, Restlessness, Vomiting, Heamoptisy, Tachycardia	Bathay district, Kompong Cham province
ដើមត្បាល់កិន	Abutilon indicum (L), MALVACEAE	Heal wound, Rheumatoid, Diuretic, Sedative, fever, Infection Gonorrhea,...	Hann Chey mountain, Kompong Cham province

Benefit of Natural Resources

"Pilot plants collected"

Name of plants	Latin´s name	Therapeutic benefit	Places of collection
វល្លិកំពោរ	Cissus modeccoides Planch, VITACEAE	Osteoporosis, Headache, Rheumatism, Furunculous Snake bite, Gonorrhea, Hemorrhoids, ...	SANTUK mountain, Kompong Thom province
វល្លិសារម៉ាវព្រៃ	Passiflora foetida Linn, PASSIFLORACEAE	Against itch, Sedative-hypnotic, Hypotensive effect	Hann Chey mountain, Kompong Cham province
ព្រះរញ្ជៅ	Terminalia nigrovenulosa Pierre, COMBRETACEAE	Antidiarroea, Dysentery,	Kyryrum mountain

- Up to how we have collected more than 600 samples of plants

Benefit of Natural Resources

108	Terminalia nigrovenulosa Pierre	COMBRETACEAE
	ព្រះភ្នៅ	

លក្ខណៈរុក្ខជាតិ :

ជាប្រភេទរុក្ខជាតិដើមធំ កំពស់ ១០-៣០ម ដើមរលីង ឬមានក្រម៉ រាងមូល អាចបកសំបកបាន។ ស្លឹកដុះទល់ទង រលីង ស្លេចខាងចុង ។ ផ្កាតូចៗពណ៌ស លំអងពណ៌លឿង ដុះជាកញ្ចុំប្រវែង៦សម រួតញឹក។ ផ្លែរាងវែង២៥មម មានរាងបីជ្រុង ក្រាប់រាងវែង រៀវសងខាង។ ផ្លែខែមេសា-ឧសភា ។

<u>កន្លែងរស់នៅ</u> : ជារុក្ខជាតិដុះនៅជំរៅព្រៃ ។

សមាសធាតុគីមី :

សំបកដើមមានជាតិថត់ tanin , acide cachoutanique , phlobaphène , oxalate de calcium ។

ផ្នែកប្រើប្រាស់ :

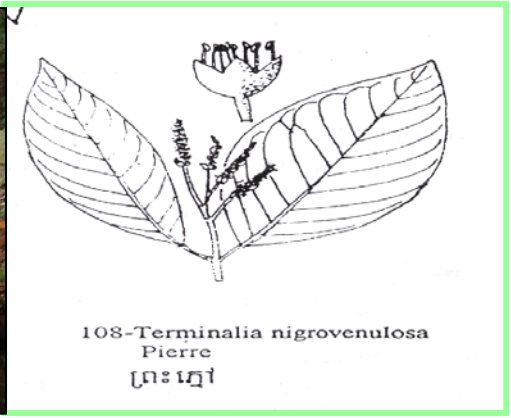
គេប្រើសំបកដើម បកជាផ្ទាំង ហាលសង្ងត ឬប្រើជាជាតិចំរាញ់យកជាតិខះជាម្សៅ ដោយប្រើវិធីស្ងោរឆាស់ ពង្រឹងនិងសង្ងត ។

វិធីប្រើ ព្យាបាល :

សំបកដើមព្រះភ្នៅ គេប្រើជាតិចំរាញ់ ភិវត ២០-៤០ក្រាម ជាតិចំរាញ់នៅរាវ ឬ ១៣ក្រាម ការស្ងួត ឬ៥០-១០០ក្រាម សំបកត្រាំជាមួយអាល់កុល (មួយភាគប្រាំ)ប្រើសំរាប់ព្យាបាលជំងឺរាគ រាគមូល និងជំងឺរលាកពោះវៀនធំ ។

ជាតិចំរាញ់ ក្រោយពេលបន្សុទ ជាម្សៅសំរាប់ប្រើចំពោះទារក ឬមួយគេផលិតជាថ្នាំគ្រាប់សំរាប់លេប ។

BENEFIT OF NATURAL PRODUCTION



PRE-EXTRACTION

Barking

. Removal of the barks longitudinal incision around the stem (~30 cm length)

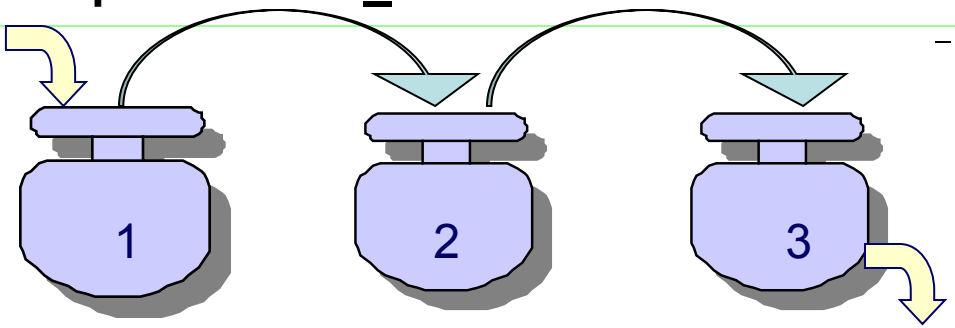
. Whittled off with a knife for producing pieces of fairly small size.

Drying

Barks drying is performed by using sun's heat in open air place or by using dry oven

EXTRACTION

- **EXTRACTION:** Method of Decoction by using boiled water to receive liquid extract.
- **EVAPORATION:** to receive hard extract: gum.
- **DRYING:** in dry oven 55 ^{0}C to 65 ^{0}C for 3 days
- **POWDERING:** milling in a special miller
- **PAKAGING:** safe packing in the special aluminum bags
- **STORAGE:** store in dry place at temperature 25 $\pm$ 2 ^{0}C



GALENICAL PREPARATION : ELIXIR OF TERMINALIA

1.Liquid extract : Elixir Preparation 1/5

- Syrup of Terminalia ……..…...1 vol
- Alcohol 80 º ……..……5 Vol
- Edulcorant……..qs

Use: Adult1 tbs x 3 time (20 gm) / day for antidiarrhoea and antidysentery.

2.Other production: Powder extract could produce the solid dosage form: Capsule and Tablet preparation (13 gm of extracted powder per day).

GALENICAL PREPARATION :

GRANULAR SACCHARIDE OF VEGETAL CHARCOAL

1. Formula:

   - Mangrove Charcoal powder…….10 gm
   - Simple Syrup …….. 75 gm
   - Crystalline Sugar……25 gm
   - Edulcorent……..qs

2.Use: Adult1 tbsp. x 3 time (20 gm) / day for antidiarrheal drug and GI track absorbent.

Excepted Outcome and next activity plan

- Outcomes of pharmacognosy research has become the key to developing better ways to monitor and improve the quality of care through out the innovative scientific found from natural resources on the globe.
- Pharmacognosy research collaboration will be able for better technology exchange among the countries in the world for the new drug finding and health care approaches in the ways of more efficacy and efficiency by using the natural resources
- A new botanic garden will set up to serve the project of pharmacognosy training and pharmacognosy research .

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- *Texbook of Pharmacognosy, T.E Wallis, Fifth edition, 2005*

Awarness of Oral precancer lesions and early detection of oral cancer: Cambodian Experience.

Dr. Sandeth Phan
Vice-Head of Technical Office and Head of Department of Oral and Maxillofacial Surgery and Dentistry, Preah Angduong Hospital
phan_sandeth@yahoo.fr

Abstract

There are lesions in oral cavity, detected by routine examination. Any lesion appearing should be carefully evaluated. A clinical diagnosis will be helpful to determine further management. Oral precancers are lesions, easily noted if the mouth is examined in a systematic way. Inaccurate diagnosis or failure to diagnose oral disease may have profound implications for both the patient and clinician. Surgical biopsy, the most common investigation, is useful to confirm the clinical diagnosis in order to determine a treatment plan. The purpose of this presentation is to introduce early detection of oral cancer and its importance. In addition, this will also provide basic knowledge for dental and medical practitioners, especially general health practitioners in Cambodia with regard to the role of biopsy in the management of such patients.

Key Words: Biopsy, clinical diagnosis

Kintaro cells for rejuvenation and treatment

Dr. Timur Badmaev, M.D.
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cambodia@kintarocells.com

Abstract

Kintaro cells is a special cells in the body that can duplicate and transform into other cells (e.g. bones, muscles). When the body is injured, stem cells are activated by the body. Stem cells travel to the injury site and transform into new cells to replace the damaged cells.

Kintaro Cells Power uses the modern Japanese technology for the production of mesenchymal stem cells for health, beauty, care, revitalisation and slowing down of aging.

This presentation will delve deeper into mesenchymal stem cells, the main ingredient that makes KINTARO CELLS™ beneficial for rejuvenating of human body.

The mission of the company is to increase the duration and improve quality of life through the clinical introduction of modern cellular technologies.

The creation of the Kintaro program of rejuvenation and treatment is a result of combined 50-year experience in stem cell research in Japan and Russia. Kintaro program is easy to use and effective.

Keywords: Kintaro cells power, mesenchymal cells, revitalization, aging, rejuvenating

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Kintaro Cells Power Corporation

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About Kintaro Cells Power

KINTARO Cells Power

Based On A Long Illustrious Track Record Of Russian Research…

1908 — The term "stem cell" was first proposed

1954 — The Medical Radiological Research center (MRRC), Russia

1969 — Mesenchymal Stem Cells were discovered

1974 — 

Dr. Anatoly Konoplyannikov, Head of Cell and Experimental Radiology Therapy Department at MRRc.

More than 5,000 clinical trials conducted for mesenchymal stem cells

2011 — 

CEO Alexei Gladkov establishes AV-Cells in Singapore. Adapts stem cell technology from MRRC for SEA market

2013 — Novena Singapore lab

2014 — Company is renamed Kintaro Cells Power, 200+ successful treatments

2016 — New branches: Vietnam, Malaysia, Thailand

2017

- Joint research established with Tokyo Medical University
- First patent for 'cellular cultivation method'
- Opening of offices in Cambodia and Dubai
- Trademarks approved in Japan, South Korea, Russia, Hong Kong, Taiwan

2018

- Application in progress for patents
- New lab and office in Hong Kong

2011-2017:

800 stem cell treatments in Southeast Asia

KINTARO Cells Power

…Our Expanding Affiliates Network…

KINTARO Cells Power

…And The Very Latest Cutting Edge Japanese Technology

KINTARO CELLS™ Are Manufactured In Japan

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Over 50 International Certificates And Patents Held

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The Science Behind KINTARO CELLS™

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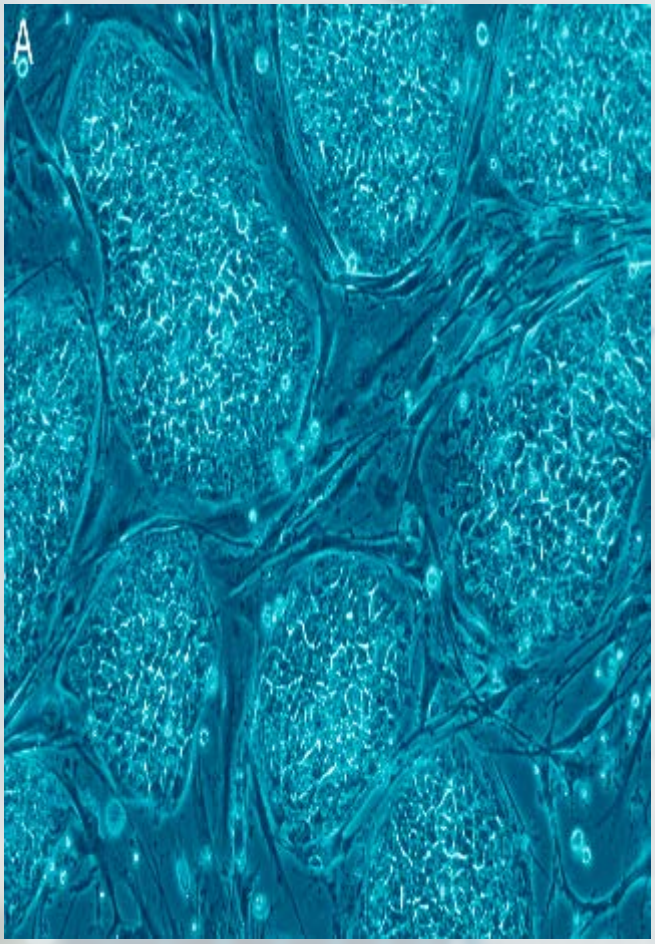
Stem Cells: The Body's Natural Healers



- Special cells in the body that can duplicate and transform into other cells (e.g. bones, muscles)
- When the body is injured, stem cells are activated by the body
- Stem cells travel to the injury site and transform into new cells to replace the damaged cells

Clinical Application Of Stem Cells

- 2025: World Health Organisation (WHO) predicts that 30% of patients in clinics will receive MSC injections
- Stem cells make it possible to treat serious diseases and increase life expectancy

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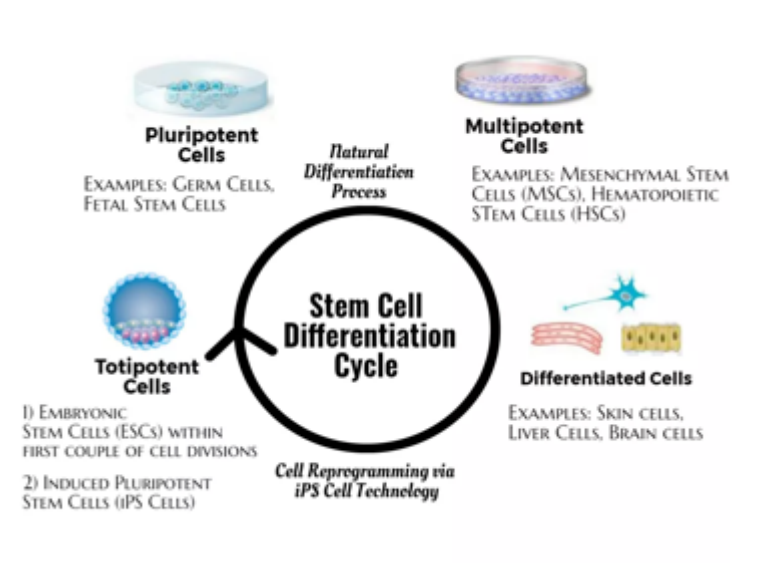
Types Of Stem Cells



According to period:

- Embryonic
- Fetal
- Postnatal
  - Cord blood
  - Adult

According to differentiation ability:

- Totipotent
- Pluripotent
  - Embryonal
- Multipotent
  - Hamopoetic
  - **Mesenchymal (MSC)**
- Unipotent

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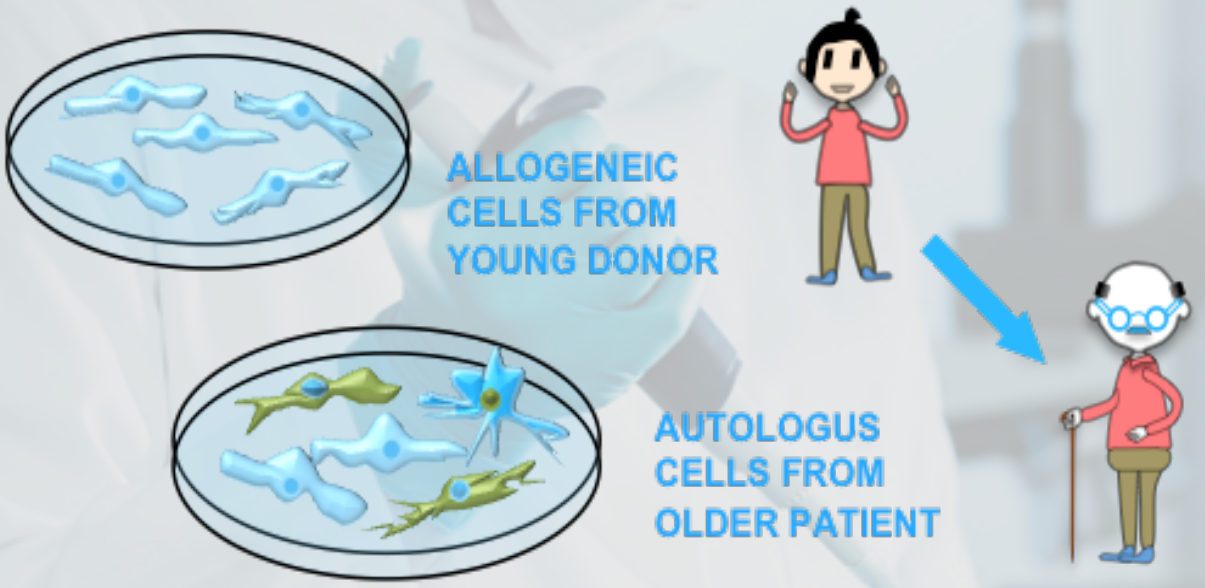
Types Of Stem Cells



According to recipient

- Your body (autologous)
- Donors
  - Allogeneic (Cells from other humans)
  - Xenogeneic (Cells from animals)

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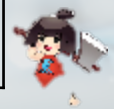
What Makes KINTARO CELLS™ Better?

Other Stem Cells	KINTARO CELLS™
Embryonic Stem Cells: • Used in laboratory experiments • Ethical issues with sourcing	• Mesenchymal Stem Cells sourced from bone marrow donors • No ethical issues • Safe form of therapy
Adipose Stem Cells: • Not very effective for medical and anti-aging use • Used more for cosmetic therapy	• More effective for treating diseases like diabetes, kidney and liver diseases
Umbilical Cord Stem Cells: • Expensive procedure because must be conducted at the birth site	• Cheaper procedure than umbilical cord stem cell production • Sustainable, renewable source through donors
Xenogenic Cells • Animal cells may not contain properties beneficial for human health	• Allogeneic Cells – Cells are derived from human donors with the effects lasting between 2 and 4 years
Dead Stem Cells • Limited growth factors and not as effective as live stem cells	• Live Stem Cells produce better and sustained results for your health



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Kintaro Cells Power Maintains The Highest International Standards Of Stem Cell Production

Department of Advanced Cellular Therapy
Tokyo Medical University

Progress report for Bone-Marrow Stromal Cells from KINTARO Cells Power Corporation

1. Cell culture characteristics:

Source	Mesenchymal stem (stromal) cells from human bone marrow (BM)
Lot. No.	KNT_D_170714, KNT_L_170714, KNT_80_170825, KNT_86_170825
Cells growth media	Xenogeneic free
Doubling time	108 hours
Passage	4
Total cell number	200 000 000 cells
Cells characteristics/Shape	Plastic adherent/ typical spindle type cells
Content of viable cells, %	96 % ± 2%

2. Immunophenotyping (FACS):

Cell Surface MSC Marker	Expression	Cell Surface Non-MSC Marker	Expression
CD73	Positive	CD34	Negative
CD90	Positive	CD45	Negative
CD105	Positive	HLA-DR	Negative

3. Cytogenetic study:

Normal karyotype without structural rearrangement confirmed by spectral karyotyping (SKY).

4. Differentiation tests:

Confirmed ability to differentiate into adipocytes, osteocytes, and chondrocytes.

Date: 24 October 2017

Tomohiro Umezu, PhD
Junko H. Ohyashiki, MD, PhD
Kazuma Ohyashiki, MD, PhD

Quality checks on the cellular cultures of KINTARO CELLS™ are done at Tokyo Medical University

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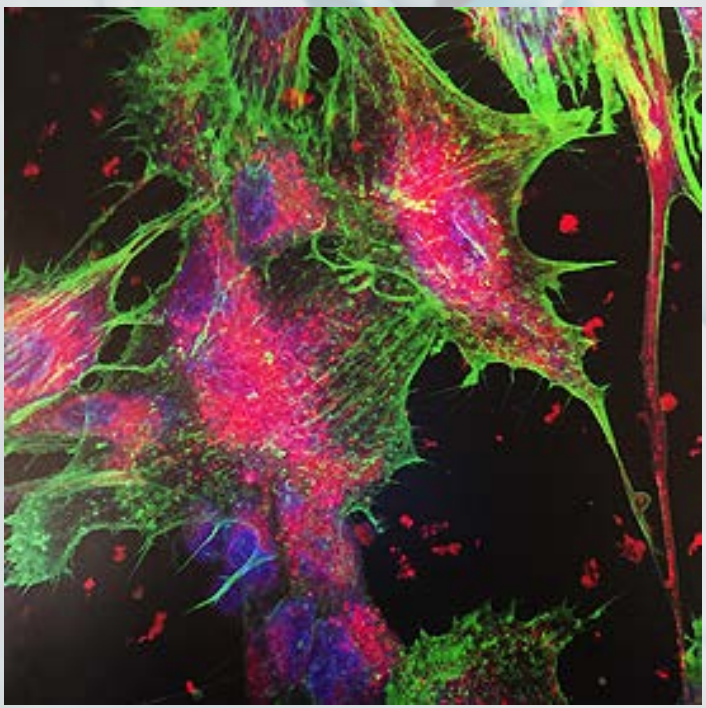
Why Are MSCs So Highly Sought After?



- MSCs can produce a different system's stem cells, transforming into different cells as needed
- MSCs have a pathotropic effect that repairs damaged parts of organs and tissues

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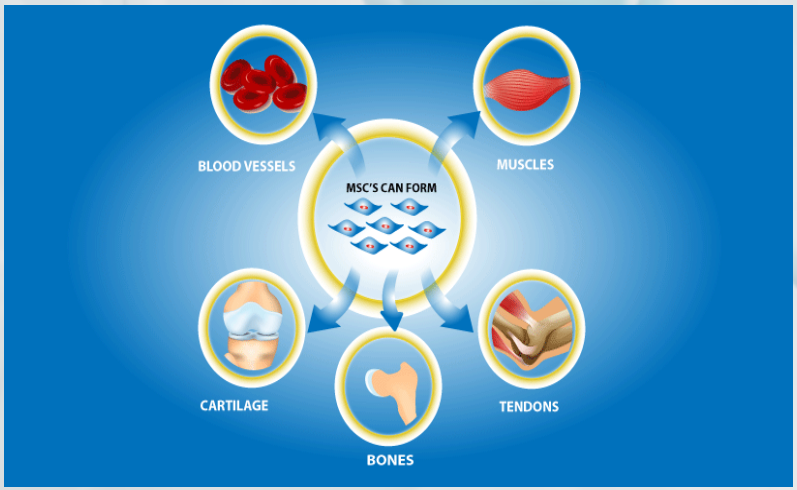
What Is So Unique About MSCs?



- MSCs carry unique properties compared to other adult stem cells
- MSCs have high plasticity – ability to produce a different system's stem cells
- MSCs can differentiate into cells of different adult tissues (e.g. bones, cartilage, adipose tissue)

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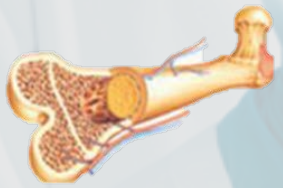
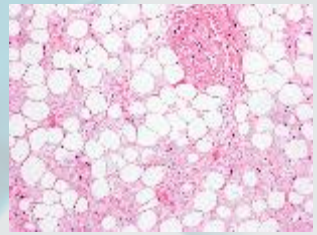
Where Can MSCs Come From?

Mesenchymal Stem Cells



Bone marrow



Adipose tissue

Umbilical cord and blood

Other sources

KINTARO CELLS™ use mesenchymal stem cells from bone marrow, extracted from vetted healthy donors. **Live cells** are cultivated in our laboratories and injected fresh in the recipients **within 48 hours** of harvesting.

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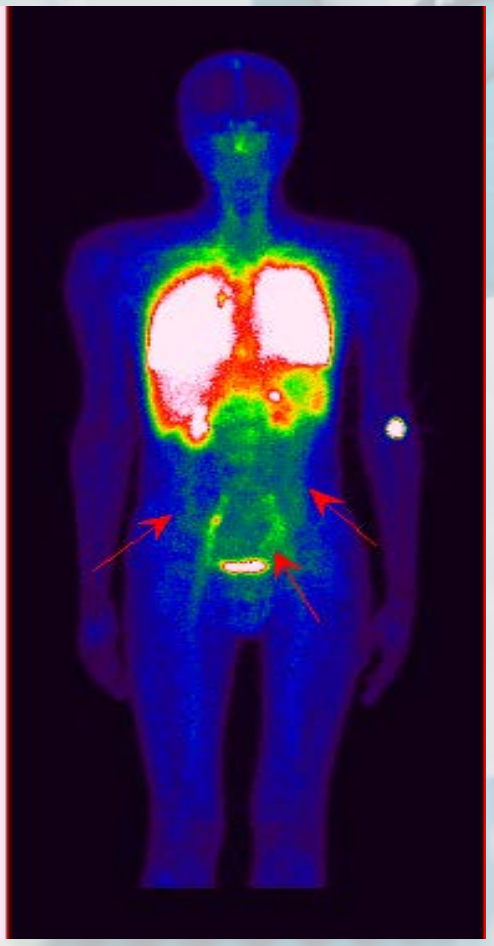
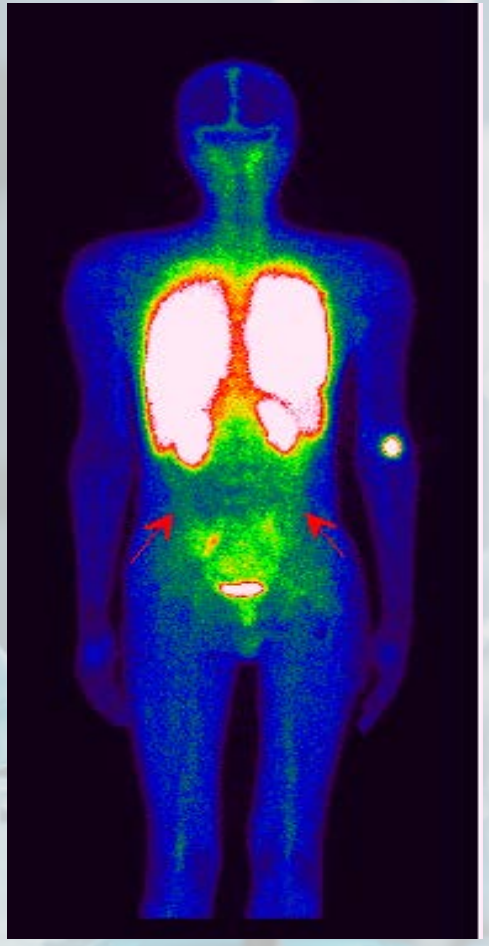
Biodistribution of MSCs

10 min



After introduction of MSCs, the cells distribute themselves around the body and heal damaged organs and tissue.

2 hours



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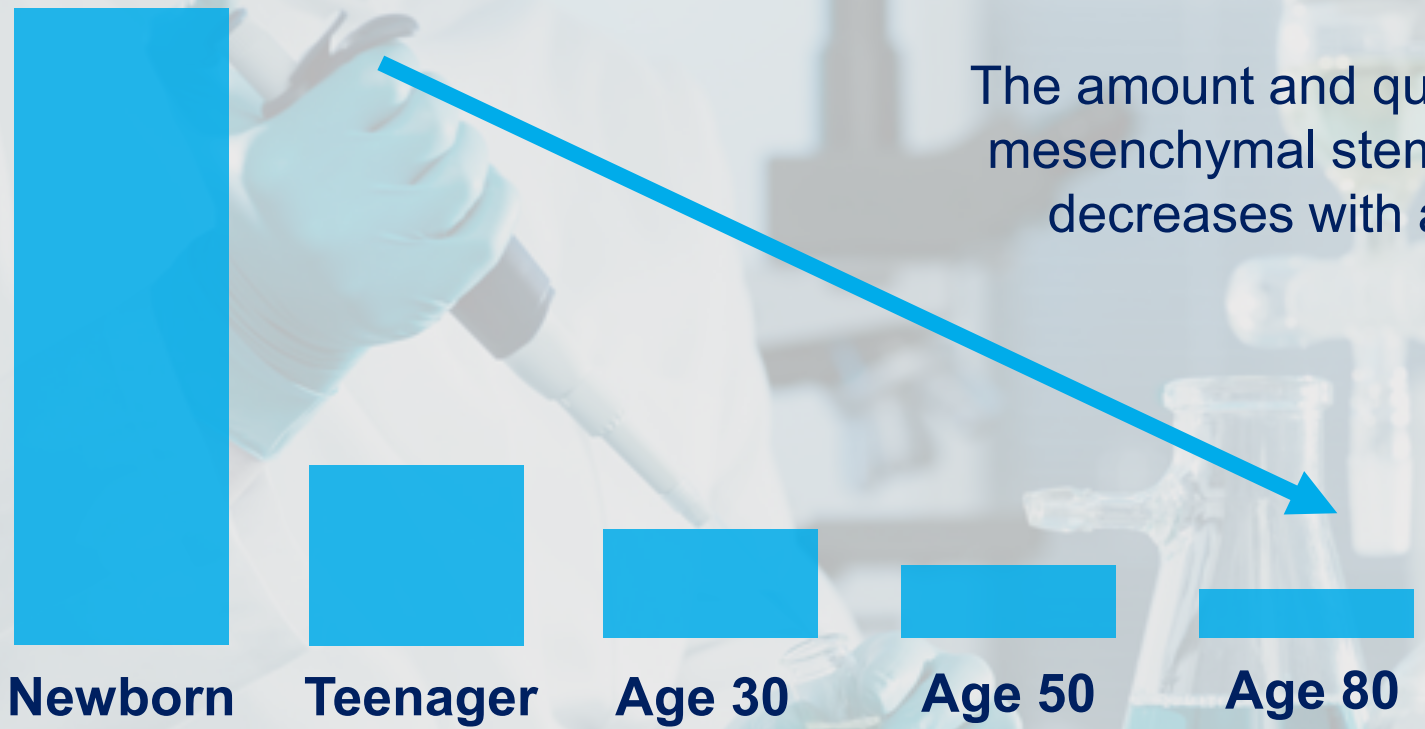
The Younger The Better



KINTARO CELLS™ infusion puts between 200 and 250 million stem cells in the body, returning levels to that of ~ 30 year old

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The Benefits Of KINTARO CELLS™

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KINTARO CELLS™ Are Safe To Use

- No negative side effects
- Manufactured under strictly controlled conditions
- Using Japanese modern scientific breakthroughs along with state-of-the-art modern technology
- Cooperation with leading scientific centres
- Educational training program for doctors

TOKYO MEDICAL AND DENTAL UNIVERSITY

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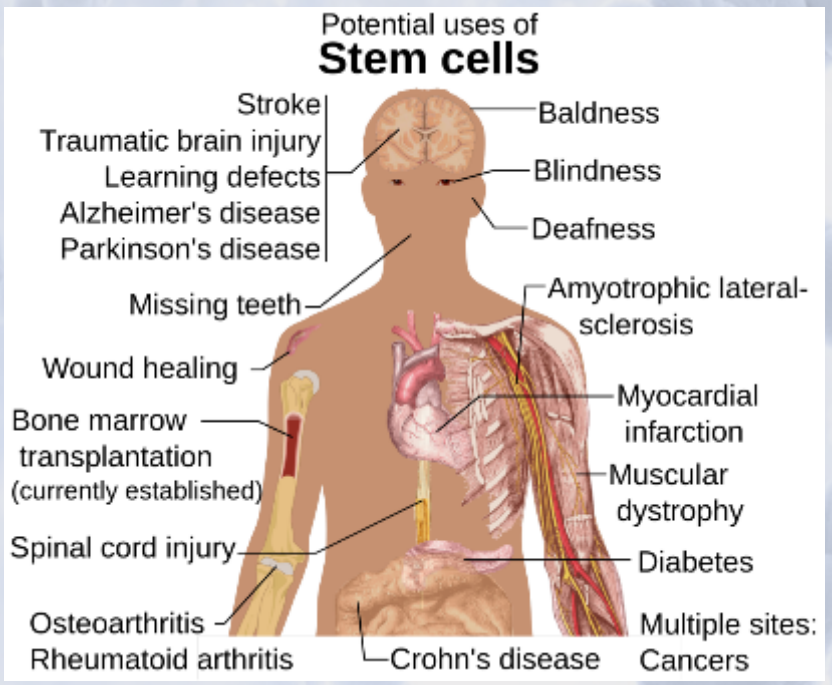
KINTARO CELLS™ Benefit Your Overall Well-Being

KINTARO CELLS™ are able to help in the treatment of:



Anti-Aging and Preventive Treatment
Blood Pressure
Brain Injury
Chronic Diseases/Allergies/Eye Disorders
Diabetes
Erectile Dysfunction
Hair Treatment
Heart Diseases
Kidney Disease
Liver Disease
Multiple Sclerosis
Orthopedic Disorders
Skin Rejuvenation
Stroke

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How To Use KINTARO CELLS™

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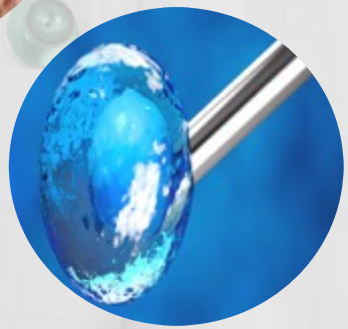
Four Main Methods Of Administering

Intravenous Method

Local Administration

Exterior Usage



Mixture of All

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Intravenous Method

How Often	Recommended Course
It is recommended to introduce KINTARO CELLS™ into the patient at intervals of 1 month, 3 months or 6 months, depending on their diagnosis by medical professionals from Kintaro Cells Power	From 1 to 6 times per year (Depending on the diagnosis of the patient and the condition of time)

- Intravenous introduction of KINTARO CELLS™ are able to enter damaged parts of organs and tissues and repair them
- The KINTARO CELLS™ have angiogenic, antiapoptotic, antioxidant and mitogenic effects

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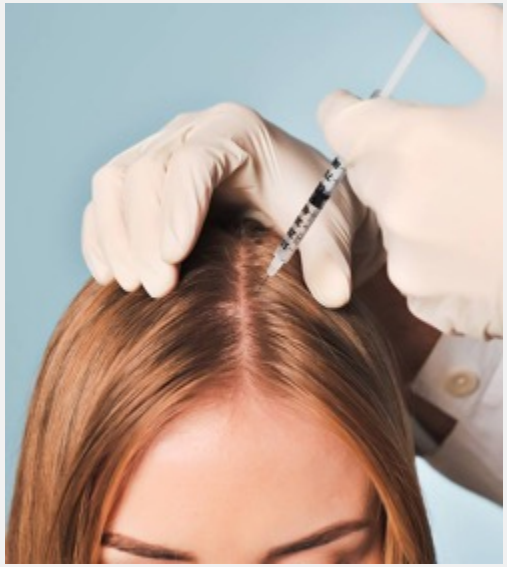
Local Administration

How Often	Recommended Course
Depends on the condition and diagnosis of the patient	From 1 to 6 times per year (Depending on the diagnosis of the patient and the condition of time)



- Mesotherapy is a popular non-surgical cosmetic manipulation
- Very effective in producing results – works directly with problem areas of the face and skin
- Suitable for younger clients
- Can be introduced in the acupuncture points

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You Are Always In Safe Hands

Kintaro Cells Power representatives ensure that you are well taken care of before, during and after your KINTARO CELLS™ treatment.

Precautions

- *No alcohol for 3 days*
- *No intensive exercise before treatment*

Contraindication

- *Pregnant women*
- *Lactating women*
- *Cancer patients*

Possible Side Effects

- *Some patients may experience a temporary fever for 4 hours*
- *Symptoms are temporary and subside within 1 day*

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Case Studies

KINTARO CELLS™ Used For Treating Diabetes

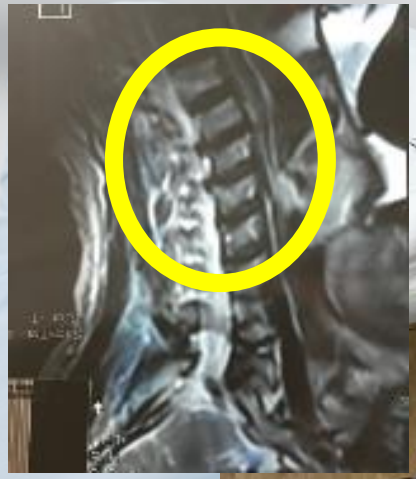
A 66 year old male patient was diagnosed with Type 2 diabetes. For three years, his glucose level increased rapidly. After undergoing a KINTARO CELLS™ treatment his glucose level began to normalize.

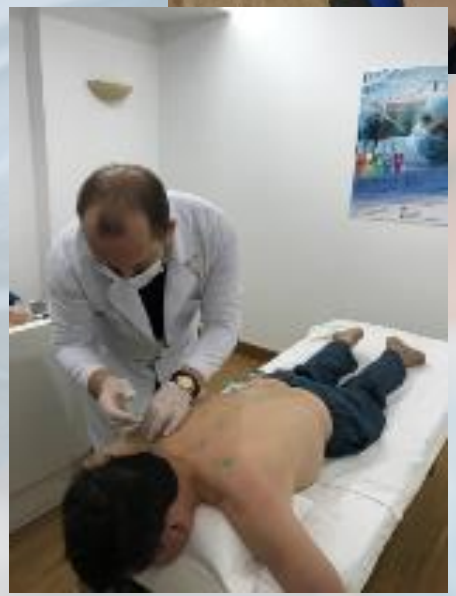
4	血糖 空腹 mg/dL	空腹時 70～109	160	137	126	能	772	尿中クレアチニン	尿CRE		
	尿糖 (mg/dL)	陰性	陰性	陰性	陰性		781	尿中尿酸	尿UA		
	HbA1c(NGSP) %	4.6～6.2				糖	142	血糖値	GLU	100	空腹時70～109
	注）H25年4月よりJDS値からNGSP値に変わりました（☆印：JDS値）						143	HbA1c	HbA1c	6.9 *	4.6～6.2
1	尿酸 mg/dL	7.0以下	5.6	5.6	5.9		131	ナトリウム	Na		135～150

KINTARO CELLS™ Used For Treating Paralysis

A 92 year old patient experienced an ischemic stroke in 2015 and paralysis in his left leg. A single intravenous infusion of KINTARO CELLS™ resulted in increased sensitivity in his left leg after two months of the procedure.

KINTARO CELLS™ Used For Treating Orthopedic Problems





- 65 year old patient with orthopedic problems experienced frequent pain and limited movement in limbs
- After receiving a single intravenous infusion and local injection of KINTARO CELLS™, he no longer experienced pain, able to move hand

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KINTARO CELLS™ Rejuvenation Result

2006 2007 2008

A 72 year old patient from Japan used two intravenous infusions, mesotherapy of KINTARO CELLS™

KINTARO CELLS™ Rejuvenation Result

2018

After a KINTARO CELLS™ intravenous injection procedure, a patient from Egypt started to feel more energetic and experienced a better quality of life.

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Thank you

KINTARO Cells Power

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