

DT 4th

Course Title: General Pharmacology II

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Note:

Attempt all questions

Each question carry equal marks

Pay attention to every point of question

Give to the point answers

Extra detail may leads to marks deduction

Q1.

(a) Differentiate between type I and type II diabetes mellitus

Ans :

Type I	Type II
Occurs in childhood	Mainly in elderly
Not obese	Overweight/obese
No immediate family history	Usually family history
Short duration of symptoms	Symptoms may present longer time
Insulin required	Insulin not necessarily required
Immunological attack against beta cell in liver	Body resistance to insulin

(b) As per your opinion which of the insulin delivery device is more effective and why?

Ans : **Continues Subcutaneous Insulin Infusion Device** is more effective because it has an automatic and manual sitting in which the insulin is induced to body according to needs, so the hypoglycemia and hyperglycemia conditions are not occurs.

- ★ Also avoid multiple daily injections.
- ★ And not irritate the patient.

Q2.

(a) Explain the role of vitamin K in blood clotting and treatment of bleeding disorders

Ans : **Role of vitamin k in clotting of blood :**

Vitamin k has an important role in clot formation , the formation of clotting factors (II,VII,IX and X)are dependent on vitamin k without vitamin k they are not produced .

- ★ Also its own formation is dependent on vitamin k epoxide reductase.
- ★ In short blood clotting is not occurs without vitamin k.

Treatment of bleeding disorder :

Treatment involves administration of vitamin k, preformed clotting factors and antiplasmin drugs.

Role of vitamin k in bleeding disorder;

Vitamin k involves in formation of different coagulation factors which is responsible for blood clot formation.

(b) What does thrombolytic agents mean? Explain with example

Ans : These are substances that splits or break the clot(thrombus).

- ★ They dissolve a clot (thrombus) and reopen an artery or vein.
- ★ Thrombolytic agents may be used to treat a heart attack, stroke, deep vein thrombosis , pulmonary embolism, and occlusion of a peripheral artery or indwelling catheter.

All thrombolytic agents are serine proteases (they digest protein) and convert plasminogen to plasmin which breaks down the fibrinogen and fibrin and dissolves the clot.

Q3.

(a) Explain the effects and adverse effects of organic nitrates in angina pectoris.

Ans : **Organic nitrates has two effects at therapeutic dose :**

1. Dilation of the large veins resulting in pooling of blood in the veins which diminish the preload and reduce the work of heart.

2. Dilates the coronary vasculature providing increased blood supply to the heart muscle.

- ★ Preload decrease
- ★ After load decrease
- ★ Relieving vasospasm

★ Redistribution of blood flow

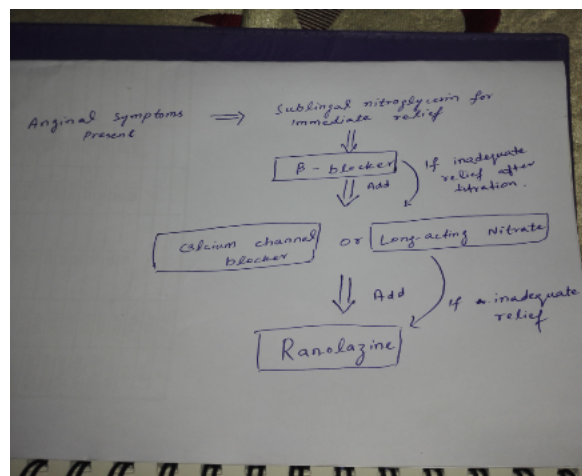
Adverse effects of Nitrates :

Nitrates can cause headache in about 30% to 60% of patients because of the pronounced vasodilation.

High dose can cause posture hypotension, flushing and tachycardia.

(b) Write down the treatment algorithm for improving symptoms of stable angina.

Ans :



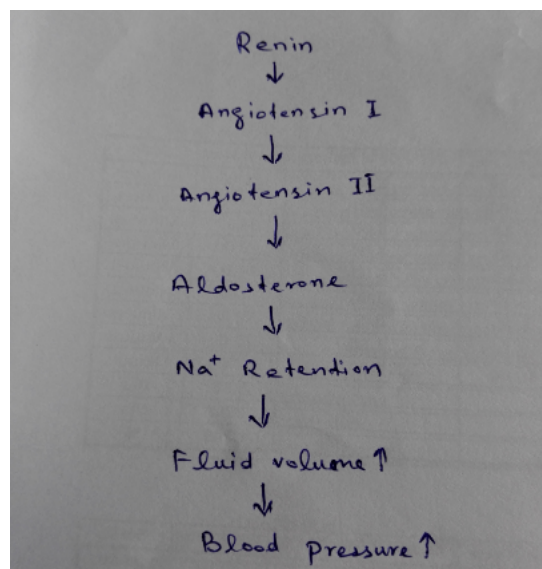
Q4.

(a) Differentiate between primary and secondary hypertension

Ans : In primary hypertension the origin is unknown while in the secondary hypertension the origin is known means the hypertension is caused by any other disease such as obesity etc.

(b) Explain the effect of renin on hypertension

Ans :



The net effect of Renin on hypertension is to increase blood pressure.

Renin increases hypertension in this way ;

Renin converts angiotensin I into angiotensin II, in turn angiotensin II helps in the releasing of aldosterone, so aldosterone starts sodium retention means reabsorption of water which results in increasing of fluid volume so when fluid volume increases blood pressure also increases.

C) What is the importance of pharmacological treatment of hypertension

Ans:

Pharmacological importance of hypertension

- ★ It is well known that high blood pressure increases the risk of heart attacks and strokes.
- ★ Also hypertension leads to so many diseases and lastly causes death of the patient.
- ★ Some drugs are very sensitive to blood pressure means that some drugs that increase the blood pressure and the patient has already hypertension so it can cause stroke or death.

Q5.

(a) Differentiate between right heart failure and left heart failure

Ans :

Right Heart Failure	Left Heart Failure
R. Atrium & right ventricle unable to pump proper amount of blood	Left atrium & left ventricle unable to pump proper amount of blood
Accumulation occurs in the peripheral tissues	Accumulation occurs in the lungs
Depend on site of accumulation such as ankle edema, or organ congestion	Called pulmonary edema.

(b) Summarize the pharmacotherapy of heart failure

Ans : The pharmacotherapy of heart failure is the treatment in which the activity of the heart becomes normal.

There are two main strategies for heart failure :

A. Increasing myocardial contraction

Increasing of myocardial contraction leads to increase the output of blood from the heart . This effects of heart is called positive inotropic effect.

Drugs that increase myocardial contraction :

1. Cardiac glycosides
2. Phosphodiesterase
3. Dopamine and Dobutamine

B. Decrease Cardiac work load

By decreasing the cardiac work load results in normalizing of hypertension and reduce the chance of myocardial turn over.

We use that type of drugs which increase the volume of blood vessels and decrease the activity of renin or aldosterone.

Drugs that decrease the cardiac work load +

1. Drugs effects the renin angiotensin system
2. Beta blockers
3. Diuretics
4. Vasodilator

