



FATHER MULLER MEDICAL COLLEGE

ACCREDITED BY NAAC WITH 'A' GRADE
(FMMC a Unit of Father Muller Charitable Institutions)



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FMMC/NAAC/SSR/55/2019

02.12.2019

Ref. No :

Date :

SUPPORT FOR MIDCOURSE IMPROVEMENT

Continuous assessment of the students are done by,

1. Internal assessments - Theory, practical and viva voce.
2. Clinical posting - Bedside clinic.
3. Monthly tests.
4. MCQ test.

Students who have not performed to the mark are interacted by the faculty or HoD. Feedback is given to such students about their performance. All academic assistance is provided to such students. Students are given an opportunity to improve their performance by conducting Betterment test or Make up test.

Institute has active Mentor-mentee system to support the student in academic as well as in other matters.

Dr Jayaprakash Alva

DEAN

FATHER MULLER MEDICAL COLLEGE
KANKANADY, MANGALORE-575002

FATHER MULLER MEDICAL COLLEGE, MANGALURU
DEPARTMENT OF FORENSIC MEDICINE & TOXICOLOGY

Phone: 0824 2238265

e mail: fmmc@fathermuller.in

FMMC/FMT/124/2018

Date: 01.08.2018

From:

Dr. Nagesh K R
Professor & Head
Dept. of Forensic Medicine
FMMC, Mangalore.

To:

The Administrator,
Father Muller Medical College, Mangalore.

Through Proper Channel.

Rev. Father,

Sub: Remedial measures for Slow Learners & activity for Advance Learners of
2nd MBBS 5th Term students - reg.

1. The Department of Forensic Medicine conducted an activity for slow learners by giving important questions for 2-3 chapters and ask them to submit the assignment by answering the questions through open book system. (Conducted by Dr. Hareesh S Gouda)
2. The Department of Forensic Medicine conducted an activity for the Advance learners through MCQ using Kahoot on 23.07.2018. (Conducted by Dr. Karen Castelino). The report is attached.

Thanking you.

Your's sincerely,



Professor & Head
DEPT. OF FORENSIC MEDICINE
Father Muller Medical College

Overview

Forensic Medicine MCQ

Played on	23 Jul 2018
Hosted by	Karencastelino
Played with	63 players
Played	20 of 20 questions

Overall Performance

Total correct answers (%)	57.84%
Total incorrect answers (%)	42.16%
Average score (points)	10932.73 points

Feedback

How fun was it? (out of 5)	4.58 out of 5			
Did you learn something?	100.00% Yes	0.00% No		
Do you recommend it?	100.00% Yes	0.00% No		
How do you feel?	85.37% Positive	14.63% Neutral	0.00% Negative	

FATHER MULLER MEDICAL COLLEGE MANGALORE
DEPARTMENT OF FORENSIC MEDICINE AND TOXICOLOGY

27.06.2018

CIRCULAR

This is to bring to the notice of the following students of 4th Term who have scored less than 50% marks in the Ist Sessional Practical Exam and IInd Sessional Theory Exam held on 07.05.2018 and 11.06.2018 to 14.06.2018 respectively that they are instructed to meet the HOD on 29th June 2018 at 9.30 am.

Sl.No	Roll No	Name of the student	Reg. No.
1	2 ✓	Mr. Abhishek D Kuriakose	16M3397
2	10	Mr. Amruth T D	16M3405
3	36 ✓	Mr. Devakumar E	16M3431
4	42 ✓	Mr. Gaurang Kamalapurkar	16M3437
5	59	Mr. Libnus B Varghese	16M3458
6	70 ✓	Ms. Neha Joy	16M3470
7	79	Mr. Pavan H A	16M3479
8	87	Mr. Rahul Kumar	16M3487
9	101 ✓	Mr. Rohith M R	16M3502
10	106 ✓	Mr. Sandesh	16M3508
11	107 ✓	Mr. Sanjay R Shetty	16M3509
12	126	Ms. Sunanda N	16M3529
13	128 ✓	Mr. Syed Roshan	16M3531
14	132	Mr. Tasha Paul	16M3535
15	139	Mr. Vivek Kumar	16M3543
16	140	Ms. Vivian Margaret Dsouza	16M3544
17	143 ✓	Mr. Tarun Jasper Noble	15M4293
18	144	Ms. Aiswarya Anand	14M5643
19	145 ✓	Mr. Mohemmed Nifson Yusuf	16M1016

Dr. Nagesh K R
Professor and Head

FATHER MULLER MEDICAL COLLEGE MANGALORE
DEPARTMENT OF FORENSIC MEDICINE AND TOXICOLOGY

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Dr. Nagesh K R
Professor and Head

Professor & Head
DEPT. OF FORENSIC MEDICINE
Fr. Muller Medical College

FATHER MULLER MEDICAL COLLEGE, MANGALURU
DEPARTMENT OF FORENSIC MEDICINE & TOXICOLOGY

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19-7-2018

Assignment for students who have scored < 50 % in the 2nd Sessional examination

MBBS V term

Topics: Mechanical injury, Regional & Transportation injury, Thermal injury and MLA of wounds.

Short Essays:

10 x 5 marks = 50 marks

- 6 1. Classify mechanical injuries. Write differences between laceration and incised wound.
2. Wound of entry from shotgun firearm at various ranges.
3. Wound of entry from rifled firearm at various ranges.
4. Ricochet bullet and Tandem bullet.
5. Extradural haemorrhage.
6. Whiplash injury and Railway spine.
7. What are Coup and contre-coup injuries ? Explain with suitable examples.
8. Post-mortem findings in death due to burns.
9. Enumerate causes of death due to burns. Write differences between burns and scalds.
- 10.S. 320 IPC.

Students are instructed to submit the assignment on or before 31-7-2018.


Dr. Nagesh KR

HOD of Forensic Medicine

Professor & Head
DEPT. OF FORENSIC MEDICINE
F. Muller Medical College

FATHER MULLER MEDICAL COLLEGE, MANGALURU
DEPARTMENT OF FORENSIC MEDICINE & TOXICOLOGY

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01-08-2018

Assignment for students who have scored < 50 % in the 2nd Sessional examination

MBBS V term – Assignment 2

Topics: Sexual Jurisprudence and Infant death.

Short Essays:

6 x 5 marks = 30 marks

1. Classify sexual offences. Define Rape as per Section 375 IPC.
2. Describe the findings in a case of rape of,
a) virgin female b) female accustomed to sexual intercourse.
3. Describe the local findings in a habitual passive agent of sodomy.
4. Define impotency. Discuss in brief the causes of impotency.
5. Artificial insemination.
6. Signs of recent delivery in the living and the dead.
7. Medical Termination of Pregnancy Act, 1971.
8. Define Infanticide. Discuss signs of live birth.
9. Battered baby syndrome.
10. Sudden Infant Death Syndrome

Students are instructed to submit the assignment on or before 14-08-2018.


(Dr. Nagesh KR, HOD)
Professor & Head
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FATHER MULLER MEDICAL COLLEGE, MANGALURU
DEPARTMENT OF FORENSIC MEDICINE & TOXICOLOGY

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17-8-2018

Assignment for students who have scored < 50 % in the 2nd Sessional examination

MBBS V term – Assignment 3

Topics: Forensic Psychiatry, FSL & Trace evidence, General Principles of Toxicology, Insecticides.

Short Essays:

6 x 5 marks = 30 marks

1. Civil responsibilities of a mentally ill person.
2. Criminal responsibility of a mentally ill person. Add a note on S. 84 IPC.
3. Restraint of mentally ill person.
4. Micro-chemical tests for blood.
5. Polygraph.
6. Duties of a Registered Medical Practitioner in a case of poisoning.
7. Antidote.
8. Preservation of viscera in a case of death due to poisoning.
9. Mechanism of action and clinical features of Organophosphorus poisoning.
10. Treatment and postmortem findings in Organophosphorus poisoning.

Students are instructed to submit the assignment on or before 31-8-2018.


(Dr. Nagesh KR, HOD)

Professor & Head
DEPT. OF FORENSIC MEDICINE
Fr. Muller Medical College

11/05/18

#CHEMOTHERAPY

KHATHIJA SANA

DOCUMENT TEST -

DEPT. OF PHARMACOLOGY
MULLER'S MEDICAL COLLEGE
MANGALORE - 575 007

ISM4246

1. 2 Advantages of Amoxicillin over Ampicillin
2. What is Probiotic. Give 2 examples
3. Supra-infection
4. 2 uses and adverse effects of sulfonamides
5. Write 4 uses of fluoroquinolones
6. Mechanism of action of Penicillin
7. List four common properties of Aminoglycosides
8. Write 2 uses and 2 Adverse effects of Erythromycin
9. Write 2 uses and 2 adverse effects of Rifampicin
10. Lepra reactions.

Answers

8. Erythromycin

Uses:

- i) Streptococcal infection: Erythromycin is the drug for streptococcal infection
- ii) Diphtheria: It is given in patients suffering from Diphtheria

Adverse effects:

- i) Hepatitis with cholestatic jaundice is commonly seen
- ii) Epigastric disturbances like Nausea, Vomiting can also be seen.

9. Rifampicin

Uses:

- i) Mycobacterium tuberculosis. It is the first line drug used for this along with other drugs
- ii) P. Tetovaki Infection: Rifampicin can also be used for this infection

Adverse effects:

- i) Peripheral Neuropathy
- ii) Hepatotoxicity

10. Lepra reaction

It is an acute inflammatory reaction

They are of 2 types

Lepra I and Lepra II reaction

Lepra II reaction is also called Erythema nodosum reaction.

1. Following are the advantages of Amoxicillin over Ampicillin:-
- does not act on

7. Following are the properties of Aminoglycosides:-

- It acts on both gram positive and gram negative bacteria.
- There are lesser adverse effects.
- They have longer duration of action.
- Aminoglycosides inhibit protein synthesis.

2. Sulfonamides

uses:-

1) Bacterial infections

Adverse Effect:-

Nausea, Vomiting

5. Fluoroquinolones

uses:-

- It can be given in urinary tract infection.
- Also given in bacterial infection.

7½/20

Rh

Improvement Test
PharmacologyDEPT. OF PHARMACOLOGY
MULLER'S MEDICAL COLLEGE
MANGALORE - 575 0021) 2 Advantages of Amoxicillin over
Ampicillin

2) What is Probiotic? Give 2 Examples.

3) Suprainfection.

4) 2 uses & 2 Adverse effects of Sulphonamides

5) 4 uses of fluroquinolones

6) Mech of action of penicillin

7) List 4 common properties of Aminoglycosides

8) 2 uses & 2 adverse effects of Erythromycin.

9) Write 2 uses & 2 adverse effects of rifampicine

10) Lyra Reaction.

Answers③ Suprainfection : Infection which precedes a bacterial infection
is called Suprainfection.e.g.: Fungal infections.

B

① a) Faster Acting & food doesn't interfere with absorptionb) More effective than Ampicillin.② Probiotics : ~~Artificial~~A Substance which enhances the growth of Normal
Commensal flora of the bodye.g.: Artificial drinks (Yakult), Curd

④ Uses: Treatment of Pneumonia
used as a combination drug is cotrimonasole.

⑤ uses: A typical Pneumonia

→ Meningitis

→ UTI

→

⑥ Penicillin Inhibits crosslinking of Peptidoglycan chains & thus inhibit cell wall synthesis.

→ Bactericidal in Nature

→

Penicillin

↓
Inhibits Cell wall
Synthesis

↓
Bactericidal Action

⑦ They are poorly absorbed when taken orally.

5/20

Independent Test

DEPT. OF PHARMACOLOGY
MULLER'S MEDICAL COLLEGE
MANGALORE - 575 002

PETER SURAJ JOSEPH
DM5593

Roll NO: 11

① Two advantages of amoxicillin over ampicillin

- Answer: ② Amoxicillin is longer acting drug
③ Can be taken after food.

② What is probiotic? give 2 examples

Answer: Probiotic is any drug that helps restore the ~~fla~~ ^{flora} flora of the gut. Promotes growth of microorganisms
Ex: Lactic acid bacteria in curd.

③ Supra infection

Answer: This is a type of infection that occurs during the course of the primary infection

④ Two uses & 2 adverse effects of sulphonamides

- Answer: Uses
① drug of choice in the treatment of UTI
② Crystalline in nature due to alkalini pH
Adverse effect
③ used in the treatment of syphilis
④ causes hypersensitivity reaction

⑤ Write 4 uses of fluoroquinolones

- Answer: ① used in the treatment of UTI
② used in treatment of diseases caused by gram negative bacteria
③ used in treatment of typhoid fever

⑥ Mechanism of action of penicillin

inhibition of cross linkage of peptidoglycan chain
↓
inhibition of cell wall synthesis
↓
lysis of pathogen

⑦ List 4 common properties of Aminoglycosides

①

⑧ write 2 uses & 2 adverse effects of erythromycin

uses

diphtheria

→ Treatment of ~~diphtheria~~

→ Treatment of Gram positive bacterial infection

⑨ write 2 uses & 2 adverse effects of rifampicin

uses

Treatment of tuberculosis

adverse effects

hypersensitivity

⑩ Lepna reaction

8 1/2 / 20

1) Antimicrobial combination

Antimicrobial combination is when the drugs given separately don't have much action but when given together like a combination they have more action.
eg. Cotrimoxazole is a combination of Sulfamethoxazole and Trimethoprim. When given separately both have bacteriostatic action but given together they have bactericidal action (ratio is 1:5) (Sulfamethoxazole - Trimethoprim)

2) β -lactamase inhibitors

- β -lactamase inhibitors are clavulanic acid, sulbactam and tazobactam
- β -lactamase inhibitors are those that inhibit the action of β -lactam antibiotics by breaking the ring
- They cannot be given alone, always given as a combination -
 - Clavulanic acid + ampicillin
 - Sulbactam + amoxicillin
 - Tazobactam + piperacillin

3) General properties of aminoglycosides:

- Binds to 30S ribosomes
- Only act in alkaline pH
- Prevents protein synthesis
- Has bactericidal effect
- Causes misreading of mRNA and terminates protein synthesis
- Example of ~~short acting~~ ~~Tetracycline~~ aminoglycosides is amikacin, kanamycin

4) Third generation cephalosporins

Cefotaxime, Ceftriaxone, Cefixime.

Uses:

- (i) Gram negative infection
- (ii) Gonorrhoea
- (iii) Meningitis
- (iv) Typhoid

5) Tetracyclines contraindicated in children and pregnancy:

Tetracyclines are contraindicated in children and pregnancy because

- (i) Because of their action on teeth and bones
- (ii) Can cause hepatic necrosis
- (iii) Can cross fetal-placental barrier and cause issues

6) Cotrimoxazole - Uses:

- Used in Urinary tract infections
- Used in Chancroid
- Used in pneumocystic pneumonia infection
- Used in respiratory tract infections

7) Macrolides

Macrolides are Erythromycin, Azithromycin, Clarithromycin.
Newer macrolides are Telithromycin

Advantages

Azithromycin is longer acting and has better tissue penetrability compared to Erythromycin. Azithromycin is also acid stable.

- Azithromycin is effective against *Mycobacterium avium* complex, *H. pylori*, ~~*Haemophilus influenzae*~~ and *Tenoplasma gondii* as erythromycin is not.

8) Superinfection:

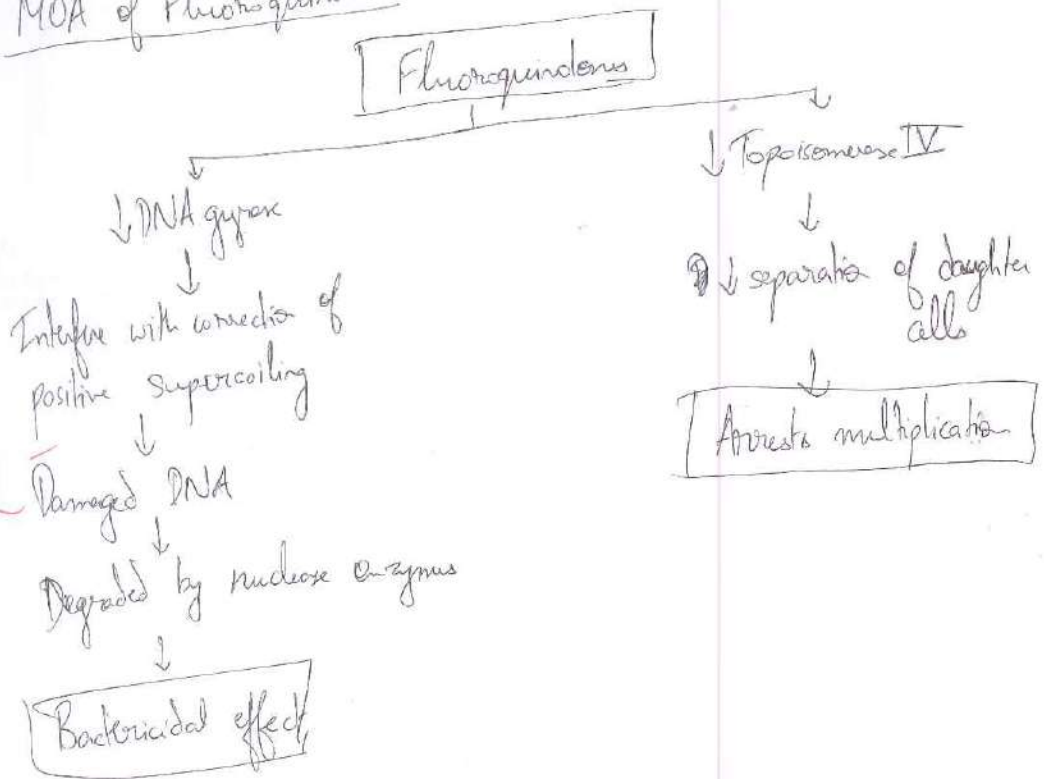
• Superinfection / superinfection is when there is arrival of newer infections in a person because of the use of antimicrobials.

• The common sites are genitourinary, gastrointestinal and respiratory sites.

• This can be prevented by ~~the~~ reducing the use of broad spectrum and using narrow spectrum antibiotics.

• By stopping the misuse of antibiotics for smaller reasons.

9) MOA of Fluoroquinolones



Improvement Test

Name: Vishal Dora
Roll # 1148 Res # 46M3592

DEPT. OF PHARMACOLOGY
MULLER'S MEDICAL COLLEGE
MANGALORE - 575 002

PHARMACOLOGY IMPROVEMENT TEST

2. β -LACTAMASE INHIBITORS

• Drugs ~~name~~ Examples

- Clavulanic Acid - Sulbactam - Tazobactam

• Mechanism of Action

Combines with a β lactam antimicrobial drug

↓
Used ~~with~~ β lactamase inhibitor binds to β lactamase enzyme and inhibits it

↓
No degradation of β lactam antibiotic

↓
 β lactam antibiotic performs its action by inhibiting transpeptidation

↓
Inhibits cell wall synthesis

↓
Bacterial cell lysis

↓
Bactericidal effect

• Therapeutic Uses

- ~~Bacterial~~ ~~cont~~ Infections caused by bacteria containing β lactamase enzyme

→ Eg: Actinobacter, Citrobacter, Enterobacter species

25
30

2 1/2

3. MENTION SIX GENERAL PROPERTIES OF AMINOGLYCOSIDES

- Made of amino sugars linked by glycosidic bonds
- Water-soluble
- Cannot cross blood-brain barrier
- Polar
- Adverse Effects: Ototoxicity, Nephrotoxicity, Neuromuscular Blockage
- Bacteriostatic
- Inhibit protein synthesis by binding to 30s ribosomal subunit

4. NAME 3 THIRD GENERATION CEPHALOSPORINS. WRITE 3 USES.

Names: Ceftriaxone, Cefotaxime, Cefixime, Cefixime, Cefditoren pivoxil

Uses:

- Skin infection
- Soft tissue infections
- Ear infections
- Eye infections
- Gonorrhoea
- Meningitis

5. EXPLAIN WHY TETRACYCLINES ARE CONTRAINDICATED IN CHILDREN AND PREGNANCY

Children

Tetracycline has a ^{chelating} ~~depressing~~ property.

It forms tetracycline orthophosphate complex.

It gets deposited in bones and teeth (Teeth Enamel Dysplasia) especially in children

Pregnancy

Tetracycline can cause hepatotoxicity, which can affect the fetus.

6. LIST 3 USES OF COTRIMOXAZOLE

- Urinary Tract Infection
- Respiratory Tract Infection
- Diarrhea caused by gram -ve bacilli

↳ E.g. Shigella, Salmonella, E. coli

3

- Meningitis
- Sexually Transmitted Diseases
- PID

7. ENUMERATE MACROLIDES. MENTION 2 ADVANTAGES OF AZITHROMYCIN OVER ERYTHROMYCIN.

Macrolides: Erythromycin, Azithromycin, Clarithromycin, Roxithromycin

2 1/2

2 Advantages of Azithromycin over Erythromycin:

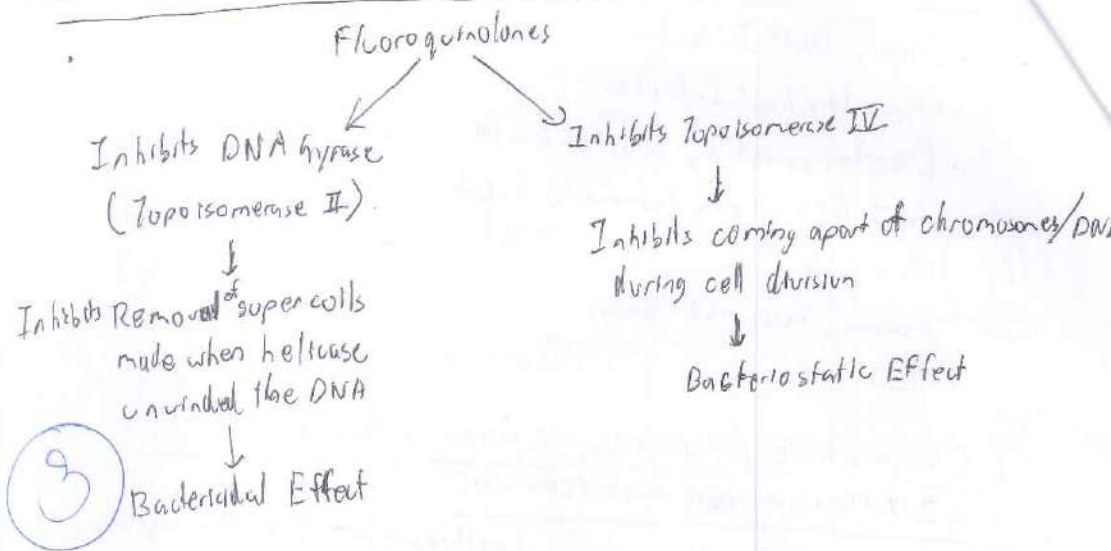
- Azithromycin is ^{acid} stable and Erythromycin is acid labile
- Azithromycin is more readily absorbed in GIT than Erythromycin
- Azithromycin does not cause superinfection unlike Erythromycin

8. SUPERINFECTION

- Failure of the flora (natural bacteria residing in the body) in protecting the body from infection

2 1/2. This is caused by disturbance to the flora. This can be drug induced, and usually happens in the GIT.
E.g. Erythromycin, Ampicillin

9. MECHANISM OF ACTION OF FLUOROQUINOLONES



10. MENTION 3 USES OF PENICILLIN G

- Skin Infections
 - Urinary Tract Infections
 - Diarrhea caused by gram -ve bacilli
 - Meningitis
 - Respiratory Tract Infections
- 2

1. ANTIMICROBIAL COMBINATION

• Used to produce a better effect

Eg: Sulfamethoxazole + Trimethoprim = Cotrimoxazole

β lactam Antibiotic + β lactamase Inhibitor = To kill β lactam resistant bacteria

1/2

Improvement Test

Chrisma Teresha

87

17MG483

⑩ 3 uses of penicillin G

- (a) For Staphylococcal infections
- (b) Streptococcal infections
- (c) Meningococcal infections
- (d) Pneumococcal infections

2/2 ✓

19
30

⑨ Mechanism of action of fluoroquinolones

Fluoroquinolones

Inhibit ~~DNA~~ DNA Gyrase

Prevent the correction of
positive supercoiling

Degradation of DNA

Bactericidal

Inhibit IV Topoisomerase

Prevent separation
of daughter strands

Damaging.

2/2 ✓

⑧ Superinfection

It is the development of a new disease because of the use of antibacterials / antimicrobials.

→ Mechanism

(Antibiotics) It acts on the normal flora / bacteria present in the body.

Role of normal nonpathogenic bacteria -

- (a) Attack pathogens
- (b) Compete for nutrients with pathogens

If they are destroyed, harmful pathogens increase.

⑦ Enumerate macrolides. Mention 2 advantages of azithromycin over erythromycin.

Macrolides :- Erythromycin, Clarithromycin, Azithromycin, Roxithromycin.

Azithromycin

- (a) It is acid stable
- (b) Better absorbed
- (c) Acts against Mycobacterium Avium complex (MAC), H. influenzae and T. gondii
- (d) Free of drug interactions
- (e) Long acting; one dose per day.
- (f) High plasma concentration.

⑥ 3 uses of Cotrimoxazole

① Urinary Tract infection

② Trachoma, Inclusion conjunctivitis, LGV

③ Toxoplasmosis

④ Melioidosis.

⑤ Why are tetracyclins contraindicated in pregnancy and children.

① Tetracyclins chelate calcium, so it is not preferred in children as it affects the growing bones

② It can cause pseudotumor cerebri in infants when taken in pregnancy, bulging of anterior fontanelle.

④ Cephalosporins

Ceftriaxone

Ceftriaxone

Uses

- ① Gram positive infections like streptococci and staphylococci infections
- ② Gram negative infections due to E. coli etc
- ③ Pseudomonas infections

③ Aminoglycosides

① Polycationic carbohydrates attached to amino sugars

② Highly water soluble

③ Given parenterally

④ Stays in the extracellular spaces

⑤ Excreted from the kidneys unchanged

⑥ Works well in alkaline environment (low pH)

⑦ Acts on gram negative aerobes

⑧ Causes ototoxicity, nephrotoxicity

FATHER MULLER MEDICAL COLLEGE
DEPT. OF DERMATOLOGY, VENEREOLOGY & LEPROSY
FMMC/DERM/PG/002/2018 Date : 05.02.2018

To,
The Dean
F.M.M.C.
Sir,

Hereby sending the marks obtained by the postgraduate Residents in Theory Internal Assessment Examination in the month January 2018.

Sl. NO	Name	Max Marks [100]
1	Dr. Ashmiya Abdul Razak	51
2	Dr. Mohammed Shamnadh	34
3	Dr. Chanabasayya V	50
4	Dr. Myfanwy D'Souza	50
5	Dr.S Suvarna	55
6	Dr. Navyashree S	51
7	Dr. Neema Sandra Dias	50
8	Dr. Afzaa Machiwala	34
9	Dr. Preethi Jolly	34
10	Dr. Oliver Lobo	46
11	Dr. Alex James	31
12	Dr. Vrushali Nikam	33
13	Dr. Jojan Raju	28
14	Dr. M adhu Preethi	51
15	Dr. Tanvi Vaidya	52
16	Dr. Alvish	A
17	Dr. Meghashree	41
18	Dr. Priyanka John	43
19	Dr. Mandeep Bhukar	43

Remedial measures : Failed candidates are instructed to re-write the answers of the internal examination.

Yours sincerely,



Dr. Sukumar D
Prof & HOD

FATHER MULLER MEDICAL COLLEGE

DEPT. OF DERMATOLOGY, VENEREOLOGY AND LEPROSY

Internal Assessment Examination – January 2018

Instructions : Answer all questions

Time : 2 hrs

Write briefly on the following

10 x 10 = 100 marks

1. Neonatal Lupus Erythematosus
2. Collodion baby
3. Wear and Tear dermatitis
4. Immunology of scabies
5. SCORTEN
6. Desmoglein compensation theory in Pemphigus
7. Achenbach's syndrome
8. Erysipeloid
9. Herpes B virus
10. Management of recalcitrant dermatophytic infection.

2/9/17

I.) Long Essay PENCILLINS

Penicillins can be classified into the following groups:

1.) Natural Regular Repository Penicillins.

- Benzyl penicillin (penicillin G)
- Procaine penicillin
- Benzathine penicillin

2.) Semi-Synthetic penicillins.

(i.) Penicillinase Resistant penicillins.

(ii.) Acid resistant penicillins.

- Penicillin V.

(iii.) Aminopenicillins.

- Ampicillin
- Amoxicillin

(iv.) Carboxypenicillins

- carbenicillin

Oxazolidinones

- piperacillin

Mechanism of Action

β lactam antibiotics [penicillins]

↓
Binds to penicillin binding proteins [PBPR's] on the cell wall.

↓
Inhibit cross linking of peptidoglycan.

↓
Cell wall deficient bacteria is formed.

↓
Bactericidal products

↓
Bacterial lysis.

Penicillins binds to penicillin binding proteins on the cell wall of the bacteria; thus they inhibit the cross linking of the peptidoglycan layer in the cell wall. $\therefore$ cell wall formation

28

I 7
II 6
4 + 1 M
4 + 2 X
14
2

does not take place which results in the formation of cell wall deficient bacteria. Thus bacteriocidal products which are released cause lysis of the bacterial cell. i.e. Penicillin are bacteriocidal in action.

β lactamase inhibitors

β lactamase inhibitors are those drugs which inhibit the β lactamase enzymes produced by the bacteria.

- β lactamase is an enzyme produced by the microorganism.
- By inhibiting the β lactamase enzyme, the ~~growth~~ cell wall synthesis of the organism is hampered and thus ~~it~~ it is bacteriocidal in action.

Uses:

- ~~It is~~ In treatment of bacterial infections like ~~staphy~~ staphylococcal, streptococcal, gonococcal, E coli infections.
- For treatment of pyogenic lesions
- ~~For~~ treatment of meningitis, gonorrhea, syphilis.
- For treatment of chancroid, myeloidosis etc.

II. Short Essays

(2) SULFONYLUREAS

Sulfonylureas are a group of oral antidiabetic drugs. They come under the category of insulin secretagogues.
- It is one of the earliest ^{oral} antidiabetic drugs.

They act by the following mechanisms:-

- (i.) Increase the secretion of insulin hormone from the β cells of the pancreas.
- (ii.) Increase the ~~sens~~ sensitivity of the tissues to the insulin hormone.
- (iii.) Increase the number of insulin receptors which facilitates the action of insulin hormones.

Pharmacokinetics: It is taken orally. ~~It~~ It has good ~~bio~~ bioavailability and is well tolerated. The difficulty of taking injections is reduced to a great extent.

Insulin

↓
Binds to the α subunit on the insulin receptor

↓
 β site shows tyrosine kinase activity

↓
This increases the inflow of insulin hormone into the tissues.

↓
↓ Gluconeogenesis
↓ uptake of glucose.

∴ ↓ glucose level in the blood.

Uses of Sulfonylureas.

(i) In insulin dependent diabetes mellitus. (IDDM)
- It favours the actions of insulin. ∴ It is used in IDDM.

(ii) In diabetes of pregnancy [Gestational diabetes]
- During gestational diabetes; oral hypoglycemics like sulfonylureas keeps ~~check on~~ blood sugar levels normal.

(iii) In hyperglycemic states: - ~~comatose~~

(iv) In diabetic ketoacidosis. - comatose conditions
- It is an emergency situation, where sulfonylureas can be used along with other insulin preparations.

Adverse effects

(i) The main adverse effect is it can lead to hypoglycemic conditions.

~~Hypoglycemia~~ Toxicity or overdosage of the drug can lead to comatose states.

(ii) Nausea, vomiting are also seen.

(4.) VINCA ALKALOIDS

Vinca alkaloids are the group of drugs used in cancer chemotherapy.

They are ~~not~~ natural source obtained from natural source and is of plant origin.

The main vinca alkaloids which are used in the treatment of cancer are

- vincristin
- vinblastin

Common uses : (i) In cancer treatment.
(ii) In treatment of chronic diseases.

Adverse effects - major adverse effects include loss of hair, immunosuppression and this may lead to superinfection.

RIFAMPICIN

(3) Rifampicin (R) is a 1st line antitubercular drug used in the treatment of TB.

HTR+Z

Other 1st line drugs include : Isoniazid (INH)
prothionamide (P)
Ethambutol (E)
Streptomycin (S)
Pyrazinamide (Z)

Mechanism of Action

Rifampicin
↓
binds to the DNA dependant RNA polymerase of the mycobacterium.
↓
RNA synthesis is inhibited.
↓
~~Bacteria~~ Bacteria is not formed.
↓
i.e. Bacteriocidal in action.

⇒ Rifampicin acts on both intracellular and extracellular mycobacteria; it also acts on the resistant strains.

Pharmacokinetics

It is taken orally and has very good bioavailability.

It is a main drug included in the short course regimen for the treatment of TB.

On the short course regimen; the drugs are taken in the following order.

- ~~Rifampicin~~ (i) Initial phase.
(ii) Continuation phase.

Initial phase - Rifampicin (R) + pyrazinamide (Z) + Isoniazid (H) + Ethambutol (E) / Streptomycin (S).

- for a duration of 2 months; weekly 3 times or daily.

Continuation phase - R + Z + H - for a duration of 4 months; weekly 3 times or daily.

Uses:

- (i) Antitubercular treatment.

- It kills the intracellular and extracellular mycobacterium. and also the resistant strains.
∴ It is a drug in the 1st line treatment & DOTS regimen.

- (ii) For treatment of leprosy

- It can be used to kill the leproa bacilli.

- (iii) In killing resistant strains.

- (iv) In combination with other drugs.

Adverse effects

- (i) Hepatotoxicity

- Neurotoxicity

Chronic use of drug or an overdose of drug may lead to these conditions.

- (ii) Ototoxicity

Nyctalga. etc.

(15)

Uses of glucocorticoids.

glucocorticoids have multiple actions in the body: This includes -
- metabolic actions
- anti-inflammatory actions
- immunosuppressive actions.

∴ The uses of glucocorticoids is based on these actions.

The main glucocorticoid used is: Cortisol/hydrocortisone.

Uses

(i.) In Respiratory Tract infections.

Chronic Bronchitis - glucocorticoids suppress the formation of inflammatory mediators like prostaglandins and interleukins. ∴ Used in inflammatory diseases of the respiratory tract.

(ii.) Acute episodes of Asthma/ status Asthmaticus.
→ Hydrocortisone hemisuccinate 100mg after every 8 hours
the acute ^{or exacerbation} episode of asthma. IV_1 is given to correct.

(iii.) For lung maturity in fetus.

- Prednisolone is given to pregnant mothers in order to facilitate lung maturity in suspected cases of preterm labour.

(iv.) In GIT diseases = ~~such as acute gastroenteritis~~

(iv.) In inflammatory conditions such as - Rheumatoid arthritis.

→ The anti-inflammatory action of cortisol ~~pred~~ is made use here.

(v.) In acute Gout, arthritis.

(vi.) In Autoimmune diseases such as, Graves disease,

thyrotoxicosis.

The immunosuppressive action is made use.

- Cortisol is the preferred drug.

(vii) In conditions such as cystic fibrosis (Auto immune disorder)

(viii) In infections such as glomerulo nephritis, pyelonephritis etc.
(Anti-inflammatory action - cortisol is used).

(ix) Used in transplant surgery for immunosuppression
in order to prevent graft rejection. The cell mediated
immunity is reduced.

(x) Also used in hypersensitivity reactions - as an
emergency drug - anaphylactic shock.
- Hydrocortisone is used. ~~IV 100mg stat~~ after way & hours.

III SHORT ANSWERS

(7.) IMMUNOSUPPRESSANTS

(i) Calcineurin inhibitor
- Cyclosporine.

(ii) Mycophenolate mofetil.

(iii) Glucocorticoids - Hydrocortisone.

Uses

(i) For immunosuppression in organ transplantation.
- to suppress the cell mediated immunity.
- to prevent graft rejection.

(ii) In aortic stents [valvular stents] etc. to prevent
rejection reactions.

(iii) In autoimmune disorders - to suppress the auto
T-cell mediated immunity.
- such as graves disease, thyrotoxicosis,
cystic fibrosis etc.

(8) RADIO ACTIVE IODINE.

Radioactive iodine is an antithyroid drug used for the destruction of thyroid tissue.

→ It contains ^{131}I and is available as Na^{131}I .

~~Pharmako~~

Mechanism of Action

It has emits 2 rays β rays and γ rays.

The β rays does not penetrate much as does not

destroy the surrounding tissue

The γ rays penetrates deep into the thyroid tissue and

destroys it.

Pharmacokinetics

- It is used as a single dose. ~~consumed orally as a solution.~~
- The physical effects starts to appear in 4 weeks.
- but the peak effect is seen in 2 months.

Precautions

- The urine of the patient should be well flushed and disposed.
- Patient should not be away from children and pregnant ladies.

Uses

- ⇒ The doses is different in different conditions.
- Used in :
- Thyroid tumors.
 - Carcinoma thyroid.
 - Thyrotoxicosis.
 - toxic nodular goitre.

Advantages

- Used as a single dose.
- less expensive compared to surgery.
- convenient to use.

Disadvantages

- may lead to secondary tumor or secondary carcinoma thyroid.

(9.) AZOLE ANTIFUNGALS

Azole antifungals are the group of drugs which are used to treat fungal infections which includes ketoconazole.

Uses To treat

(i.) Superficial mycosis.

(ii.) ~~Atopic~~ candidiasis and other opportunistic infections.

(iii.) ~~also~~ to treat dermatophytosis.

→ These are mainly available as topical preparations combined with an anti-inflammatory agent.

II (6.)

Artemisinin based combination therapy.

Combination therapy is used ~~for~~ ^{due to} the following

advantages: (i.) Low doses of drugs.

(ii.) Decreased resistance to a particular drug.

- Development of resistance to a particular drug is unusual in combination therapy.

(iii.) Short course / duration of treatment.

(iv.) To treat multiple organisms such as gram positive, gram negative and anaerobic bacteria.

III (10.)

Metronidazole

→ It is an important drug used for the treatment of ~~amoebic~~ amoebic infections.

Mechanism of Action

PK ~~metronidazole~~ metronidazole gets converted into the active metabolite FPGS (5-hydroxymetronidazole).

→ The active metabolite FPGS (5-hydroxymetronidazole) inhibits the multiplication of the organisms.

Ans (i.) ~~Amoebic~~ for treatment of amoebiasis

(ii.) Amoebic liver abscess etc.

Adverse Effects

- glossitis
- stomatitis

- nausea,

- vomiting are the common adverse effects.



A handwritten signature in blue ink, appearing to read "Dr. Jayaprakash Alva".

DR. JAYAPRAKASH ALVA
DEAN

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221-23

DEPT. OF PHARMACOLOGY
MULLER'S MEDICAL COLLEGE
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NAME: CECILIA WILSON.

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DATE: 15/12/14.

II.) Short Essay

2)*) It is a macromolecular site on the cell membrane to which the drug binds to bring about the action.

G-protein Coupled Receptors:- these receptors are situated within the plasma membrane.

Mechanism of Actions:-

Binding of drug to the Receptor

↓
Stimulation of G-protein Coupled Receptors.

2
↓
Activation of phospholipase C.
↓
production of Inositol Triphosphate (IP₃) and cAMP
↓
Required Action.

↓
Dephosphorylation of Guanylyl Cyclase
↓
Dephosphorylation of protein kinases
↓
production of proteins.
↓
Required Action.

Eg:- Nitroates in angina.

3) Uses and adverse effects of α -Blockers.

Eg: Prazosin.

Uses: 1) Treatment of hypertension:- by blocking the α receptors in receptors in heart thereby decreasing its myocardial contractility force of contraction and velocity of contraction.

2) Myocardial Infarction, Longest re Cardiac failure by limiting the spread of infarct and vasodilator property respectively.

3) Benign Prostate Hypertrophy:- The enlargement of the prostate gland causes pressure on the urinary bladder to spasm. The α -blockers block the receptors on the urinary bladder.

4) Erectile dysfunction

Adverse Effects: Brady Bradycardia; in higher doses cause arrhythmias, dizziness, failure; weakness;

4) Drug Antagonism :-

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Phenomenon where one drug inhibits the effects of the other drug.

Types :- Competitive, non-competitive, physiological, Chemical.

→ Competitive :- Antagonists competes with the drug for the receptor. This is reversible and can be overcome by excess amount of the drug.

→ Non competitive :- Eg:- Acetylcholine and

→ non-competitive :- Irreversible type, doesn't compete with the drug for the receptor. It binds to another receptor and diffuses slowly.

Eg:- Atropine & Tetracaine.

→ Physiological :- Antagonism takes place where the agonist & antagonist act at two different physiological sites. Eg:- insulin & glucagon.

→ Chemical :- Chemical reactions take place between the drug & its antagonist.

5) Verapamil :- It is a Calcium Channel Blocker.

Mechanism of Action :- Verapamil blocks the

L-type of Calcium Channels, thereby causing decreased entry of calcium into cells; especially the myocardial cells, therefore there is decrease calcium intracellularly and therefore decreased myocardial contractility, automaticity and conductivity, and decreased force of contraction and heart rate.

Therapeutic Uses :- 1) Cardiac arrhythmias :-

This is achieved by the
help of by depressing the A.V conduction.

*) Hypertension :- as antihypertensives, by decreasing
the myocardial contractility & force of contraction.

*) Skeletal muscle relaxants

*)

Adverse Effects :- bradycardia, weakness.

3) Contraindications :- people with diabetes;
not to be given along with digoxin.

6) Anti Hypertensive :- 1) Calcium Channel Blockers :- Verapamil,
diltiazem.

*) ACE inhibitors :- Enalapril, Lisinopril, Zaptapril.

*) Angiotensin Receptor Blockers :- Losartan, Candesartan.

*) Sympathetic lytic :- α -blockers :- Prazosin.

β -blockers :- Propranolol.

ACE inhibitors :- They inhibit angiotensin converting
enzyme, which converts Angiotensin I to

Angiotensin II; and so on.

Accumulation of Angiotensin causes vasodilatation;
as it is a powerful vasodilator; also increase bradykinin.

Angiotensin $\rightarrow$ powerful vasodilator $\rightarrow$ decreased
peripheral vascular resistance $\rightarrow$ Hypotension.

Calcium Channel blockers :- Verapamil.

Blocks L-type of calcium channels of myocardial
cells

$\downarrow$
Reduced intracellular Calcium

↓
Decreased force of contraction

2/4 Heart rate Cardiac Output decreases
↓
decrease heart rate

II) 4) Bubbling :-

Site:- Held under the tongue

Advantages :- +) first does not undergo first pass metabolism. +) Rapid onset of action of the drug. +) Inexpensive; excellent absorption. Can be spit out.

2 Disadvantages :- +) Distasteful. +) Cause nausea and vomiting +) produce irritation.

8) Organophosphorus poisoning :-

These organophosphorus poisoning occurs mainly in individuals exposed to insecticides.

12 Treatment :- +) If topical; wash the skin with water & rinse it thoroughly with disinfectant.

+ ~~2/4~~ If entered stomach :- Gastric lavage.

+ Drugs involved in the treatment :- Atropine along with pralidoxime, diacetylmonoxime & thiocholine.

9) Peripherally acting skeletal muscle relaxants :-

Quinidine, lignocaine.

Uses :- +) Relaxation of skeletal muscles.

+ Smooth muscles :- +) GIT :- relaxes the smooth

2 1/2 muscles of GIT; thereby increasing the motility of gastric contents.

* Urinary bladder: contraction of detrusor & relaxation of the trigone of the urinary bladder; helps in voiding of urine.

*) Uterus: contraction of uterus in last term of pregnancy.

10) a) Amiodarone is used in arrhythmias.

→ It is a potassium channel blocker.

→ blocks the potassium channel; inhibits the sodium $\text{Na}^+ \text{K}^+ \text{ATPase}$; thereby reducing the force of contraction; depression of SA node and AV conduction.

b) Digoxin: - It is a cardiac glycoside.

b) It is used in treatment of cardiac glycosides;

congestive cardiac failures as it prolongs the effective refractory periods.

*) It reduces ventricular remodeling; and reduces the morbidity & mortality.

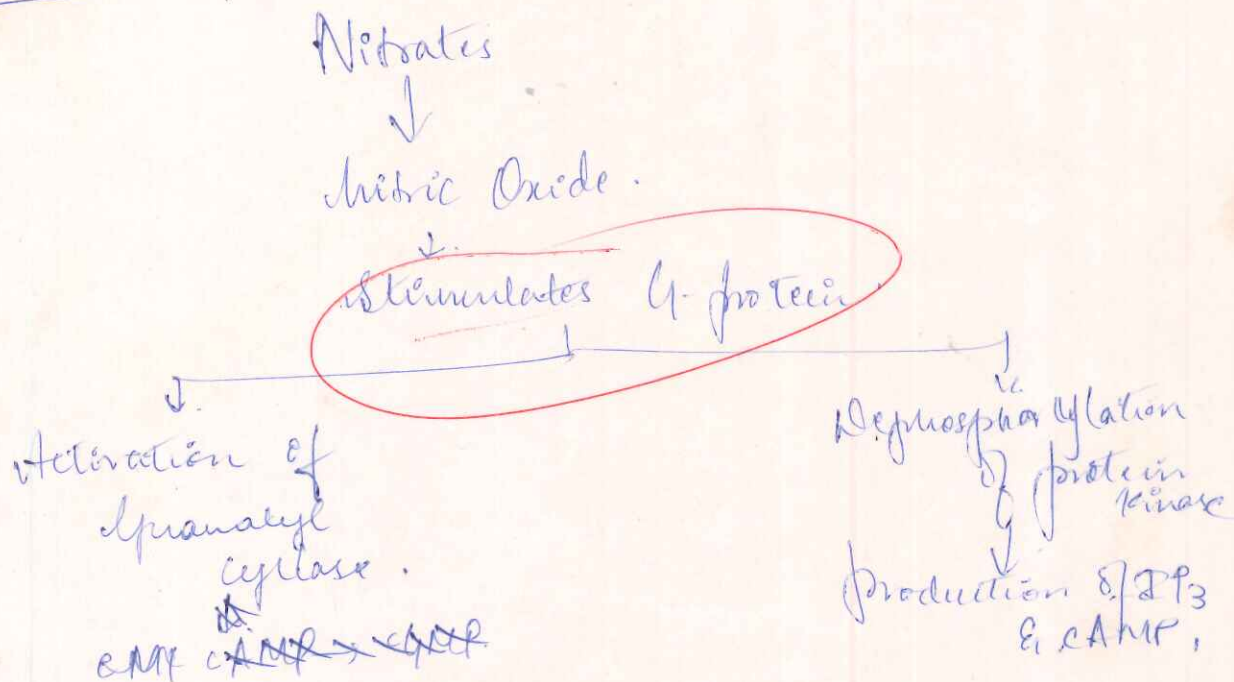
I) Antianginal drugs:

→ Nitrates :- nitroglycerin.

→ potassium Channel openers.

→ Calcium Channel blockers. → Verapamil, diltiazem.

Nitrates: Mechanism of Action.



- 3 Uses :-
- 1) Unstable Angina; vasorelaxation Angina
 - 2) Exercise Angina:- Reduces angina during exercise.
 - 3) Variant Angina:- dilatation of coronary arteries and decreasing vaso spasm.
 - 4) Stable Angina.
- Decreases the preload and after load.
→ Cyanide poisoning.
- Adverse Effects :- Flushing of face, Bradycardia.

1) Neonatal Lupus Erythematosus

It is an uncommon autoimmune disease manifested primarily by cutaneous lesions. It usually manifests as congenital heart block.

Maternal antibodies of the family are present in every case which is transplacentally transmitted.

Cutaneous lesions present at birth

Lesions are usually seen over the face, mainly over the periorbital area & scalp.

Lesions resolve within few months without scarring.

Heart block begins in the 2nd or 3rd trimester.

Cardiomyopathy occurs with CHD mostly at birth.

Other associations are endocarditis fibroelastica & hepatobiliary disease.

Investigations show Thrombocytopenia, Anaemia & Neutropenia.

Treatment is with systemic corticosteroids.

2) Achenbach Syndrome

Also known as Periorbital hand ~~apoplexy~~ hematoma or finger apoplexy.

Most commonly involves middle index finger.

It is an idiopathic condition.

Most common cause is trivial trauma.

Bleeding occurs in subcutaneous palm & can be preceded by pain, tingling or numbness.

Microscopy shows normal capillaries with reduced capillary resistance.

Treatment is usually self-limiting.

3) Herpes B Virus

Also known as Monkey B virus.

It is an endemic simplex virus in monkeys.

Monkeys are the natural hosts.

In humans, the infection is zoonotically acquired.

It is a neurotropic virus.

Incubation period: 3-7 days

Symptoms include vesicular skin lesions, localised neurological symptoms, flu like symptoms, fever & chills.

Management includes Isolation & Personal protection.

4) Desmoglein Compensation Theory

It explains the site of blister formation or blisters in Pemphigus vulgaris & Follicular.

It is based on the fact that Desmoglein-1 is present in

the upper epidermis & mainly in skin & Desg-3 is predominantly

Desmosomes in mucous membrane & lower epidermis.

In case of Pemphigus foliaceus Anti-Desg 1 IgG antibodies in

serum cause superficial blisters the skin.

Serum from patients with mucosal predominance. Pemphigus vulgaris contains anti Dsg 3 IgG which causes mucosal blisters & erosions where there is no compensation by Dsg 1.

5) SCORTEN

It is a severity of illness score

Originally developed in case of TEN.

It is a validated predictor of mortality in TEN.

Patients when seen at the time of admission.

It includes 7 components,

1) Age > 40 years

2) Malegnancy

3) Heart rate $> 120/\text{min}$

4) Initial Epidermal detachment $> 10\%$ BSA

5) Serum Urea level $> 28 \text{ mg/dL}$

6) Serum Glucose level $> 250 \text{ mg/dL}$

7) Serum Bicarbonate levels $< 20 \text{ mg/dL}$

Probability of death : 0 → 3.2%
 1 → 12.1%
 2 → 35.3%
 3 → 58.3%
 ≥ 4 → 90%.

Treatment

The colloidion babies should be managed in ICU.

Temperature management, maintenance of electrolyte balance, nasogastric feeding, Eye care.

c) Colloidion Baby

Aka Ichthyosis Congenita.

It is a transient appearance of neonates born with some form of congenital Ichthyosis.

Other conditions also colloidion baby are

- Sjögren Laxen syndrome
- Self healing colloidion baby
- Tachylodystrophy
- Neural lipid storage disease
- Chondrodysplasia punctata

cf: Baby is born encased in a shiny membrane.
Associated with cephalopod, flat pruna

Histopath: Dilatation of blood vessels in the Papillary dermis & subpapillary areas.

Treatment: I line $\rightarrow$ Penicillins & Cephalosporins

II line $\rightarrow$ Rifampicin

7) ERYSIPELOID

Acute infection caused by *Erysipelothrix rhusiopathiae*

It is a gram positive bacillus.

Occurs in traumatised skin

Seen in fisherman, Butcher most commonly.

Aka as Rosenbach's disease / Pseudocorypselas.

IP is 1-7 days

cf: ——— Localised cutaneous
——— Diffuse
|
Generalised

usually presents as polygonal plaque on fingers which is
white in color.

Inv: Gram staining of serous discharge shows gram positive bacilli

Treatment: mild steroids with emollients

1) Immunology of scabies

Individuals with scabies react to the bites by generating a cell mediated immune response at the bite site.

Ulnated papules & nodules develop as a result of immunologic reaction in skin.

This is mediated by LyG , LyM & LyE .

Allergic sensitivity to mite as its products.

The development of lesions other than burrows & in producing pruritus.

Immediate & delayed hypersensitivity are involved.

10) Fungal Therapy

Isaconazole (oral) is beneficial in most of the cases in the dose of 2-4 mg/kg/day.

Updosing can be tried when patient responds initially to the treatment.

In Elderly, 100mg/day is tried with caution for 1-4 weeks.

In Children > 6 years - 5mg/kg/day for 1-2 weeks

Not Indicated in Pregnancy.

Newer topical antifungals like Lukconazole, Ebusconazole, Iseraconazole should be given.

Sequential treatment in case of non responding cases.

Management of Recalcitrant Tinea Infection.

Patient education

• Compliance of treatment

Report adverse effects if any

① Neonatal Lupus Erythematosus

Neonatal lupus is an uncommon autoimmune disease manifested primarily by cutaneous lupus lesions and or congenital heart block. Maternal antibodies of the Ro/SSA family are present in virtually every case, although only approximately 1% of women who have these autoantibodies will have a baby with neonatal lupus. The cutaneous lesions of neonatal lupus may be present at birth, but more often develop within the first few weeks of life. The lesions are most common on the face & scalp, & often in a distinctive periorbital distribution. Lesions tend to resolve in a few weeks or months without scarring.

The most common cardiac manifestation of neonatal lupus is complete heart block. Heart block typically begins in utero during the 2nd/3rd trimester. In some cases, heart block begins as 1st/2nd degree heart block. Once established appears to be irreversible. In some cases cardiomyopathy has been reported. There have been a few cases of endocardial fibroelastosis occurring in the absence of congenital heart block. Hepatobiliary disease occurs in about 15% of cases. Hematologic disease consisting of thrombocytopenia/anaemia occurs in about 10% cases. It is common for children with neonatal lupus not to have the full expression of the disease, but rather have only one or two organ systems involved. The diagnosis rests largely on the finding of compatible clinical manifestations plus maternal autoantibodies to Ro/SSA or La or U1 RNP nuclear proteins. Treatment is mainly by systemic corticosteroids. The long term prognosis for children who have

had neonatal lupus is still under
investigation but some develop after
autoimmune disease later in childhood.

② Colloidion baby

The term Colloidion baby refers to a clinical entity used for newborns who are encased by a translucent, tight + parchment paper like skin sheets so called Colloidion membrane on the entire body surface.

- Colloidion baby as a term was first used by Hallapeau in 1887.

- In almost all of the Colloidion membrane cases an autosomal recessive ichthyiform disease is implicated.

- In order of frequency Congenital ichthyiform erythroderma (Especially Iron bullous form) lamellar ichthyosis and harlequin ichthyosis (which is usually accepted to featuring autosomal recessive inheritance) are responsible. Rarely there may be an association of bullous congenital ichthyiform erythroderma, Gaucher's disease + Jogan Larsson syndrome. Furthermore a new form of the disease i.e. an autosomal recessive inheritance called "self healing Colloidion baby" has been notified where the newborn completely recovers in a couple of weeks.

The Colloidion membrane occurs due to epidermal cornification disorders just like all the ichthyiform diseases.

Keratinocyte protein + lipid metabolism defects resulting from autosomal recessive genetic mutation have also been notified as important cofactors. Clinically babies encounter dehydration, electrolyte imbalance, temperature malfunction + increasing sepsis risk because of a relatively severe skin damage. Therefore morbidity + mortality rates are fairly high. Conclusively, these newborns

should be monitored carefully in
intensive care units & appropriate &
supportive treatment must be undertaken.

③ Wear & Tear Dermatitis

- Approximately 80% of all the HD cases involve irritant contact dermatitis.
- Contact dermatitis of the hands can be either irritant or allergic in etiology. ICD is a nonspecific response of the skin to direct chemical damage involving release of inflammatory mediators, predominantly from epidermal cells.
 - A corrosive agent may cause the immediate death of epidermal cells as is evident by chemical burns.
 - Irritant remove surface lipids, denature epidermal keratins or damage cell membranes.
 - Solvents are a major cause of irritation as they remove essential fats & oils from the skin which increase transepidermal water loss & lower the skin's susceptibility to the increased direct toxic effect of other previously tolerated cutaneous exposures.
 - Mechanical factors such as trauma, friction, pressure & vibration may also induce skin changes. Individuals who handle large amounts of paper may be affected by frictional hand dermatitis sometimes termed wear & tear dermatitis.
 - Handwashing frequently more than 35 times per shift was linked to occupational hand dermatitis in ICU care workers.
 - Generally women are affected more due to more exposure to cutaneous irritants from their disproportionately great role in house cleaning & the care of small children.
- Pre-disposing factors include heat or cold, occlusion & humidity.
- Low temperature & humidity reduces the

Water Content of the stratum corneum
which can lead to cracking

Immunology of scabies

Individuals $\bar{c}$ scabies reacts to mite by generating a cell mediated immune response to the mite site.

- This elicits a very itchy papule that is often excoriated.
- Sometimes ulcerated papules, urticaria & nodules develop as a result of other immunologic reaction in skin.

Immunologic reactions mediated by antibodies of the IgG, IgM & especially IgE class may be involved.

None of these reactions have been shown to eliminate all mites from the skin surface. But locally these reactions may prevent the epidermal multiplication of mites organisms on the skin surface as observed in some patients as crusted scabies.

Allergic sensitivity to the mite as its products appears to play an important role in determining the development of lesion other than burrows & in producing pruritus.

- Immediate & delayed hypersensitivity are involved

5) SCORETEN

Score of toxic epidermal necrosis is a severity of illness scale which the severity of certain bullous conditions can be systematically determined. It was originally developed for toxic epidermal necrolysis, but can be used to assess victims, sufferers of Steven-Johnson syndrome, cutaneous drug reactions or exfoliative wounds.

The conditions have in common that they compromise integrity of the skin / or mucous membrane

In the Scoreten scale, 7 independent risk factors for high mortality are symptomatically scored so as to determine the mortality rate for that particular patient.

Risk factors

	0	1
Age	40	>10yr
Ass. malignancy	No	Yes
H.R. Cheek/rim	<120	>120
Serum BUN	<28	>28
Detached / Compromised body surface	<10%	>10%
Serum lactate	>20	<20
Serum glucose	<252	>252

The more risk factors present the higher the SCORETEN score & the higher the mortality rate as shown in the following table.

No. of risk factors	Mortality rate
0-1	3.2%
2	12.1%
3	35.3%
4	58.3%
5 or more	79.0%

⑥ Dermogelin Compensation Theory in Pemphigus

Dermogelin Compensation Theory is a proposed explanation for the correlation b/w the clinical features of pemphigus vulgaris & pemphigus foliaceus & the autoantibody profile of these disorders.

- In the skin, desmoglein 1 is expressed mostly in the upper portion of the epidermis, while desmoglein 3 is expressed mostly in the basal & suprabasal layers of the epithelium.
- In the mucous membrane, Dsg3 is expressed to a much lower degree. Mucosal dominant pemphigus vulgaris is characterized by autoantibodies against Dsg1 & result in only mucosal lesions because Dsg1 compensates for the loss of Dsg3 in the skin.
- In the mucous membrane Dsg1 cannot compensate resulting in intraepithelial blistering.
- In mucocutaneous pemphigus vulgaris, autoantibodies against Dsg1 & Dsg3 are present.
- The compensation occurs neither in the skin nor the mucous membrane & blistering occurs in both locations.
- Pemphigus foliaceus is characterized by autoantibodies against only Dsg1.
- This results in very superficial blisters in the skin.
- This mucous membrane are spared due to high levels of Dsg3 expression throughout the epithelium & low levels of Dsg1 expression.

⑦ Scharlach's syndrome

- Also known as paroxysmal hand hematoma
- It is a skin condition of unknown pathogenesis
- It is characterized by spontaneous focal haemorrhage into the palm or the volar surface of the fingers, which results in burning localized pain followed by rapid swelling & localized bluish discoloration.

Peripheral pulses & finger capillary refill tests are normal

Bleeding time, clotting time & coagulation profiles are also within normal limits.

Lesions most commonly involve the middle and/or index fingers.

Epidemics may occur spontaneously or after trivial trauma.

Bleeding usually stops within minutes after applying local pressure & discoloration also disappears in 4-6 days.

FORENSIC MEDICINE ASSIGNMENT

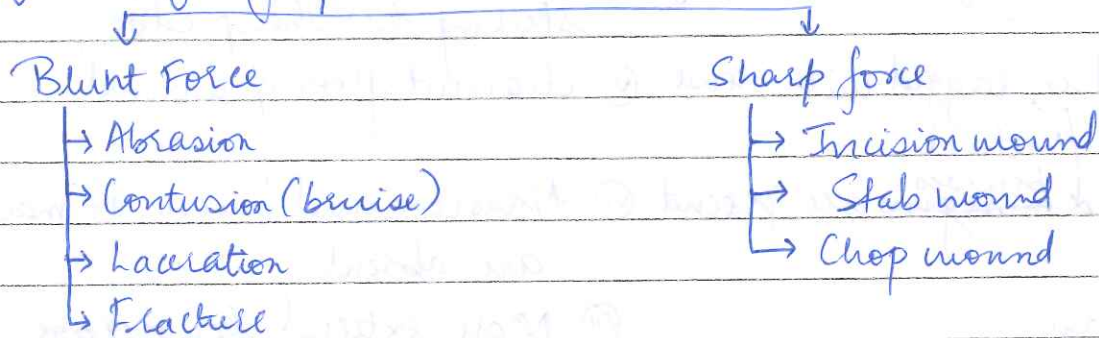
1. Define and Classify Injury. Write medico-legal significance of abrasion.

Ans:

A physical trauma which causes structural (anatomical) changes is called injury.

According to Sec 144 IPC - Any harm illegally caused to body, mind, reputation and property.

Classification of Injuries:



Bite marks are a special category of injury that may be either an abrasion, contusion or laceration or a combination of all the three.

Medicolegal Significance of Abrasion:

- ① An abrasion indicates the site of contact with an object.
May be the only external indication of a deep-seated injury.
- ② Type of abrasion may reveal the manner of contact i.e. sliding or compressing.
Pattern can help deducing nature of the object, eg.: radiator grill pattern in a 'hit and run' case.
- ③ Stage of healing process help determine time of occurrence.
- ④ Exact site of abrasion can indicate sometimes the nature of crime.
Eg: Around nose and mouth indicates smothering.
Around breasts and genitalia may suggest sexual assault.
Abrasions on suspected assailant due to struggle.
- ⑤ In case of assault, nail scrapings from victim and assailant are taken for DNA typing to link the victim and assailant.

2. Write differences between Laceration and Incised wound

Ans:

Laceration	Incised wound
① Blunt injury by hard, blunt and rough weapon or object	① Sharp injury by sharp edge of a cutting weapon
② Site is usually over bony prominences	② Anywhere on the body
③ Irregular shape with irregular, uneven and ragged margins	③ Shape is elliptical, spindle shaped or oval with clean cut, smooth, sharp and well defined margins
④ Usually produced by friction, stretching or compression	④ Produced by drawing, sawing or striking the sharp edge
⑤ Floor of wound is ragged with loose tags of tissue fracture	⑤ Clean cut floor of wound
⑥ Abrasions and bruises ^{bruises} are present on margins	⑥ Abrasions and bruises on margins are absent
⑦ Less hemorrhage	⑦ More external hemorrhage
⑧ Bone underneath may be fractured	⑧ Bone underneath may be cleanly cut
⑨ Nature is usually accidental, less commonly homicidal or suicidal	⑨ Usually suicidal, maybe homicidal

3. Extra-dural hemorrhage (Epidural)

Ans:

- This type of hemorrhage occurs between the skull and the dura mater due to rupture of diploic veins, venous sinuses or meningeal arteries.
- Most commonly ruptured artery is middle meningeal artery cut at the sylvian point.
- Large hemorrhage (2cm or more thickness) in extradural space leads to rapid compression of the brain (with fatal involvement of vital centres in the medulla).
- Initial injury due to cerebral concussion may cause unconsciousness.
- Recovery may follow, with the patient being unconscious later due to compression of brain due to accumulation of blood.
- This brief intermediate period of consciousness is called lucid interval
- It is almost always traumatic in nature

4. Entry wound from rifled firearm at various stages.

Ans:

① Contact shot —

- The firearm is placed in contact with the skin or clothing and then fired.
- Contact wound over a dense area (cranial vault) are generally large and crescentic, due to explosive effects of the gases liberated.
- Imprint of the muzzle may be found stamped on the skin.
- Burning, blackening (smudging) and tattooing are slight or absent in the adjacent skin; all components of the explosion are driven into the wound.
- Tissues are often saturated with CO and therefore cherry red in colour.
- Contact wounds over thin bone, chest or abdomen are usually circular in shape and surrounded by abrasion or contusion collar.
- The overall diameter of the hole plus the collar represents the approximate diameter of the bullet.
- Surrounding hair is singed.

② Close shot —

- Firearm is fired within range of flame and powder blast but not in direct contact with the skin or clothing.
- Flame travels approximately 15cm.
- Wound appears as a circular hole surrounded by scorching, singeing and smudging (may be absent if firing has occurred through clothing).
- Abrasion collar, grease collar and tattooing are present.

③ Near shot —

- Firearm is fired outside the range of flame but within powder blast range.
- Wound is circular or oval in shape.
- Unburnt powder grains and small metallic particles travel 75cm.
- Practical situations show tattooing up to 90cm.
- No singeing of hair and scorching.
- Smudging up to range of 30cm.
- Grease collar and abrasion collar is present.

④ Distant shot —

- Firearm was discharged outside range of flame and powder blast.
- Wound is circular with inscribed margins with grease collar and abrasion collar.
- No scorching, tattooing and smudging.

5. Entry wound from shotgun firearm at various ranges.

Ans:

① Contact shot -

- Wound is a large, irregular hole resulting from explosive blast effect.
- Edge of the defect is scorched by flame and surrounding skin is blackened by smoke and tattooed by unburnt powder.
- Imprint abrasion produced by the muzzle end may be seen.
- Shot (comprising a bunch of pellets) passes into the body as a solid mass.
- Injured tissue is usually cherry red in colour.
- Injury of the cranium is large and irregular with radiating fissured fractures.

② Close shot -

- A circular defect with irregular inverted borders is produced.
- Edges are scorched due to flame and smudged by smoke.
- Fairly wide zone of tattooing may surround the edges of the wound.
- Tissues appear cherry red in colour.
- The pellets enter the track en masse.

③ Near shot -

- The wound is circular or oval in shape.
- Smudging evident upto 30cm.
- If fired within 30cm, sometimes wad produces mild abrasions.
- Tattooing present over a wide area.
- Pellets travel en masse upto 45cm before dispersing.
- Wound diameter is 2.5cm approximately.
- If shot at less than 90° , wound may become triangular or semi-circular.

④ Distant shot -

- Beyond 2 metres, no blackening or burning.
- Tattooing is rare.
- Wad may be present in wound (upto 5m range).
- Pellet dispersion seen significantly at >2 metre range. Spread increases progressively and size of central defect diminishes.
- Rule of Thumb: Diameter of the spread in inches is roughly equal to the range in yards multiplied by 1.5.
- At distant ranges ($>6-10$ m) central hole shrinks to nothing, pellets may lie in the subcutaneous tissue.

6. Classify thermal injuries. Add a note on neonatal cold injury.

Ans:

Thermal injuries are classified as:

① Cold → (a) General effects - Hypothermia
→ (b) Local effects - Chilblain, Frostbite, Trench foot

② Heat → (a) General effects - Heat cramps, Exhaustion, Heat stroke
→ (b) Local effects - Burns and Scalds

Neonatal Cold injury -

- It results from a failure of the metabolism to prevent a fall in temperature in a body kept in an unsuitable cold environment.
 - Symptoms appear usually in the first week of life.
 - Rectal temperature below 32°C .
 - Features include Swelling, widespread oedema of extremities (hands, feet, eyelids), redness of face, hands and feet.
 - Localised hardening of skin and subcutaneous tissue over oedematous parts.
 - Pulsation of peripheral arteries is absent.
 - Respirations are shallow, slow and irregular.
 - Infants lie motionless but conscious.
 - May manifest into gastrointestinal bleeding, petechial hemorrhages and blood oozing from scratches or injection sites.
- Medico legal importance → method of killing illegitimate and unwanted infants.

7. Post-mortem features of death due to burns.

Ans:

External findings -

- Body demonstrates pugilistic attitude.
- Burns appear reddened and blistered. Hair is singed or burnt.
- Blisters may be seen (even in post mortem burns, putrefying body).
- There may be signs of gross infection of burns on the body with discolouration and pus formation.
- Body and clothes may be wet in scalding. Tracks by trickling are formed. And no burned clothes, singed hair, charring, etc.
- Head rupture may be evident.

Internal findings -

- Blood may be cherry red in colour (carboxyhaemoglobin).
- Extradural heat hematoma may be seen.
- Brain is congested (may demonstrate 'cooked' appearance)
- Smoke inhalation may show soot particles or carbonaceous material in the respiratory passages
- Curling's ulcers may be seen in the 1st stomach and duodenum.
- Serous pleural effusions are common.
- Lungs are congested with 'cooked' appearance.
- Spleen and adrenals may be enlarged, congested and softened.

8. Discuss Section 320 IPC.

Ans:

Section 320 IPC discusses injuries of serious nature known as grievous hurt.

The injuries are as follows:

- ① Emasculation - loss of masculine power of a male, may include excision of penis, injury to vertebral column causing failure of erection, castration leading to impotence.
- ② Permanent privation of sight of either eye and permanent privation of hearing of either ear - permanent need not be incurable, as it is still considered as grievous hurt if repaired by medical intervention. Injury need not be complete, can be partial also.
- ③ Deprivation of any member of joint or permanent impairing its power - As a member of any part of the body has its own morphological and functional identity.
- ④ Permanent disfiguration of head or face - Amount of disfiguration may not be same in two separate cases to be considered grievous hurt. It is upto the court to decide quantum of punishment.
- ⑤ Fracture or dislocation of bone or tooth.
- ⑥ Any hurt that endangers life (death in ordinary course of nature)
- ⑦ Any hurt that causes severe bodily pain
- ⑧ Any hurt that renders him unable to follow his ordinary pursuits for a period of 20 days

9. Post-mortem findings in death due to hanging

Ans: External features:

- ① Ligature mark - ligature leaves a distinct, pale furrow of its own width and pattern on skin surface with reddish-brown edges.
 - Ecchymosis and congestion of adjacent skin may be seen.
 - Skin in the region is generally dry and hard.
 - Pressure abrasion of ligature pattern is often found.
 - Ligature mark is usually above the level of hyoid bone, passing backwards and upwards symmetrically on both sides.
 - Mark not seen at the point of suspension.
- ② Knot - It is present on the dominant side, as tying is easier. (It may be Slip knot, Binding knot, Hangman's knot)
 - Common sites are right or left side of neck and the occiput
 - Groove deepest opposite the position of knot.
- ③ Face may be congested, puffed up and bluish with bloody froth in the region of the mouth.
- ④ PM lividity is seen in distal parts of upper and lower limbs
- ⑤ Head is tilted away from the knot.
- ⑥ Petechial hemorrhages may be seen.
- ⑦ Dribbling of saliva at the angle of the mouth
- ⑧ Tongue is protruded and may have been bitten.
- ⑨ Le facie sympathique - eye on one side remains open and pupil dilated as knot presses on the cervical sympathetic ganglia.
- ⑩ Neck dissection - Blood extravasates into subcutaneous tissues of neck.
 - Contusion of sternocleidomastoid & platysma may be present.
 - Intima of carotids may be ruptured transversely.
 - Hyoid bone is occasionally fractured (240 years)
 - Abduction fracture
 - Lymph nodes show evidence of congestion, stasis & hemorrhage.
 - Fracture-dislocation of cervical vertebrae
- ⑪ Tardieu spots in lungs and other viscera and congestion of viscera
- ⑫ Simon's hemorrhage (intervertebral disc)

10. Post-mortem findings in death due to drowning.

Ans:

External findings -

- ① Skin is wet, cold and clammy. Pale due to constriction of superficial blood vessels.
- ② Body temperature falls to that of the water in a few hours.
- ③ Post-mortem lividity is seen in the head, neck and front of chest (may be bright pink in colour or dusky and cyanotic depending on position).
- ④ Cutis anserina (goose fleshing) - contraction of erector pilorum muscles.
- ⑤ Congested conjunctiva and subconjunctival ecchymoses.
- ⑥ After 48-72 hrs, skin of the palms & soles are bleached, wrinkled and soddened - washerwoman's hands and feet.
- ⑦ Froth from nose and mouth.

Internal findings -

- ① Airways contain stiff foam or frothy fluid or grit, gravel, mud, etc.
- ② Raltau's haemorrhages (large subpleural haemorrhages due to rupture of interalveolar partitions beneath pleura).
- ③ Lungs appear ballooned, oedematous and heavy, boggy feel. Doughy and spongy, water-logged and pit on pressure - emphysema aquosum. (victim was conscious at drowning).
- ④ Oedema aquosum - body was passively drowned.
- ⑤ No such changes in dry drowning (laryngeal spasm).
- ⑥ In saltwater drowning, lungs appear purple. In fresh water, lungs appear pinkish and crepitus is heard.
- ⑦ Blood remains in liquid state.
- ⑧ Haemorrhages may occur in the middle ear and mastoid air cells.

25/3/19

FORENSIC MEDICINE

PRAVEEN PAUL
TM6534
R.No - 87

1) Injury is any harm, illegally caused to any person in body, mind, reputation or property.

Classification:

A) Medical classification

a) Mechanical injuries

(i) Due to blunt force

- Abrasion
- Contusion
- Laceration
- Fractures & dislocation

(ii) Due to sharp edge weapons.

- Incised wound
- Chop wound
- Stab wound.

(iii) Due to fire arm.

b) Thermal injuries

(i) Due to cold

- Frost bite
- Trench foot
- Immersion foot

(ii) Due to heat

- Burns.
- Scald.

c) Chemical injuries

- caustic acids
- caustic alkalis

d) Physical injuries.

- electricity.
- lightening
- radioactive substance.

B) Medicolegal classification:

- Simple injuries
- Grievous injuries

Medicolegal importance of Abrasions.

(i) Commonly seen in accidental followed by homicidal and rarely suicidal.

(ii) May be self inflicted for purpose of falsely charging someone.

(iii) provide an idea about site of impact.

(iv) provide an idea about fingernails of assailant

(v) Help roughly to determine the time of assault.

Fresh: Red with oozing of serum, no blood, no scab.

8-24 hours - Reddish scab formed.

2nd, 3rd day - Brownish scab.

4th, 5th day - Dark brown scab.

6th day - Black scab falling off.

2)

Points of differenceLacerationIncised wound

- | | | |
|--------------------------------------|--------------------------------|-------------------------------|
| (i) Site | usually over bony prominences | Anywhere on body |
| (ii) Weapon | hard, blunt, rough | Sharp edge of cutting weapon. |
| (iii) Shape | irregular | elliptical or oval |
| (iv) Margins | irregular, uneven | clean cut, smooth |
| (v) Dimensions | Length & breadth are greater. | length is greater. |
| (vi) Mode of production | By friction, compression. | Striking with sharp objects. |
| (vii) Abrasion & bruises on margins. | present | absent. |
| (viii) Haemorrhage | less | more & external |
| (ix) Bone underneath | May be fractured | May be clean cut |
| (x) Hair | Torn with crushing of bulb. | clean cut. |
| (xi) Nature | Usually accidental | usually suicidal |
| (xii) Healing | Delayed due to infection | follow regular path |
| (xiv) Foreign body in wound | Dust and debris may be present | Absent |
| (xv) Covering clothes | usually torn | spared or clean cut. |

3) Extradural Haemorrhage.

- (i) Site — Extradural Haemorrhage occurs b/w skull & dura mater.
- (ii) Cause: Extradural Haemorrhage is always traumatic.
It is caused due to diploic veins, venous sinuses or meningeal arteries mostly middle meningeal artery.
- (iii) Features: It is more common in adults than children.
A large haemorrhage in extradural space leads to rapid compression of the brain, leading to involvement of vital centres or medulla.

- The initial injury to the brain may cause unconsciousness due to cerebral concussion.

- Recovery may follow, but later patient becomes unconscious due to cerebral ~~concussion~~ compression of brain from accumulated blood.

- ~~Recovery~~ - The intermediary period of consciousness b/w the 2 periods of unconsciousness is termed as lucid interval.

4) The entrance around from rifled firearms produce more damage & quite unexpected results.

- In rifled firearms the flame extends upto 15-20 cm, powder grains and small metallic particles upto 75 cm and upto 30 cm from the muzzle.

- Different characteristics of entry wound of rifled firearm injuries at varying ranges.

(a) Contact shot (0 cm) :-

- The wound depends on whether the muzzle is firmly pressed making a tight seal or too loose contact with the body & whether there is presence of any clothing b/w muzzle and skin.

- A muzzle impression may be seen in cases where the muzzle is tightly applied to the body.

- The skin may swell up if there is a bony area beneath the skin.

(b) Point blank (very close range) :-

- circular wounds are produced & abrasions collar as well as grease collar is present.

- There is extensive burning, blackening & tattooing.

(c) Close range (5-8 cm) :-

- Wound is invariably circular because the tearing due to gas intrusion is unlikely.

- The edges are inverted & sometimes level up or are everted due to rebounding gas.

(d) Near shot (upto 90 cm)

- Wound is invariably circular

- There is no burning.

e) Distant shot

- The entrance wound is smaller than bullet and is surrounded by an inner glove collar and outer abrasion collar.
- The margins are inverted
- Absence of burning, blackening.

9) Post mortem findings in case of asphyxia.

External examination

(i) Face :

- Swollen cyanosed
- Prominent eyeballs
- Dilated pupils.
- Bleeding from ear
- Dribbling of saliva
- Swollen blue tongue
- Bleeding from ear, nose.

(ii) Neck :

- Ligature marks are not important and specific signs of hanging.
- usually above hyoid bone.
- non-continuous.
- may be grooved, parchmentised and abraded at places.
- point of contact of skin with knot if present may have a deep parchmentised 'C' shaped abrasion.

(iii) Other findings.

- Hands are usually clenched.
- Cyanosis in fingertips, nail beds.
- Involuntary discharge of urine

Internal examination

(i) Neck:

- subcutaneous tissue shows ligature mark, dry, white firm and glistening.
- Hyoid bone may be fractured.
- Congestion of larynx & trachea.

(ii) Lungs - congested, edematous and exude bloody serum.

(iii) Brain → congested, edematous with haemorrhagic spots.

(iv) Blood → Fluid is purplish in colour.

10) Postmortem findings in Drowning

External findings.

- (i) Clothes are wet, stained with sand.
- (ii) Skin - wet, moist, pale
 - sodden, wrinkled in removed after prolonged submersion.
 - cuts anaesthesia due to contraction of erector pili muscle.
- (iii) Orifices
 - copious, fine, leathery, white froth from mouth and nose.
 - sand, mud and weed present in mouth, nose, ears.
- (iv) Rigor mortis
 - Appears early.
 - cadaveric spasm of hand.
- (v) Other non specific findings
 - stuffed & congested conjunctiva
 - postmortem injuries due to aquatic animals.
 - water and hemorrhage in middle ear.

Internal findings

a) Lungs:

(i) Drowning lung

- Ballooning over tapping heart and with rib indentation.

(ii) Dry lung

- No water in lungs.

(iii) Hydrostatic lung

- simulate drowning lung due to passage of water into lungs due to hydrostatic pressure.

b) Respiratory passage.

- presence of fine froth mixed with sand & mud.

c) Oesophagus.

- presence of sand, mud or weed.

d) Fluidity of blood

- Thick ~~in~~ in sea water, thin in fresh water.

e) Brain

- Edematous with flattening of gyri.

8) Section 820 of IPC deals with grievous injury or hurt.

According to it any of the following injuries are grievous.

- (i) Emasculation
- (ii) permanent privation of sight of either eye.
- (iii) permanent privation of hearing of either ear
- (iv) privation of any member of joint
- (v) Destruction or permanent impairing of the power of any member of joint.
- (vi) Fracture or dislocation of bone or tooth.
- (vii) permanent disfiguration of head or face.
- (viii) Any hurt which endangers life or which causes the victim to be in severe bodily pain or unable to follow his ordinary pursuits for a period of 20 days.

5) Entry wound from shotgun firearm at various ranges:
Contact shot: The contact shot wound in case of shotguns is usually a large, irregular hole resulting from the explosive blast effect.

- The edge of defect is scorched by flame if the skin surrounding is blackened by smoke & fattened by unburnt powder.
 - An imprint abrasion produced by muzzle end may be seen.
 - The shot passes into the body as solid mass.
 - The injured tissue is usually cherry red in colour.
 - Shot gun injury of the cranium is large & irregular & fractures often radiate outward from the margin.
- Close shot → This produces a circular defect with irregular inverted borders.

- The edges are scorched due to flame & smudged by smoke.
- A fairly wide zone of tattooing may surround the edge of wound.
- Tissue often appear cherry red in colour.
- The pellets enter the track in solid mass.
- Some time a shotgun may discharge part of cartridge or itself. A contact ranges these may contribute to the wound.

Near shot - The wound is circular or oval in shape.
 → Smudging may be evident around the wound up to distance 30 cm.
 → Tattooing is present over wide area.
 → The pellets travel in compact mass up to a distance of about 45 cm after which they begin to disperse.
 → The entry wound is approx. 0.5 cm in diameter.

Distant shot - Beyond the range of 2 meters there will be no burning or blackening, tattooing is also rare.
 → The dispersion of pellets becomes significant at range over 2 m. Thereafter the spread increases progressively.
 → The central defect diminishes in size proportionately.

6) Classification

Dupuytren's

First degree

Second degree

Third degree

Fourth degree

Fifth degree

Sixth degree

Advantages:

- precise.
- gives details of injury

Disadvantages:

- limited practical value
- subjective variation.

Wilson's

Epidermal burns.

Epidermal burns

Deep burns

Adv:

- More convenient
- practical.
- easy to apply

Chenical.

Superficial burns

Deep burns

7) Postmortem findings in burns

External findings

a) Clothing: smells of kerosene, petrol, any other inflammable substance.

b) Site, distribution: helps to analyse the position of victim while burning.

c) postmortem staining: cherry red postmortem staining due to presence of

d) face → usually distorted, swollen.

→ Tip of tongue usually burnt as it produces protrudes due to contraction of tissues of face and neck.

→ Mouth often pink stained appear at mouth and nose due to irritation of air passage by smoke producing copious mucous airway → acute pulmonary oedema.

→ Cornea becomes white translucent & less transparent.

e) Skin → marbled appearance due to standing out of veins as effect of heat.

→ Redness, hypera surrounding burns

→ blisters either ruptured or filled with fluid.

f) Hair → Hair of scalp, eyebrows & eyelashes may be singed partially completely burnt due to melting of or resolidification of hair keratin

g) pugilistic attitude:- characteristic posture of a body exposed to great heat above 75°C

Internal findings

→ Upper respiratory tract:
presence of carbon & soot particle in larynx & trachea.
→ congestion of mucosa & foamy mucous secretion due to irritation by inhaled gases.
→ detachment of mucous & foamy mucus secretion due to irritation by tracheobronchial tree, pharynx, epiglottis etc.

→ Lungs and pleura congested & oedematous, pleural effusion.

→ Heart: chambers filled with cherry red blood.

→ Stomach & intestine: Red in colour. May contain carbon particles in mucous membrane.

→ Liver: cloudy swelling of fatty liver.

→ Spleen: enlarged & softened.

→ Kidney: nephritis, thrombosis, infarction.

→ Adrenals: enlarged & congested.

→ Neck: Haemorrhage in root of tongue & neck muscle.



FATHER MULLER MEDICAL COLLEGE

DEPARTMENT OF FORENSIC MEDICINE

NAME : Amruth.T.O.
EXAM : Forensic Medicine

ROLL NO. : 10
DATE : 17/10/2018

1). Inquest is defined as the legal enquiry into circumstances & cause of a sudden, ~~unnatural~~ (a) ~~and~~ suspicious death.

Types of Inquest

- Police inquest. (most common)
- Magistrate inquest. (more superior)
- Coroner inquest.

• Medico-legal Examination.

Police Inquest.

→ The usually taken by the officer in charge in police stations.

→ On receiving the information of unnatural death, police informs the nearest magistrate, move to the place of death.

→, police investigator.

→ He makes enquiry in presence of 2 (or) more legal respectable persons inhabitant (panchayat) ~~and~~

→ After all investigations, he prepares a ~~report~~ report based on the apparent cause of death by the state of position of ^{body} ~~death~~, hearsy evidence, circumstantial evidences, etc. This report is called Panchanama (a) Inquest report.

This report is signed by the police & people present during the investigation.

① In case of foul play or unnatural death, the ~~patient~~
the police send the body to the police in post-mortem
on writing a requisition letter to the Judge Medical put
& copy of the post-mortem ~~report~~ is sent.

→ (X) He will proceed the post-mortem report to
the Magistrate in case of the homicide unnatural death
is proved.

objectives

① It will be done during all suspected cases deaths
(homicide, suicide etc).

② Summons is a document commanding on the
attendance of the witnesses during the Court of law
under the law of solemnity.

→ It is given to the witness before the date of hearing

→ If witness fails to attend during hearing under
no valid reason he will be punishable

⑦ Res-ipsa-loquitur.

→ means things / speak it self.
facts.

→ The things / facts of patient is sufficient to prove that the defence (doctor) was negligence & is negligent cause the damage.

→ under the act of negligence

→ The doctor has to prove that the damage harm is not by himself

- Ex:

→ Amputation of ^{normal} ~~unnatural~~ digits / limbs

→ presence of ~~swabs~~ swabs & instruments during the surgery.

→ failure to give tetanus prophylaxis.

⑧ Exhumation

→ is retrieval of ~~dead~~ buried dead body for the post-mortem (widely)

→ is the ~~authorizing~~ authorized digging of the already ^{buried} ~~dead~~ body.

Indications

→ suspected homicide.

→ Criminal abortion, crime and negligence.

→ when suspicion arises about the nature of death after it is burial.

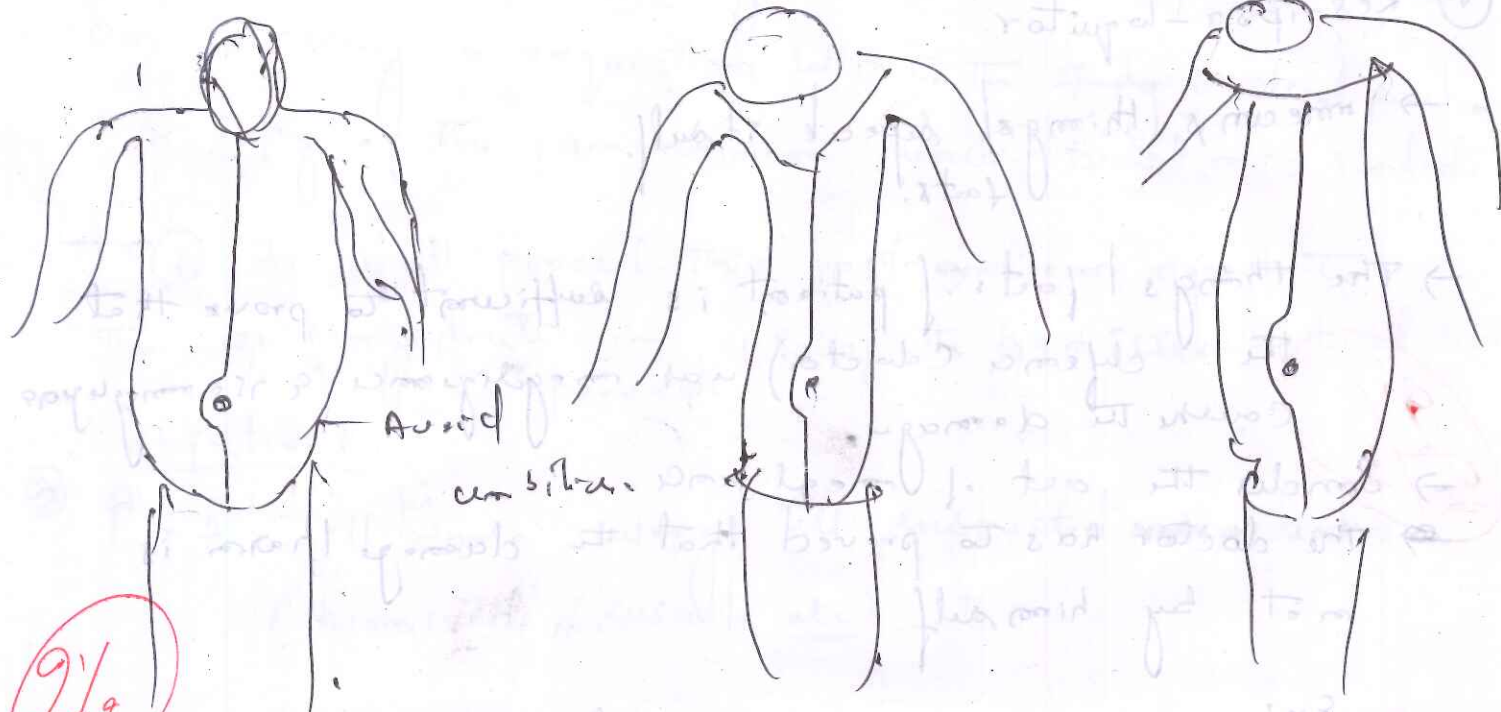
→ Exhumation is done in civil cases

① Accidental - death,

② Identity.

③ Insurance claims etc

② Types of Incision



2/2

I-shaped Incision.

Extends from the chest down to pubic symphysis crossing the umbilicus either to the left or right.

→ it is simple & convenient

Y-shaped incision.

Extends starting near acromial process across the xiphoid process, to meet the lower of 11 ribs in the opposite side of body & to down the the body to pubic symphysis

→ it is done for the details of examination of neck & particularly during strangulation / lacerations

Modified Y-shaped Incision.

→ starts from ~~acromial process~~ to the ~~pubic symphysis~~ process to the pubic symphysis

→ dissection with the pubic symphysis

→ starting from supraclavicular notch across the the clavicle to meet the line

→ it is done in female & for the view of the body

⑤

Medical autopsy is systematic examination of
dead body to know the cause & manner of death.
by the PMR
objectives

- To know the cause of death (Natural or unnatural).
- To know the manner of death (Accidental, Suicidal, Homicidal)
- To know the time since death.
- To establish the Identity (where body is mutilated, dismembered or burnt).
- To collect the evidence in case such as weapon used to kill the body person & to identify the victim.
- To know the lividity & death (from ~~death~~) (birth)

Prerequisites

- A requisition letter from the Magistrate, police etc.
- A registered medical practitioner ()
- ~~The part~~
- ~~dead~~ dead body
- Mortuary (usually done in PHC or Hospital)

③ Professional misconduct

is an act ~~done~~ by the Medical man which is considered as dishonorable / disgraceful by ~~the~~ his professional colleague. / good-repute comes to professional conduct / professional misconduct.

Acts

① Abortion: illegal termination of pregnancy under the contravention of medical pregnancy act 1971, a), ~~the~~ help in the ~~best~~ termination of child.

② Alcohol: Attending patient as operating patient under the influence of alcohol.

③ Adultery: Medical professional should be of high moral integrity. he should not misuse his position by misconduct with patient (consensual act)

④ Adultery: (sexual intercourse of man with other than his wife).

⑤ Addiction: Addiction to narcotics / selling of addictive drugs to the patients.

⑥ Drug abuse: by selling of drugs H & L scheduled drugs to the patients

⑦ Alcohol

⑧ Association:

⑨ Associating with institutions a), hospital for the patient.

⑩ Covering: Assisting person for unqualified person

③ for the purpose of treating the patient which requires more than his knowledge.

→ Dichotomy / fee splitting. is commission is taken
(a) given by pharmacy, ~~man~~ drug dealers,
manuf etc

→ Advertisement

④ ^{Employing} ~~procuring~~ agent to procure patients.

⑤ consent in medical practice.

→ is free & knowledge act for the purpose of ~~the~~

→ is free & knowledge act for the purpose of compliance act.

Two types.

① Expressed consent

② Implied consent.

→

① Summons - should be given to the witness

② oath : witness should take the oath for the declaration of the truth.
→ failure to take the oath is punishable

③ Examination in Chief : lawyer who he is summoned by his witness.

→ no leading question will be asked.

④ Cross Examination :

lawyer by the opposite side of the party.

⑤ To evaluate the ^{best} ~~best~~ evidence of him.

⑥ To check the truth of witness

⑦ He the with will check the witness behavior integrity & knowledge, language skill.

⑧ He cannot to ask the suggestion of attorney.

⑨ Leading question can be asked.

⑩ Re Examination

by the lawyer who he is summoned.

⑪ Judge

FATHER MULLER MEDICAL COLLEGE

DEPARTMENT OF FORENSIC MEDICINE

NAME :

Basavaraj. M. Pujari

ROLL NO. : 141

EXAM :

Bitterment Sessional Examination

DATE :

17-10-18

Long Essay

1. Define Inquest. Mention type of inquest. Describe the police inquest.

→ Inquest refers to an investigation carried out to find out the circumstances, cause and manner of death.

Types

i) Police inquest

ii) Magistrate's inquest

iii) Coroner's inquest and

iv) Medical Examiner's inquest.

Police inquest (Procedures)

* It is conducted by a Police officer incharge of a police station

* When police officer is informed about an unnatural death, he brings it to the notice of magistrate and proceeds to the place of death

* Police inquest is started in presence of respectable neighbourhood called "Pancha's".

* All the evidences are collected from the crime spot. and a report is prepared, which is called "Panchanama" or "Inquest report".

* Panchama is signed by Pancha's and 2 more witnesses.

* If the police seems ~~the death~~ is some foul play or

* Once the magistrate arrives, Magistrate Inquest is ~~arranged~~ carried out:

* All the evidence collected from the spot.

* For further investigation, body is sent for the post mortem examination / Autopsy along with a requisition signed by police and magistrate.

Police Inquest

→ It's widely spread in India.

→ Almost all states carry out Police inquest.

→ Other inquests are normally not seen.

Short Essay.

3. Professional misconduct

→ An act or behaviour done by a medical professional which is ~~degre~~ considered disgraceful / dishonourable by his professional colleagues of good repute, amounts to Professional misconduct.

② It's quite difficult ^{to decide} if an act done by a doctor is a misconduct or not.

However there are 6 A's, which are considered to be Professional misconduct.

① Abortion

→ Abortion without any valid cause mentioned under MTP act amounts to Professional misconduct.

The reason being, ② The female fetus
③ To

② Adultery

→ A doctor is supposed to have a good character and behave like a gentleman with his patient, patient's party and attendants. If he is found caught in cases like adultery, he will be punishable.

③ Alcohol

→ A doctor should not be under influence of alcohol or have alcohol whenever he is going to treat a patient. If he has consumed, that is misconduct.

④ Addiction

→ Taking advantages of easy accessibility of drugs, a medical professional should not be using any substance of abuse or not be addicted to it.

⑤ Advertisement

→ Any doctor should not advertise his specialized skills,
* He should not specify the fees for treatment publicly.
* He should not mention his working hours publicly.
* Name plate should not be over sized, emphasizing.

⑥ Association

→ ① Dichotomy - a doctor should not split the money if he refers a higher doctor, to a patient, as he did not give treatment to patient. Or either with pharmacist.

② A doctor should not associate with unqualified candidates and practice medicine.

4 Consent in medical practice

→ Consent is willfull agreement to a particular procedure or examination to be performed by a doctor.

①

5. Objectives of medico-legal autopsy

→ The objectives of Medico-legal autopsy / post mortem examination are as follows

- 4
- * To find out cause of death and manner of death
 - * To find time since death
 - * To find the identity of the dead (if body is putrefied & in other conditions)
 - * To find the secondary cause i.e. disease which caused the death
 - * To find out underlying diseases which did not actually cause the death, if any.
 - * To collect the specimen for further investigation
 - * To find out the ~~any~~ weapons used in attack, if any
 - * injury present over the body.
 - * In cases of Infant death
To find out if infant was dead / alive at the time of birth in cases of dead infant.
 - * And to know the cause of death of Infant.

Short answers

6. Summons

→ It's a legal notice to the witness to attend the court during the trial to give evidence.

Medico-legal importance

① It's punishable, if a person rejects summons without genuine reasons or signs it and does not attend the court.

Only, if in emergencies or very important reasons a person can be absent to court.

② For Medical Professionals

In Civil cases, an amount of money usually paid to Medical Officer who has to travel from his place of residence to court and back. In case he doesn't get the amount / if he feels it less, he can just ignore the summon. This money is called "Conduct money."

However in Criminal cases, no such amount is paid. A doctor is expected to come and give evidence as it is duty of every citizen of India to come to court to give evidence.

7. Res ipsa loquitur

→ "The thing speaks itself."

① In ^{some} cases of medical negligence, it is evident by the circumstances that, the defendant (doctor) is most probably the guilty.

② The patient (Plaintiff) need not prove doctor's negligence.

e.g. Amputation of wrong leg or toe

Surgery on a wrong area etc.

→ However the doctor has to prove that he ~~is~~ not the mistake is not his doing (if it is), in cases like mistakes by attendants, nurses etc.

8. Exhumation

→ It's a legal digging out of an already buried dead body.

Exhumation should be conducted in presence of Magistrate,

Police, Medical officer and family member/ friend to identify.

Objectives

① carried out in presence of magistrate.

① If any suspicion arises regarding investigation

① Medico-legal

① In cases of wrong identification

① In disputes of property

① Parental dispute

Procedure

① The burial area should be identified properly

① Should be carried out during sunlight

① Avoid spectators, The soil should be removed.

① ~~Sketch~~ a Photograph the corpse in ^{same} condition.

① Let the family identify the body.

① 1/2 kg soil is to be collected (in case of mineral poisoning)

① And burial cloth is collected

① Body is sent for second autopsy, with a request form signed by police & magistrate.

9. Types of incisions used in medical autopsy.

For Thorax

① I shaped incision

→ most common incision starting from chin (Symphysis menti) to Pubic symphysis, passing ~~right~~ / left side of ~~neck~~ ^{umbilicus} to avoid the cut.

② Y shaped incision

→ Starts from mastoid process behind ear, proceeds medially downwards and meet the corresponding incision from other side at supra sternal notch. From there again it extends upto pubic symphysis ~~avoiding~~ obliterating near umbilicus

③ Modified Y incision

→ Starts from the region near acromion process runs down breast and continues ~~to~~ across xiphoid process & meets the other one. From the common incision extends upto pubic symphysis

For Scalp

Coronal ~~in~~

Coronal incisions

→ The incision are made in the occipital region of the scalp.

Short Essay

2

Procedure

Once the witness makes his appearance in the court of law, he is made give

① Oath

→ The witness has to make a statement before court promising on god. After which if he says false, will be culpable.

"By the name of god, I will only speak truth, all the truth, truth but nothing else, so help me god."

② Examination in chief

→ The lawyer who called the witness to court will have to do the examination in chief.
Leading questions are not allowed.

③ Cross Examination

→ The defendet lawyer will do the cross examination so as to ^{clear} ~~clear~~ the doubts that might have arisen due to examination

④ Re-examination

→



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... we call magistrates to the spot