

5 mark important concepts



① Explain in brief about selection of site, space for community pharmacy? 5-8

The site.

The location of the pharmacy places an important role in the success of community pharmacy activities.

MACRO SURVEY

It is an overall survey of the location in which pharmacy is intended to be located.

① Location

- * Date of Survey.
- * Area of Survey.
- * Time of Survey

② Demographics of the area

- * class
- * population

③ Doctors.

- * No of Doctors.
- * No of Hospitals
- * Hospitals with pharmacy

④ Competition.

- * Number of medical shops.
- * Average business per medical shop.
- * Ratio of prescription drugs to OTC drugs

MICRO SURVEY.

Based on the conclusion of the macro survey, micro survey is done. For ex out of total no of doctors allopathic, ayurvedic, similarly for pharmacies, how many have full time pharmacist etc.

Set up of the pharmacy

* modern drug store has 3 basic element

→ The front end.

→ pharmacy counter

→ The back end.

(i) The Front end

- * It is an open section.
- * It has set of racks on both walls opp to each other.
- * This section usually has toiletries, daily items like soap, toothpaste, shampoos, etc.

(ii) pharmacy counter

- * It has following elements
 - A flap door
 - A small counter.
 - A display rack.

(iii) The back end.

- * It is the area behind prescription counter.
 - It houses a series of racks, series of drawers, a refrigerator, air conditioner, a small washbasin and a small patient counselling area.

② Explain in brief about use of computers in community pharmacy?

Communication.

- * Computers are used within pharmacy to facilitate communication. From E-mails to other internet based messaging system.
- * online communication allows pharmacist to keep in contact with their organization.

prescription processing.

- * prescription processing is one of the main activity within the pharmacy, computers are used to make this process more efficient.
- * Computers are used in customer services such as sales and cash handling.

Information.

- * Having access to web via pharmacy computers enhanced ability of the pharmacist to carry out their duties.

- * pharmacy staff can access to vast store of information that is available on the Internet.

Databases

- * computer databases for information about medicines, medical treatment, are used within pharmacies.

- * Information may include ingredients, effects, research and scientific data.

Error prevention.

- * pharmacy computers helps to prevent errors and potentially saved life.

- * It helps in checking medicines, combination of medicine, patient information etc.

③ Discuss the legal requirements in community pharmacy ?

Licenses

@ general license

- * It is granted to person who have premises for business and engage the qualified person for sale condition for general license

- * license should be displayed in prominent place open to public.

- * license should comply with provision of drug and cosmetics act.

- * change in staff should be reported to licensing authority

- * For the sale of additional category of drug prior permission should be taken.

③ Restricted license

* It is for the retail sale of drug other than those specified in C, CI and X schedule

Condition for Restricted License

- * Drug should be sold in their original container.
- * License should comply with provision of drugs and cosmetics act.
- * Drug should only purchased from duly licensed dealer.
- * Licensor must have adequate premises equipped with facilities for proper storage

④ Explain the need of registers in community pharmacy?

* For various reasons it is important to maintain records.

- Legal records.
- patient records.
- financial records.

① Legal records.

* It is the law regarding acquiring and disposition of the drugs.

* According to federal state law, the pharmacy owner is responsible for maintenance of up-to-date records of specific classes of drugs according to drugs and cosmetics Act 1940.

(ii) patient records

- * To include patient's drug history these type of records are maintained.
- * These records serves in economic purposes, source of information for insurance claims and for income tax deduction of the patients.

(iii) Financial Records.

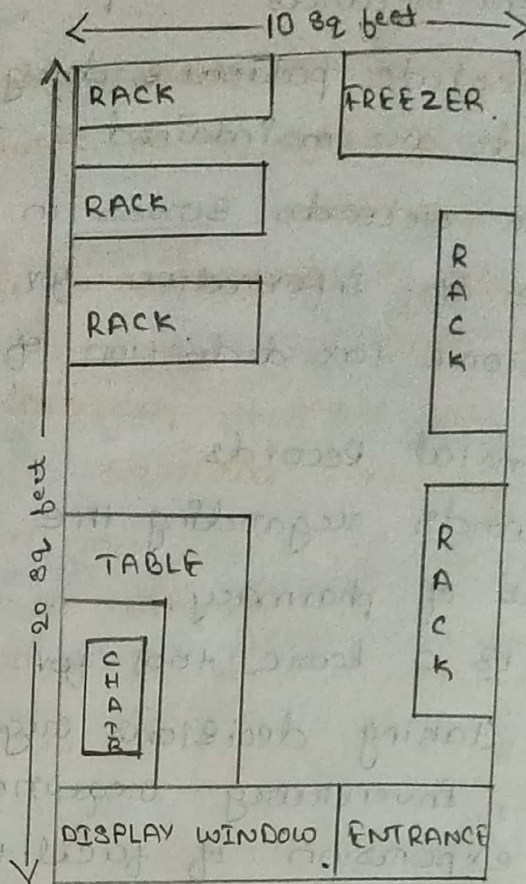
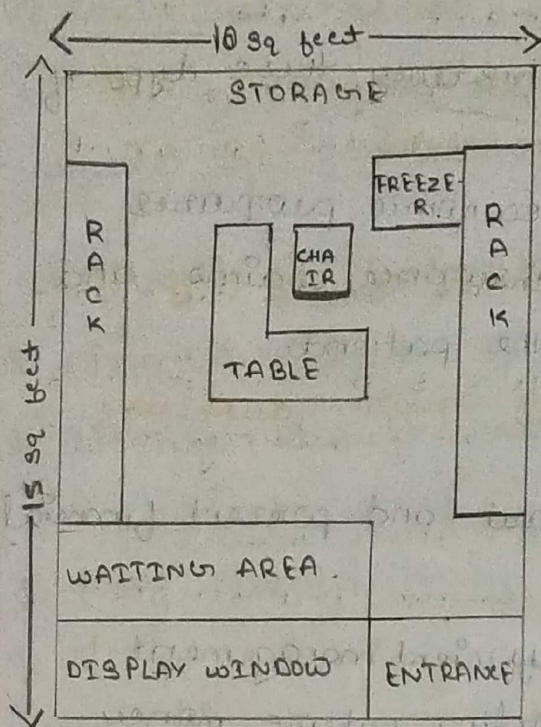
- * Records regarding the past and present financial status of pharmacy.
- * It is a basic tool for efficient management.
- * For taking decisions regarding future money needs, inventory requirement, personnel matter and expansion of facilities.
- * Analysing revenue and expenses.
- * measuring return on investment.

(5) Explain the layout of community pharmacy?

- * one of the main factor responsible for success of drug store is its location & layout design.

objectives of layout design.

- * To attract large number of customers.
- * To Increase the sale of a store.
- * To reduce selling expense to minimum.
- * To provide customer satisfaction.
- * To have space for reserve of stock, office and meeting place for employees.
- * To have proper entrance for coming goods.
- * To project professional image.
- * To minimize the movement of customers within the premises of drugstore.



RETAIL DRUG STORE DESIGN.

WHOLESALE DRUG STORE DESIGN.

⑥ How coding and decoding are done in community pharmacy code

A code is a rule for converting a piece of information into another form, not necessarily of the same type.

* encoding is the process by which information from a source is converted into symbols

* decoding is the reverse process, converting these code symbols back into information understandable by a receiver.

Ex: Cryptography.

Bar coding

- * A barcode is an optical machine-readable representation of data, which shows certain data on certain products.
- * Bar code is represented in lines and spacing of parallel lines.
- * They also come in patterns of square, dots and other geometric patterns.

Importance of coding and stocking

- * Coding is done for particular material for good system of store keeping.
- * Ambiguity in description is avoided.
- * Length in description is avoided.
- * Code ensures item lying in the store.
- * Stored item is easily identified, when same item is known by different name.

⑦ Explain various barriers of patient counselling.

- * patient counselling won't take place in community pharmacy due to various reasons.

- i) patient based barriers
- ii) provider based barriers
- iii) system based barrier.

① patient based barriers

- * In India many patients are unaware that pharmacist may provide counselling and generally ask their prescriber about medication use.
- * Gender and language difference inhibit patient to know about drugs from pharmacist.

② provider based barriers

- * many pharmacists lack confidence to counsel patients due to lack of knowledge and counselling skills.
- * Heavy patient load for prescription filling.

③ System based barriers.

- * counselling is not a mandatory legal requirement in India.
- * Officially pharmacists are not allowed to charge fees dispensing or for information provided to the patient.
- * Lack of privacy in Hospital and community pharmacy.

⑧ Different methods to overcome patient counselling barriers ?

- * provider based barriers are easier to modify.
- * pharmacists can start updating their knowledge and counselling skills.
- * confidence can be developed by focusing on particular disease or group of drugs.
- * good approach is to ask "have you used this medicine before"
- * Encouraging patients to ask question about their medication.
- * conduct medical campaigns
- * offer health screening services like BP and Blood glucose measurement.
- * pharmacy councils conduct educational programmes for helping pharmacists to update therapeutic knowledge and counselling skills.

9) write about advantages and disadvantages of patient counselling?

Advantages.

- * Better patient understanding of their illness and role of medication in treatment.
- * Improved medication adherence
- * more effective drug treatment.
- * Decreased incidence of medication errors, adverse effects
- * Improved quality of life of patient

Disadvantage.

- * Sometimes the pharmacist talks about their own personal issues. This should be a red flag.
- * The pharmacist is not paid for pt counselling
- * counselling is not a legal mandatory requirement in India
- * counselling is time consuming and patient might be in hurry, pain or not communicative.

10) what are the various stages of pt counselling?
patient counselling consists of three stages.

- ① Introduction.
- ② process content.
- ③ conclusion.

① Introduction.

- * Review the patient's Record.
- * Introduce yourself.
- * Explain purpose of counselling.
- * obtain drug related information such as allergies, use of herbals etc.
- * Assess patient understanding of the reason for therapy.

② process content

- * use language that patient understand.
- * use appropriate counselling aids
- * facts and concepts in simple words and in logical order

③ conclusion

- * verify patient's understanding by means of feedback.
- * summarise by emphasizing key points.
- * give an opportunity to the patient to put forward any concerns.
- * help the patient to follow up

3-6

⑪ Explain patient Information leaflet (design & layout).

- * patient Information leaflets are produced by the drug manufacturers for their products
- * It is written information in simple language about patient's illness and its treatment

parts of patient Information leaflet.

① Indications and usage.

② Dosage and administration

- Recommended adult dosage.
- Recommended pediatric dosage
- pregnancy
- Renal & hepatic Impairment.

③ Dosage forms and strengths.

④ contraindications.

⑤ warning & precautions.

- drug Interaction
- nephrolithiasis & cholelithiasis
- Diabetes mellitus
- hemophilia

- ⑥ Adverse reaction
- ⑦ use in specific population
 - ① pregnancy
 - ② pediatric use
 - ③ geriatric use
 - ④ Age (gender)
- ⑧ over dosage
- ⑨ clinical pharmacology
 - ① MoA.
 - ② pharmacodynamics.
 - ③ pharmacokinetics.
- ⑩ Storage & Handling.
- ⑪ pt counselling information.

Layout

- * good readability, layout and design are the important factors in developing the information leaflet
- * An internationally accepted Baker Able leaflet design (BALD) criteria is used for good design of information leaflet.
- * Flesch Reading ease (FRE) score is commonly used to assess readability of written text.
- * A well designed information leaflet helps patient to understand the content.
- * Reading ease score of FRE scale are 0-100. If score is < 60 , then it is difficult to read. The ideal PIL should have readability score > 80 .
- * Acc to BALD criteria, length of line, space b/w the line, letter type, font size are assessed.

12. Explain advisory labels in patient counselling.

- * Advisory labels are sometimes added to a medicine dispensed by the pharmacist to the patient.
- * The labels are not a substitute for adequate counselling by the dispenser but it contains essential information the patient needs to know.

Types of advisory labels.

- * for providing advice regarding medication use
- * for warning about undesirable effects

Advisory label ^{can} offer advice about:

- Timing of doses in relation to food.
- completing the course of treatment.
- what has to be done if a dose is missed.
- The correct storage of a medicine.
- Dissolution of medicine in water before taking it.
- Limits to the number of tablets that should be taken in a given time.

Advisory label can offer warnings about:

- Effects of medicine on driving or work.
- Foods or medicine that should be avoided.
- Avoidance of exposure of skin to sunlight.
- medicine that can discolour the urine.
- medicine that can stain clothes or skin.

13. Explain Advisory label for paracetamol.

- * Do not give to children under 12 yrs of age.
- * Adults: keep to recommended dose. Do not take this medicine for longer unless advised by a doctor.
- * Do not give this medicine for longer than 48 hours unless advised by a doctor.
- * Excessive use can be harmful and increases the risk of heart attack, stroke or liver damage.

- * Do not use if you are pregnant or likely to be pregnant.
- * Do not use if you have a stomach ulcer.
- * Do not use if you have impaired kidney function.
- * Do not use if you have heart failure.
- * Do not use if you are allergic to ibuprofen or other anti-inflammatory medicines.
- * If you get allergic reactions, stop taking and see your doctor immediately.
- * Do not use if you have asthma, unless advised by a doctor.
- * Do not use if you are aged 65 years or over, unless advised by a doctor.
- * Do not take with other products containing paracetamol, ibuprofen, aspirin or other anti-inflammatory, unless advised by doctors.
- * If an overdose is taken or suspected, ring poison information centre or go to hospital straight away even if you feel well because of risk of delayed liver damage.

14. Explain advisory label for cough syrup

① Antitussives

Includes dextromethorphan, pholcodine

- * Do not use in children under 6 years old.
- * Consult a doctor before using in children aged six years or more.

* Do not use with other medicines intended to treat the symptoms of common cold, unless advised by doctors.

② Antihistamines, non-sedating.
Includes cetirizine, loratadine

- * Do not use in children under 6 yrs of age
- * Consult a doctor before using in children aged six years or over.
- * Do not use with other medicine intended to treat the symptoms of common cold, unless advised by the doctors.
- * Do not use with other antihistamines

15. Explain advisory label for proton pump inhibitor?

- * Chronic use can result in rebound headache
- * Do not use if you have irregular heartbeat.
- * Do not use if you are allergic to sulphonamides
- * Do not use if you are allergic to other migraine medication except on doctor's advice
- * Do not use if you are pregnant
- * Take the drug half an hour before meal
- * Do not use if you are experiencing weight loss

vomiting

- * This product is for temporary use only
- * Consult a doctor if condition persists ①
- * Consult a doctor if new symptom occur.

16. write a note on diarrhoea?

- * Diarrhoea is a common symptom, its severity ranges from acute to chronic
- * It is referred as increased frequency of bowel movement, Increased stool liquidity, sense of fecal urgency
- * From a medical standpoint, diarrhoea is defined as a stool weight of more than 250g/24h.

* causes of acute infection diarrhoea.

viral :- Norwalk virus, Rotavirus

protozoal :- Entamoeba histolytica

Bacterial :- Staphylococcus aureus, Vibrio cholerae

* causes of chronic diarrhoea

osmotic diarrhoea

Secretory diarrhoea

Malabsorption Syndrome

Motility disorders

Treatment

Rehydration :-

* In severe diarrhoea, dehydration can occur quickly especially in children.

* oral rehydration with fluids containing glucose, Na^+ , K^+ , Cl^- & bicarbonate ORS is readily available

Antidiarrhoeal Agents.

* Loperamide is the preferred drug in a dosage of 4mg

* Bismuth subsalicylate 30mL 4 times daily.

Antibiotic therapy.

* Empiric treatment - fluoroquinolones (e.g. ciprofloxacin) 500mg for 7 days.

17. write a note on dyspepsia?

* It is defined as discomfort or pain in the upper part of the abdomen, occur very commonly in the general population.

* Dyspepsia can be divided into 2 main categories.

-> organic dyspepsia.

-> functional dyspepsia.

* Organic causes of dyspepsia are peptic ulcer, gastroesophageal reflux disease, pancreatic or biliary disorders.

* Functional is non-ulcer dyspepsia.

Common Symptoms

- (i) Belly pain.
- (ii) Nausea.
- (iii) Vomiting.
- (iv) loss of appetite.
- (v) Heart Burn

Common cause of dyspepsia include

- (i) Swapped-up stomach juices and gas caused by gastroesophageal reflux disease (GERD).
- (ii) peptic ulcer.
- (iii) Inability to digest milk and dairy products (lactose intolerance)
- (iv) side effects of caffeine, alcohol, or medicines
- (v) Swallowed air.
- (vi) Stomach cancer.

* Delayed gastric emptying is the pathophysiologic mechanism of functional dyspepsia.

18. common drug therapy to pain.

* pain is unpleasant, sensory and emotional experience associated with tissue damage.

Classification of pain.

→ Nociceptive :- Response to injury of tissues such as skin, muscles, visceral organs, joints, tendons, bones

→ neuropathic: pain due to disease in the somatic nervous system,

Non-pharmacologic Interventions

- * Application of heat & cold,
- * massage, Exercise
- * music therapy
- * hypnosis
- * distraction

pharmacological treatment

Analgesics

- ① adjuvant analgesics (morphine, fentanyl etc)
- ② opioids
- ③ Non-opioids
 - ① Acetaminophen
 - ② NSAIDs (Ibuprofen, Aspirin etc)

④ vomiting / Nausea (ditto que)

* vomiting is the oral expulsion of upper gastrointestinal contents resulting from contractions of gut

Causes

- ① Drugs.
- ② physiological condition
- ③ Radiation.
- ④ Infection.
- ⑤ alcohol
- ⑥ Head Injury
- ⑦ Motion sickness
- ⑧ Gastric Irritation.

Nausea

It is the subjective feeling of need to vomit.

Stages of vomiting.

- * Nausea.
- * Retching.
- * vomiting.

Mechanism.

- * vomiting is co-ordinated by brainstem and effected by neuromuscular response in the gut, pharynx and thoracoabdominal wall.
- * Several brainstem nuclei initiate emesis
- * Nuclei that controls pharyngeal, facial and tongue movement co-ordinates the initiation of emesis
- * Neurotransmitters involved in co-ordination are uncertain, however roles for neurokinin NK1, Serotonin & Vasopressin pathways are postulated.

20. Drugs used in the treatment of nausea/vomiting

① cinnarizine, cyclizine :-

- * These medicines belong to a group of medicines called antihistamines
- * Antihistamines blocks the H_1 receptors in the brain which creates nausea in response to chemical in the body
- * They work well for nausea caused by ear problem and motion sickness

② Hyoscine

- * This medicine works by blocking a chemical in the brain called acetylcholine.
- * It is a antimuscarinic works well for nausea caused by ear problem and motion sickness.

③ Haloperidol, prochlorperazine

- * These drugs act by blocking a chemical in the brain called dopamine
- * useful in nausea caused by some cancers, radiation, opiate medicine such as morphine, codeine
- * prochlorperazine is one of the most used medicine for nausea. It works for many causes of nausea including vertigo, ear problem and sickness in pregnancy

④ Domperidone

- * These medicines work on the CTZ
- * It is also speeds up the emptying of the gut.

⑤ ondansetron: These medicines work by blocking a chemical called Serotonin (5-HT), in the gut and in the brain

- * These medicines are useful for controlling nausea and vomiting caused by chemotherapy.

6-8:30

⑥ Constipation

- * An intact nervous system is vital for normal defecation
- * many patient develop constipation due to colon motility disorder due to abnormality in nervous system
- * Constipation is also caused due to increased storage capacity, rectal spasticity & hypertonicity of anal

Clinical presentation & Diagnosis

- * patient definition of change in bowel habit must be asked.
- * onset and duration of constipation, description of stool, presence of symptoms are necessary information.

* physical examination should include an abdominal examination & digital examination of the rectum

pharmaceutical therapy

* Barium enema should be initiated in chronically constipated patient.

* many laxative alters intestinal fluid and electrolyte transport mechanism, thereby causing defecation.

* Agents such as bulk-forming agents, hyperosmotic agents, stool softeners, lubricants, saline and stimulant laxatives.

22. Discuss worm infection

Hook worm disease :-

* This is an infection of the small intestine caused by *Necator americanus*

* The adult worms live in small intestine attached to mucosa, the female liberate egg, which are eliminated in feces and develop into larvae

* Infective larva enters the host in contaminated food or water

* In intestine injury is caused by mechanical destruction of tissue, The loss of blood can lead to anaemia

Treatment

* mebendazole 100mg twice daily for 3 days

* Albendazole is the alternate drug

Ascariasis.

- * Ascariasis is caused by roundworm *Ascaris lumbricoides*
- * mebendazole 100mg twice daily for 3 days
- * Albendazole 400mg as a single dose.

Enterobiasis

- * It is a pinworm infection, caused by *Enterobius vermicularis*
- * mebendazole 100mg twice daily for 3 days
- * Albendazole 400mg as a single dose

Tapeworm Infection.

- * Tapeworm infection is caused by *Taenia solium*
- * It is result of ingestion of poorly cooked pork that contains the larvae
- * larvae matures into tapeworm and attaches to host jejunum
- * The larvae can penetrate the bowel and migrate through the bloodstream to infect different organs including CNS.
- * Treatment involves antihelminthic therapy 'albendazole' 400mg as a single dose

23. write a note on pyrexia.

- * pyrexia is common medical sign characterized by an elevation of temperature above normal range due to increase in body-temperature regulatory set-point.
- * Fevers that are regulated by hypothalamus usually do not rise above 41°C - safety mechanism.
- * Pyrogen or pyretic - An agent that causes fever

Causes of fever

① Central type fever = neurogenic fever

- * Caused by damage to hypothalamus
- * CNS trauma
- * Intracerebral bleeding
- * Drugs (anaesthetics)

→ Neurogenic fevers are characterized by high temp that is resistant to antipyretic therapy.

② Non-central type fever

- * Infectious disorder
- * Trauma
- * Surgery
- * Gram +/- sepsis
- * Non-infectious disorder
- * Myocardial Infarction

Types of fever

① Intermittent

- * Temp returns to normal at least once 24 hrs

② Remittent

- * Temp does not return to normal and varies a few degrees in either direction

③ Sustained

- * Temperature remains above normal with minimal variation

④ Relapsing

- * There is one or more episodes of fever, each long at several days

24. write a note on opthalmic symptoms.

① Refractive errors.

* Refractive errors includes myopia, hypermetropia, presbyopia, Astigmatism

* Symptoms include blurred vision, double vision, haziness, glare, headaches and eyestrain.

② Cataracts

* It occurs in either or both eyes

* Symptoms include blurred vision, glare, Double vision

③ glaucoma

* It is a disorder caused by damage to optic nerve

* It is normally associated with increased fluid pressure in the eye.

* The term "ocular hypertension" is used for the people with consistently raised intraocular pressure without any associated optic nerve damage.

Types.

* wide angle glaucoma

* narrow angle glaucoma

④ conjunctivitis.

*

25. Define pharmaceutical care & write in detail about principles of pharmaceutical care?

→ pharmaceutical care is patient centered approach which involves drug therapy for the purpose of achieving definite outcome to improve patient's quality of life

① Data collection

- * pharmacist conduct initial interview with the patient and collects patient's record

- * past medical history, medication history, social history, family history, history of present illness are recorded

② Information Evaluation.

- * The pharmacist evaluates the subjective and objective information collected from the patient

- * The pharmacist records the conclusion of the evaluation of pharmacy records

- * The pharmacist discusses conclusion with the patient for appropriate understanding of the illness

③ Formulating a plan.

- * The pharmacist, in concert with other healthcare providers, evaluates and chooses most appropriate actions

④ Implementing the plan.

- * The pharmacist and the patient takes necessary steps to implement the plan

(8) monitoring & modifying the plan

* The pharmacist regularly reviews subjective and objective monitoring parameters in order to obtain satisfactory progress.

10 mark important concepts



10 marks 4:35-4:50
① Define health screening explain about cholesterol testing.

- * Health screening is the strategy used to detect a disease in individuals without signs or symptoms by means of inexpensive diagnostic test.
- * It is the services provided by health care professionals
- * The intention of screening is to identify disease in community early.
- * Over diagnosis and misdiagnosis are some potential adverse effects of screening.

Cholesterol test measures four types of lipid in blood.

- ① Total cholesterol → This is the total amount of cholesterol in the blood.
- ② Low density lipoprotein (LDL) cholesterol → This is referred as bad cholesterol. Elevated level indicates the risk of Heart attack, stroke and atherosclerosis.
- ③ High density lipoprotein (HDL) cholesterol → This is referred as good cholesterol. It helps in removal of LDL cholesterol from the blood.

④ Triglycerides :-

- * When we eat, our body converts the calories it doesn't need into triglycerides, which are stored in fat cells.
- * People who are overweight, diabetic, eat too many sweets, or drink too much alcohol can have high triglyceride level.

ATP III Classification.

① Total cholesterol

< 200	Desirable
200 - 240	Borderline high
≥ 240	High

② HDL cholesterol

< 40	Low
≥ 60	High

③ LDL cholesterol

< 100	Optimal
100 - 130	Near optimal
130 - 160	Borderline high
160 - 190	High
≥ 190	Very High

④ Triglyceride level

< 150	Normal
150 - 200	Borderline high
200 - 500	High
≥ 500	Very High

* If cholesterol numbers are outside normal range, patient may at higher risk of heart disease, stroke, atherosclerosis.

* If test results are abnormal, doctor may order blood glucose test for diabetes.

* might also order for thyroid function test to determine if thyroid is underactive.

② what is the importance of health screening services?
Explain about testing of blood pressure.

* WHO defines health as "State of complete physical, mental and social well-being and not merely the absence of disease".

* Health screening is the strategy used to detect a disease in individual without signs or symptoms by means of inexpensive diagnostic test.

* It is the service provided by health care professionals.

* The intention of screening is to identify disease in community early.

* over diagnosis and misdiagnosis are some potential adverse effects of health screening.

Advantages of health screening by community pharmacist

* Early detection and prevention of disease

* Reduced risk factor.

* Improved quality of life.

* Maintain good health and well-being.

* Reduce cost and future complex problems.

BP Test.

* Blood pressure is measured using an instrument called as sphygmomanometer

* Medical practitioner follows the following steps while recording BP.

- (i) A cuff is tied around the patient's arm
- (ii) Stethoscope is placed on the artery that runs over the elbow.
- (iii) The pressure in the cuff is raised to a particular level and then slowly reduced
- (iv) The sphygmomanometer reading where first beat is heard is recorded as 'systolic blood pressure'
- (v) The sphygmomanometer reading where sound of the beat stops is recorded as 'diastolic blood pressure'

→ Hypertension is defined as persistently elevated arterial blood pressure

Classification

	Systolic (mmHg)	Diastolic (mmHg)
Normal	< 120	< 80
prehypertension	$120 - 140$	$80 - 90$
Stage 1 hypertension	$140 - 160$	$90 - 100$
Stage 2 hypertension	≥ 160	≥ 100

→ Isolated systolic hypertension is systolic pressure > 140 mmHg and diastolic pressure < 90 mmHg

→ Hypertensive crisis i.e. BP $> 180/120$ mmHg may be categorized as hypertensive urgency or hypertensive emergency.

③ Define. Health screening ? Explain about blood sugar testing

- * Health screening is the strategy used to detect a disease in individual without signs or symptoms by means of inexpensive diagnostic test
- * It is the service provided by health care professionals
- * The intention of screening is to identify disease in community early

Blood glucose screening.

Chemical methods.

- * glucose oxidase method
- * Folin Wu method
- * Hexokinase method

GLUCOMETER.

- * measure only approximate values
- * It is a simplest device used to measure capillary blood glucose

→ steps to be carried out for measurements.

Step 1

- choose the site for the blood sample, usually the side of finger is used
- use an alcohol swab to clean the site and let the alcohol dry.

Step 2

- Insert test strip into glucometer, as per instruction.
- glucometer must be placed in a comfortable place

Step 3:

- * use lancet device to draw blood and then dispose the used lancet.

Step 4:

- * Apply the blood to the testing strip in the correct way
- * Some strips suck up the blood directly from the site of bleeding
- * place cotton ball over the site and let the patient hold it.
- * glucometer displays the results within 5-30 sec
- * Record and interpret the results.

-> Hypoglycemia is defined according to following serum glucose levels

- * $< 50 \text{ mg/dL}$ in men
- * $< 45 \text{ mg/dL}$ in women
- * $< 40 \text{ mg/dL}$ in Infants & children

④ Discuss about the lung function test

- * non-invasive diagnostic test that provide measurable feedback about the functions of the lungs
- * pulmonary function tests are group of tests that measure how well the lungs take in and release air.

SPIROMETRY

- * Spirometry is the method of assessing lung function by measuring the volume of air that the patient can expel from the lungs after a maximal inspiration.

-> Spirometry is the best way of detecting the presence of airway obstruction and definitive diagnosis of asthma and COPD.

Lung volumes

① Tidal volume (V_T).

- * volume of air inspired or expired during normal quiet breathing

$$V_T = 500 \text{ ml}$$

② Inspiratory Reserve Volume (IRV).

- * The maximum amount of air that can be inhaled above tidal volume

$$\text{men} = 3 \text{ L}$$

$$\text{women} = 2 \text{ L}$$

③ Expiratory Reserve Volume (ERV).

- * maximum amount of air that can be exhaled below tidal volume.

$$\text{men} = 1 \text{ L}$$

$$\text{women} = 0.5 \text{ L}$$

④ Residual volume (RV)

- * volume of air remaining in the lungs at the end of maximum expiration

$$\text{men} = 1.2 \text{ L}$$

$$\text{women} = 1 \text{ L}$$

⑤ Vital capacity (VC).

- * Maximum amount of air that can be Exhaled after a maximal inspiration

$$VC = IRV + ERV + TV$$

⑥ Total Lung Capacity (TLC)

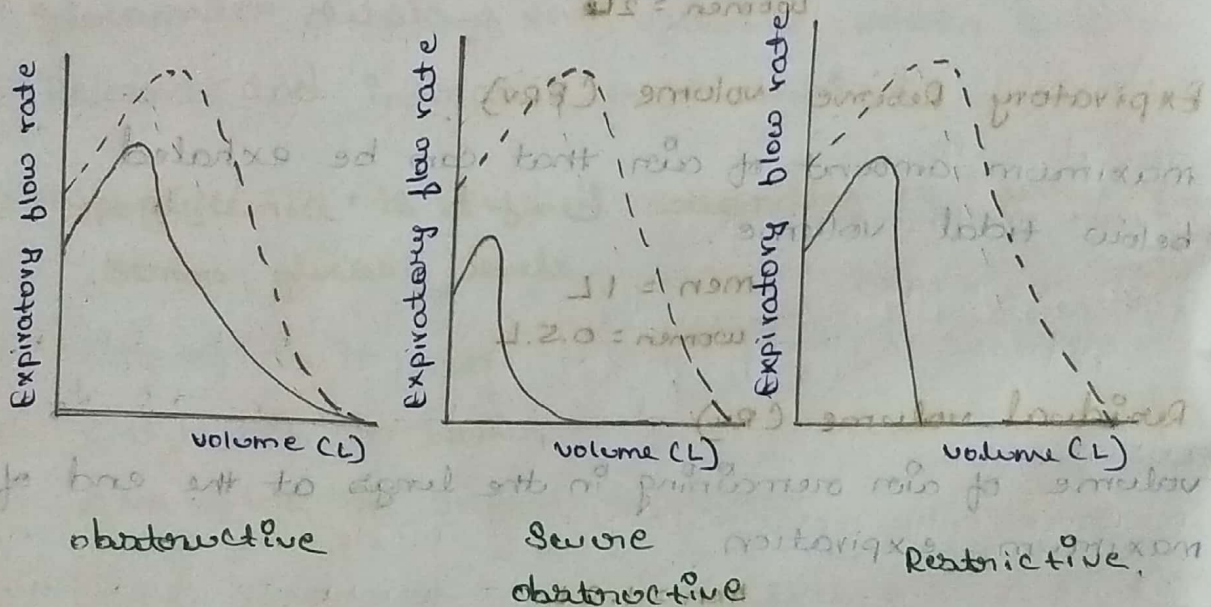
- * volume of air in the lungs after a maximum inspiration

$$TLC = V_T + IRV + ERV + RV$$

procedure

- * Have the patient sitting comfortably
- * Loosen any tight clothing
- * Empty the bladder before if needed
- * Breathe in until the lungs are full
- * Blast the air out forcibly as fast as possible
- * Continue the blowing until lungs feel empty.
- * Repeat the procedure till 3 reading are obtained

Abnormal - Flow volume patterns.



Different pulmonary test.

- * Spirometry
- * Lung volume test
- * Gas diffusion test
- * Exercise stress test

$$V_T + V_{I2} + V_{I1} + V_R = TLC$$

⑤ Define balanced diet, write note on vitamins deficiency disorders and its prevention.

* A diet consists of different types of food that provide adequate amount of nutrients necessary for good health.

* It contains proper proportions of carbohydrates, fats, proteins, vitamins, minerals and water necessary to maintain good health.

① Vitamin A (Retinol)

Deficiency disorder

- > Night blindness
- > Conjunctival xerosis
- > Corneal xerosis
- > Bitot's spots

Prevention.

- * Adequate intake of food rich in vitamin A
- * Reducing the severity of contributing factors such as PEM, respiratory tract infection

② Vitamin D

Deficiency disorder

-> Rickets

* This involves reduced calcification of growing bones characterized by bone deformity, muscular hypertonica
prevention.

- * Educating parents to expose children regularly to sunshine
- * periodic dosing of young children with vitamin D.

③ Vitamin E

* While there is no doubt that man requires vit E in the diet, there is no clear indication of dietary deficiency.

④ Vitamin K

Deficiency disorder

* If vitamin K deficiency, the prothrombin content of blood is markedly reduced and the blood clotting time is considerably prolonged

Prevention,

* Infants who are at risk should receive a single dose of vitamin K preparation

⑤ Vit B₁ (thiamine)

Deficiency disorder

* Beriberi

* Wernicke's encephalopathy

Prevention

* Educating ppl to take well balanced diet rich in thiamine

* Advice pt to stop drinking alcohol.

* Direct supplementation at high risk.

⑥ Vit B₂ (Riboflavin)

Deficiency disorder

* cheilosis

* glossitis

Prevention.

* Daily intake of 0.6mg per 1000 kcal of energy intake

⑦ Vit B₃ (Niacin)

Deficiency disorder

* Diarrhoea.

* Dermatitis

* Dementia.

Prevention

Mixed diet containing milk & meat.

⑧ Vitamin B₆ (Folic acid)

Deficiency

* Folate deficiency results in megaloblastic anemia
glossitis, cheilosis
prevention

* Folic acid Supplementation.

⑨ Vitamin B₁₂ (Cobalamin)

Deficiency disorder

* megaloblastic anemia

* Infertility

prevention

* Daily intake of 1mcg in adults

⑩ Vitamin C

Deficiency disorder

* Scurvy, characterized by bleeding gum, anemia,
Weakness.

prevention

* daily intake of 40mg of vit C.

⑪ Define Health? pharmaceutical care for geriatrics

* Health is a state of complete physical, mental
and social well-being and not merely the absence
of diseases.

① Avoid unnecessary drug therapy

→ Before commencing therapy ask the questions like

* Is it really necessary?

* Is there any alternate therapy?

→ use non-pharmacological treatment where ever possible

② Treat the cause rather than Symptom

* Symptomatic treatment without specific diagnosis can be dangerous.

Eg: Patient presenting with indigestion may be suffering from angina, so use of proton pump inhibitor is clearly inappropriate.

③ Drug History.

* Taking drug history can avoid drug interaction polypharmacy, allergy

* Cardiac, hepatic, renal failure must be taken into account

④ Choosing the drug

* Select the drugs with maximum efficiency and minimum side effects

⑤ Dose titration.

* Elderly require smaller doses of drugs compared to young adults

* It is rational to start with smaller dose possible and gradually increase if necessary

⑥ Choosing right dosage form.

* Syrups, suspensions, effervescent tablets are preferred over large tablets and capsules.

⑦ packaging and labelling

* medicines should be dispensed in easy to open containers labelled in large print

⑧ Adverse drug Reaction

* Reason for ADR in elderly:

→ Age dependent

→ multiple disease & drugs

④ Medication Adherence

Reasons for non-adherence

- * cognitive impairment
- * multiple drug therapy
- * complicated regimens

methods to improve adherence

- * keeping prescription diaries
- * special packaging
- * counselling

⑤ Describe pharmaceutical care of paediatrics

① Dose calculation

* Height and wt are rapidly changing factors in childhood, which influence significantly on some pharmacokinetic parameters

* For dose calculation formula's such as

→ Young's Rule (If Age in years)

$$PD = \frac{\text{age}}{\text{age} + 12} \times \text{adult dose}$$

→ Fried's Rule (If Age in months)

$$\text{I or PD} = \frac{\text{age}}{150} \times \text{Adult dose}$$

→ Clark's rule

$$PD = \frac{\text{weight}}{70} \times \text{adult dose}$$

② choice of dosage form

- * Tablets are less convenient
- * Liquid preparations are easy to administer in accurate dose
- * IV access is difficult because of small veins

③ Disease condition

- * During liver disease, hepatic disease, cystic fibrosis serum drug concentration should be monitored

④ Adverse reaction in Therapy

- * Tetracycline → Teeth brown coloration
- * Corticosteroids → Growth Suppression
- medication errors are also considered as an important cause of ADR's.

⑤ counselling adherence & concordance

→ patients administer medicines to their children and therefore concordance and adherence of both parties must be considered

Reason for non adherence

- * child refusing to take medicine
- * complicated dosage regimens
- * misunderstanding of instructions

methods to improve adherence

- * Attention should be given to the formulation, taste, appearance and ease of administration
- * Regimen should be simple
- * Many health professionals counsel the parents only, rather than involving the child.

⑧ Describe the pharmaceutical care for Breast feeding mothers.

Factors Influencing Drug transfer into milk.

① mother related factors

→ composition of milk and its pH

* human milk is composed of lipids, carbohydrates, proteins. The fat content of milk governs the solubility of drugs in it.

→ mammary perfusion

* The blood flow to mammary gland and secretion of prolactin affects the volume of milk ejected

* This in turn affects the extent of drug transferred to Infant

→ other parameters .

* Drug dosage

* Duration of therapy

* Route of administration

② Infant related factors.

→ Quantity of milk consumed.

* greater the quantity of milk consumed, the higher will be the rate of drug transfer to infant

→ Age of Infant

* older Infant possess well developed organs and can metabolise more drug than young Infant

③ Drug Related factors .

→ Molecular wt of the Drugs

* Molecular wt > 6000 does not pass into milk.

→ pK_a of drug

* higher the pK_a value greater the drug trapping by the milk.

weak acid

dissociation constant.

→ Lipid solubility

* Highly lipophilic drugs attain high conc in milk.

Drug therapy in nursing mothers

* Avoid OTC drugs

* Dosage regimen should offer minimum risk to infants

* If maternal drug consumption is absolutely necessary, nursing should be stopped.

* Avoid use of long acting Sustain release formulations

Q Describe the pharmaceutical care for pregnant women?

* Pregnant women complain of many symptoms such as nausea, vomiting, constipation etc

* To relieve these symptoms and to treat other disease, they take many drugs, only few of them are safe

Factors Influencing Drug transfer across placenta

① Drug related factors

→ Molecular wt of the drugs

* molecular wt > 6000 does not pass into milk.

* molecular wt < 300 readily pass into milk.

→ P_{Ka} of drug

* higher the P_{Ka} value greater the drug transfer

→ lipid solubility

* since fetal membranes are lipophilic in nature, lipophilic & unionised drugs can easily pass through placenta

→ protein binding

* milk has low protein binding capacity. So highly protein bound drugs do not pass into milk.

Teratogens

* Teratogen is an agent that has the potential to cause malformations and functional abnormalities in the fetus

Extent of damage depends upon

* physicochemical properties of teratogen

* dose & route of administration

Drug therapy in pregnancy

* Drugs should be completely avoided or atleast minimised during 1st trimester

* use of lowest effective dose

* combination of drug should be avoided.

* use of topical drugs are recommended as they do not undergo systemic absorption.

* when possible treat pregnancy condition with non-pharmacological methods instead of using drug therapy.

⑩ Explain role of community pharmacist in family planning? write about different methods of family planning

→ Family planning refers to practices that help couples to attain certain objectives

- * To avoid unwanted birth
- * To bring about wanted birth
- * To regulate interval b/w pregnancies
- * To determine no of children in the family

→ Role of community pharmacist

- * sex education
 - * Education for parenthood
 - * Advice on sterility
 - * proper spacing and limitation of birth
 - * Screening for pathological condition related to reproductive system
 - * genetic counselling
 - * premarital consultation and examination
 - * carrying out pregnancy test
 - * marriage counselling
 - * preparation of couples for arrival of first child
 - * provide service to unmarried mother
 - * providing adoption service
 - * Teaching home nutrition
- Contraceptive methods
- ① Behavioural method
- * Abstinence
 - * Coitus interruptus
 - * Safe period.

② Natural methods

* Basal body temp method

* Cervical mucus method

③ chemical methods

* Foam tablets

* Jelly / Concam / paste

④ mechanical methods.

* Condom

* Diaphragm

* Intrauterine devices

⑤ Hormonal contraceptives

⑥ post conceptional method.

Intrauterine devices

① Lipper Loop → S shaped polyethylene material

② Copper T → T shaped copper wrapped device

③ progestasert → T shaped device filled with progesterone which release 65 mg daily.

INFECTIOUS DISEASES



① TYPHOID ★

① causative organism .

Salmonella Typhi (g-bacteria) . & P Typhi

③ signs & symptoms

- * slow rise in temperature .
- * headache
- * abdominal pain .
- * splenomegally
- * weight loss
- * diarrhoea
- * constipation

③ Mode of Transmission

- * Faecal oral route
- * close contact with the patient
- * contaminated water & food .
- * Flies & cockroaches .

④ Diagnosis

- * Blood culture .
- * urine & stool culture
- * specific serologic test includes , WIDAL TEST .

⑤ prevention

- * wash hands frequently
- * drink hot water
- * Avoid eating raw vegetables
- * chase hot food

⑥ Treatment

- * Ciprofloxacin → 400mg through IV every 12 hrs .
- * Ceftriaxone → 2g through IV everyday .

② MALARIA

① causative organism.

plasmodium falciparum, vivax, oval, malariae (protozoal parasites)

② Signs & Symptoms

- * slow rise in temperature
- * headache
- * arthralgia.
- * hepatomegally
- * shivering.
- * vomiting

③ mode of Transmission

- * mosquito bites
- * mother to unborn child.
- * Blood transfusion.
- * By sharing needles.

④ Diagnosis.

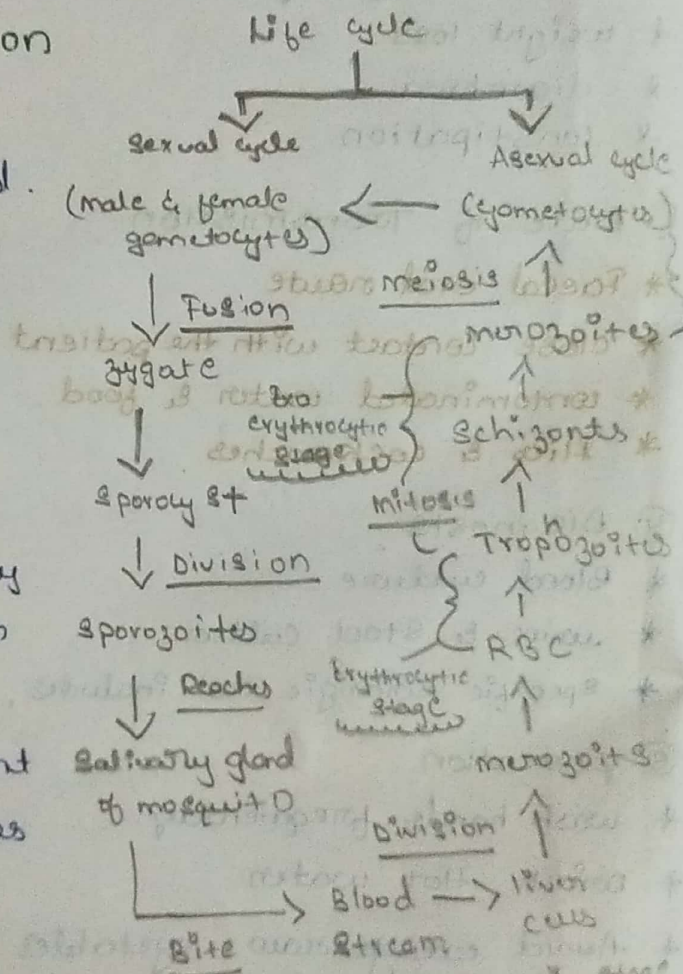
- * PCR Test.
- * Antigen detection
- * Fluorescent microscopy
- * malaria blood smear

⑤ prevention

- * use mosquito repellent
- * wear protective clothes
- * use bed nets

⑥ Treatment.

- * primaquine is ^{the} std medicine for malaria in the liver
- * chloroquine for malaria in blood.
- * some type of malaria are chloroquine resistant, so quinine is used.



② TUBERCULOSIS

① Causative organism.

Mycobacterium tuberculosis. (Narrow cut nor g-)

② Signs & Symptoms

- * Fever
- * Cough
- * Fatigue
- * weight loss.
- * Night Sweats

③ mode of Transmission

- * By Inhaling sneeze droplets from infected individual.

Genetogony

④ Diagnosis.

- * Mantoux test
- * Acid fast Bacilli test (AFBT)
- * Interferon gamma release assay (IGRA)

⑤ prevention

- * Try ^{to} cover mouth during sneezing.
- * use N-95 mask.
- * Take BCG vaccine.

⑥ Treatment.

- * Isoniazid
- * Rifampin
- * pyrazinamide
- * Ethambutol
- * Streptomycin.

④ SYPHILIS

① Causative organism

Treponema pallidum (γ-bacteria)

② Signs & Symptoms

- * painless ulcers
- * sores
- * itching
- * fatigue
- * swollen lymph nodes
- * weight loss

③ Mode of Transmission

- * Sexual contact
- * blood transfusion
- * mother to unborn child

④ Diagnosis

- * Dark field microscopy
- * Venereal disease research laboratory test (VDRL)
- * Direct fluorescent antibody (DFA)

⑤ Prevention

- * use condoms with water based lubricants
- * use dental dams for oral sex
- * just have sex with one partner
- * having regular STD checkups

⑥ Treatment

- * penicillin → 2.4 MU IM
- * If allergic to penicillin go for Tetracyclines - 100mg orally 4 times a day
- * Ceftriaxone → 1g orally 14 days

① GONORRHEA

① causative organism

Neisseria gonorrhoea (g-bacteria)

② Signs & Symptoms

- * Rectal discharge
- * Urethral Infection
- * Endocervical Infection
- * Pharyngeal Infection

③ Mode of Transmission

- * sexual contact with infected person
- * Infected blood transfusion
- * Materno-fetal transmission

④ Diagnosis

- * Gram stained smear
- * ELISA
- * DNA probe techniques
- * Nucleic Acid Amplification Technique (NAAT)

⑤ Prevention

- * use condoms with water based lubricants
- * use dental dams for oral sex
- * just have sex with one partner
- * having regular STD checkups

⑥ Treatment

- * Ceftriaxone - 125 mg IM once
- * Cefepime - 500 mg PO once
- * Cefixime - 400 mg PO once

⑥ CHOLERA

① Causative organism.

Vibrio cholerae (γ-bacteria)

② Signs & Symptoms.

- * Fever
- * Abdominal pain
- * Headache
- * Fatigue
- * Vomiting
- * Diarrhoea

③ Mode of Transmission

- * Faecal oral route
- * Contaminated water & food
- * From poorly cooked food

④ Diagnosis.

- * Stool culture
- * PCR technique
- * Dark field microscopy
- * Identification of *V. cholera* in stool

⑤ Prevention

- * Immunization by Sd cholera vaccine
- * Boiled water & cooked food should be taken
- * Good sanitation condition

* ⑥ Treatment

- * Ciprofloxacin → 500 mg 2 times / day
- * Norfloxacin → 400 mg 2 times / day
- * Tetracycline → 500 mg 2 times / day
- * Ampicillin or amoxicillin are generally for children

① AIDS

- ① causative organism
- Human Immunovirus

② Signs & Symptoms

- * Fever
- * Vomiting
- * Head ache
- * Diarrhoea
- * Sore throat
- * Lymphadenopathy
- * Weight loss
- * Night sweats
- * Nausea

③ Mode of Transmission

- * Sexual contact with infected person
- * Infected blood transfusion
- * Materno-faetal transmission

④ Diagnosis

- * ELISA
- * Western blot technique
- * Recommended DNA techniques
- * Viral Load
- * CD₄ count

⑤ Prevention

- * Use condoms with water based lubricants
- * Use dental dams for oral sex
- * Just have sex with one partner
- * Having regular STD checkups

⑥ Treatment

Regimen I

- * Zidovudine + Lamivudine + Nevirapine

Regimen II

- * Zidovudine + Lamivudine + Efavirenz

⑧ LEPROSY

① Causative organism

Mycobacterium leprae (G+ bacteria)

② Signs & Symptoms

- * Numbness
- * painless ulcers
- * Skin lesions
- * Eye damage
- * loss of digits

③ Mode of Transmission

- * Close contact with infected person
- * Spread through nasal secretion, droplets

④ Diagnosis

- * Nerve biopsy
- * Ziehl-Neelsen stain
- * Lepromin test
- * Liver Function test

⑤ Prevention

- * Avoid contact with droplets & nasal secretion
- * BCG vaccine along with M. leprae organism

⑥ Treatment

- * DAPSONE
- * Rifampin
- * Clofazimine

① HEPATITIS ★

① causative organism.

① 'Herpes virus'

Cytomegalovirus [CMV].

Epidemic Parvovirus [EBV].

② Hepatotrophic virus.

Hepatitis A virus [HAV].

Hepatitis B virus [HBV].

Hepatitis C virus [HCV].

Hepatitis delta virus [HDV].

Hepatitis E virus [HEV].

② Signs & Symptoms

* Fever

* Headache.

* abdominal pain

* anorexia.

* fatigue.

* Nausea

* vomiting.

③ Mode of Transmission

* fecal-oral route

* by blood transfusion.

* iv drug abuse.

* tattooing.

* ear piercing

* sharing of razors.

* Sexual transmission.

④ Diagnosis

- * elevated alkaline phosphatase, γ -glutamyl transferase
- * elevated bilirubin levels
- * Elevated AST, ALT
- * positive test for IgM anti-HAV
- * RIA
- * ELISA
- * liver biopsy

⑤ Prevention

- * Maintaining hygiene
- * Immunization through vaccines
- * By Avoiding Infection

⑥ Treatment

① Non pharmacological

- * proper Sanitation, healthy diet, Avoiding hepatotoxic drugs & Alcohol
- * Hepatotoxic drugs includes quinine, cimetidine, paracetamol

② pharmacological treatment

- * verapamil
- * Sulphonamides
- * vaccine such as HBV vaccine
- * Antitherpes agents Includes Idoxuridine, Acyclovir, valacyclovir

10. AMOEBIASIS

① Causative organism

- * *Entamoeba histolytica* (protozoan parasite)

② Signs and symptoms

(i) Intestinal amoebiasis.

- * abdominal discomfort.

- * abdominal cramps

- * flatulence

- * diarrhoea

(ii) Hepatic amoebiasis

- * Fever

- * weight loss

- * Hepatomegaly

- * Jaundice

(iii) cerebral amoebiasis

- * Nausea.

- * vomiting

- * headache

③ mode of Transmission

- * contaminated soil or water

- * Faecal-oral route

- * Anal Sexual practise

④ Diagnosis

- * Stool test

- * Antibody tests

- * chest radiography

- * Liver function tests.

⑤ prevention.

- * wash hands thoroughly with soap and hot running water for at least 10 sec
- * wash your hands after using the toilet or changing baby's diaper and before handling food
- * clean bathroom and toilets often, pay particular attention to toilet seats and taps
- * Avoid sharing towels or face washers
- * Avoid raw vegetables in endemic area, as they are fertilized using human feces
- * Boil water or treat with Iodine tablets
- * Avoid eating street foods especially in public places
- * good Sanitary practice
- * Filtration of water supply

⑥ Treatment

- * metronidazole
- * Tinidazole
- * Nitroimidazole
- * Chloroquine.

2 mark important concepts



① Counselling tips for haematinics

- * Iron is best absorbed on an empty stomach.
- * Avoid taking antacids and dairy products
- * Take tablets with full glass of water
- * Swallow extended-release capsule whole, do not crush or chew tablets.

② Define patient counselling

- * It is the process of providing information, advice and assistance to help patients to use their medication appropriately
- * Information involves life style changes, patients illness.

③ Counselling tips for multivitamins

- * Vit K and Vit E negatively impact anticoagulant therapy.
- * Antioxidants such as vit C and E reduces effectiveness of certain cancer chemotherapies
- * Antiepileptic medications can increase vitamin D's metabolism.
- * cholestyramines interfere with its metabolism.

④ objectives of patient counselling?

- * Patient should recognize the importance of medication
- * Foundation for continuous interaction and consultation should be established
- * patient's understanding about side effects and interactions should be improved.
- * should ensure better patient compliance.

⑤ Counselling tips for antacids.

- * Do not use with aspirin
- * Do not use with anti-inflammatory medicine
- * Do not use this medicine for any other purpose other than specified on the pack.
- * Consult a doctor if symptom persists
- * Consult a doctor if symptom recurs
- * Consult a doctor if new additional symptom occur.

⑥ Counselling tips for Aspirin in pregnancy

- * Do not use this product during first 6 months of pregnancy, except on doctor's advice
- * Do not use at all during last 3 months of pregnancy

⑦ Counselling tips for sedatives

- * This medicine may cause drowsiness
- * Be cautious about driving a vehicle or operating machinery within 8 hrs of taking this medicine

⑧ Explain about communication skill

- * The counselling process include verbal and nonverbal communication skill

verbal communication skills are

→ language

→ tone

→ volume

→ speed

non verbal communication skills are

→ proximity

→ Facial Expression

⑨ Drugs used in opthalmic disorders

- * α -agonist $\rightarrow$ epinephrine
- * miotic agent $\rightarrow$ pilocarpine
- * α_2 -adrenergic agonist $\rightarrow$ brimonidine
- * prostaglandin analogues $\rightarrow$ latanoprost

⑩ Drugs used in worm infections

- * Albendazole
- * mebendazole
- * Levamisole
- * Pyrantel

⑪ Code of ethics definition.

- * "principles, obligations, values, standards that guide a pharmacist to follow procedures, to take decisions for the welfare of stakeholders"

⑫ Code of ethics, listed out

- * Drugs and other ingredients should be purchased from reputed source
- * pharmacists should not attempt to capture business of fellow competitors by offering discounts.
- * After receiving the prescription, pharmacists should not show any such emotions on his face
- * In every pharmacy there should be qualified, Registered, and competent personnel.

⑬ write a note on Rational use of drugs.

* Rational drug use means "prescribing right drug in adequate dose for the sufficient duration based on needs of the patient at low cost"

Factors responsible are

- * Development of resistance
- * Drug overabundance in market
- * Increased cost of treatment
- * Adverse effect of irrational drug use

Role of pharmacists

- * Adoption of pharmaceutical care approach
- * Maintaining patient medication profile
- * Analysing clinical data.

⑭ Define community pharmacy

* Community pharmacy is a legally established premises where registered pharmacists are involved in dispensing medicinal products with the aim of promoting individuals health.

⑮ Rules & Responsibilities ^{& scope} of community pharmacist

- * Establishment of professional pharmacy
- * Dispensing of medication.
- * patient counselling
- * Health screening services
- * Home Care services
- * Drug Information service

16 Define prescription

* prescription is an order written by a registered medical practitioner to a pharmacist to compound and dispense a specific medication for the patient.

17 comment on Drug Interaction

* Drug Interaction is defined as "modification in the pharmacological activity of one drug by another drug"

Types

- i) Drug-Drug Interaction,
- ii) Drug-food Interaction,
- iii) Drug-Smoke Interaction
- iv) Drug-alcohol Interaction,
- v) Drug-Disease Interaction.

18 Enumerate about medication related problems

- * Drug Interaction. * untreated condition.
- * Adverse drug reaction.
- * Improper drug selection
- * Dose too low.
- * Dose too high.
- * Drug use without Indication.

19 Source of Drug Interaction checkers.

- * Micromedex
- * Lexicomp
- * Facts & Comparisons
- * Stockley's Drug Interaction.

20 Examples of Drug-Drug Interaction.

- (i) Aspirin + anticoagulants $\rightarrow$ haemorrhage
- (ii) Warfarin + NSAIDs $\rightarrow$ GI bleeding
- (iii) Ciprofloxacin + Theophylline $\rightarrow$ Theophylline Toxicity

21 Examples of Drug-Food Interaction

- (i) Tetracycline + milk $\rightarrow$ Tetracycline gets inactivated by Ca^{2+} ions in milk.

(ii) Aspirin + Milk $\rightarrow$ Stomach upset.

(iii) Acetaminophen + Alcohol $\rightarrow$ Liver damage.

22 parts of prescription.

- | | |
|-------------|-----------------------------|
| (i) Date | (vi) Superscription |
| (ii) Name | (vii) Inscription |
| (iii) Age | (viii) Subscription |
| (iv) Sex | (ix) Signature. |
| (v) Address | (x) Signature of prescriber |

23 Define medication adherence

* It is defined as "Extent to which patient take their medicines in accordance with the prescription"

* Any deviation in recommended schedule is described as non-adherence.

24) Two medication adherence scales.

- * pill box.
- * Medication planner
- * patient Interview
- * Review of Treatment outcome

25) Role of pharmacists in Improving medication adherence

- * Establishing Strong patient-pharmacist relationship
- * Encouraging family support to patients
- * conducting patient education & patient counselling
- * providing oral, written & pictorial instructions.
- * Short prescription.

26) Factors affecting medication adherence

- * predisposing factors
- * Enabling factors
- * Reinforcing factors.

27) Define OTC medication.

* OTC drugs are medicine that are legally allowed to be sold 'over the counter' by a community pharmacist without formal prescription from RMP but after assessing need of OTC drug.

28) Give Ex for OTC medication.

- | | |
|--------------------------------------|--------|
| i) acetylsalicylic acid
(Aspirin) | 300mg. |
| ii) Ibuprofen | 600 mg |
| iii) acetaminophen | 450 mg |
| iv) Liquid paraffin | 15 ml |

29. when OTC medications are dispensed

- * while treating minor ailments

30. write about concealing for OTC

- * OTC drugs change the effect of prescription drugs
- * OTC drugs mask the symptom of disease
- * OTC drugs can lead to overdose
- * If misused it can be harmful

31. Role of pharmacists in OTC medication

- * He should initially recommend non-pharmacological treatment

- * He should counsel regarding its use

- * He should apply his knowledge for selection of right OTC medication

- * He should take special precaution for children, elderly, pregnant or breastfeeding mothers

32. Diaphragm & condom

Diaphragm

- * A shallow, dome shaped silicone barrier fits inside vagina over the cervix

- * It covers the cervix and keeps sperm out of uterus

Condom

- Male condom → A thin rubber barrier fits over erect penis that prevent entry of sperm into women's vagina

- Female condom → A thin polyurethane barrier inserted into vagina

- * It prevents sperm entering the women's body

23. Abstinence

- * Both the partners decide not to have sex
- * Abstinence is 100% effective. But in reality it does fail
- * Abstinence can protect from HIV & other sexual infections.

34. Vasectomy

- * It is a permanent contraception where, vas deference of male reproductive system is cut and tied to stop sperm getting to the penis
- * Rare possibility of long term scrotal pain

35. Pellagra

- * It is a disease caused by low level of niacin also known as vit B3
- * It is marked by dementia, diarrhea and ^{dermatitis} ~~diarrhea~~, also known as "the three D's"
- * If left untreated, pellagra can be fatal.

36. Scurvy

- * It is caused by lack of vit C or ascorbic acid.
- * Deficiency leads to weakness, anemia, gum disease, skin problems
- * Vitamin C is needed for making collagen, an important component in connective tissue.

37. Tubectomy

- * It is a permanent contraception where fallopian tube in women are blocked or removed to prevent movement of egg from ovary to uterus
- * May experience short term pain & bruising

38. Beri-Beri

- * Beri-Beri is a disease caused by Vit-B1 deficiency also known as thiamine deficiency
- * wet beriberi affects the heart & circulatory system
- * dry beriberi damages the nerves
- * Symptoms include rapid heart rate, paralysis.

39. Marasmus

- * marasmus is a form of severe malnutrition usually occurs in children
- * Symptoms include underweight, dry skin, brittle hair.
- * Nutrition deficiency is the main cause of marasmus

40. Kwashiorkor

- * Kwashiorkor is a form of malnutrition caused by lack of protein in diet.
- * Symptoms include underweight, loss of muscle mass, diarrhoea, fatigue.