

METABOLIC SYNDROME

By:-

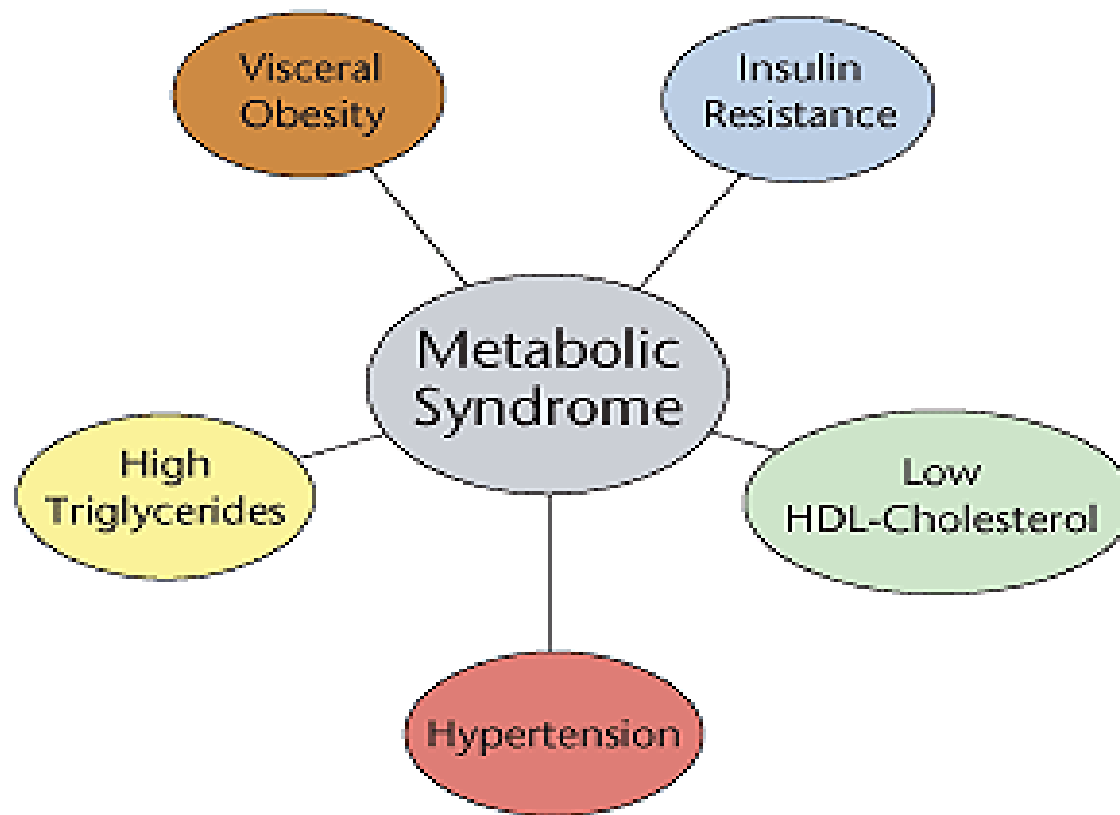
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INTRODUCTION:-

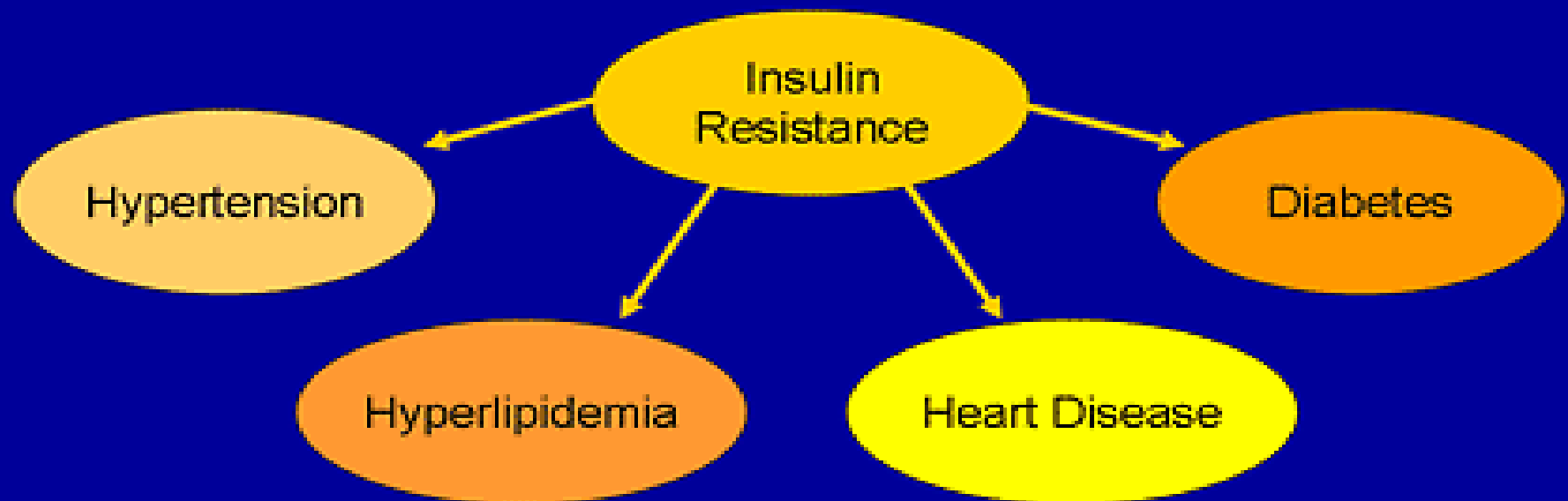
Metabolic syndrome is the name for a group of risk factors that raises the risk for heart disease and other health problems, such as diabetes and stroke.



ETIOLOGY:-

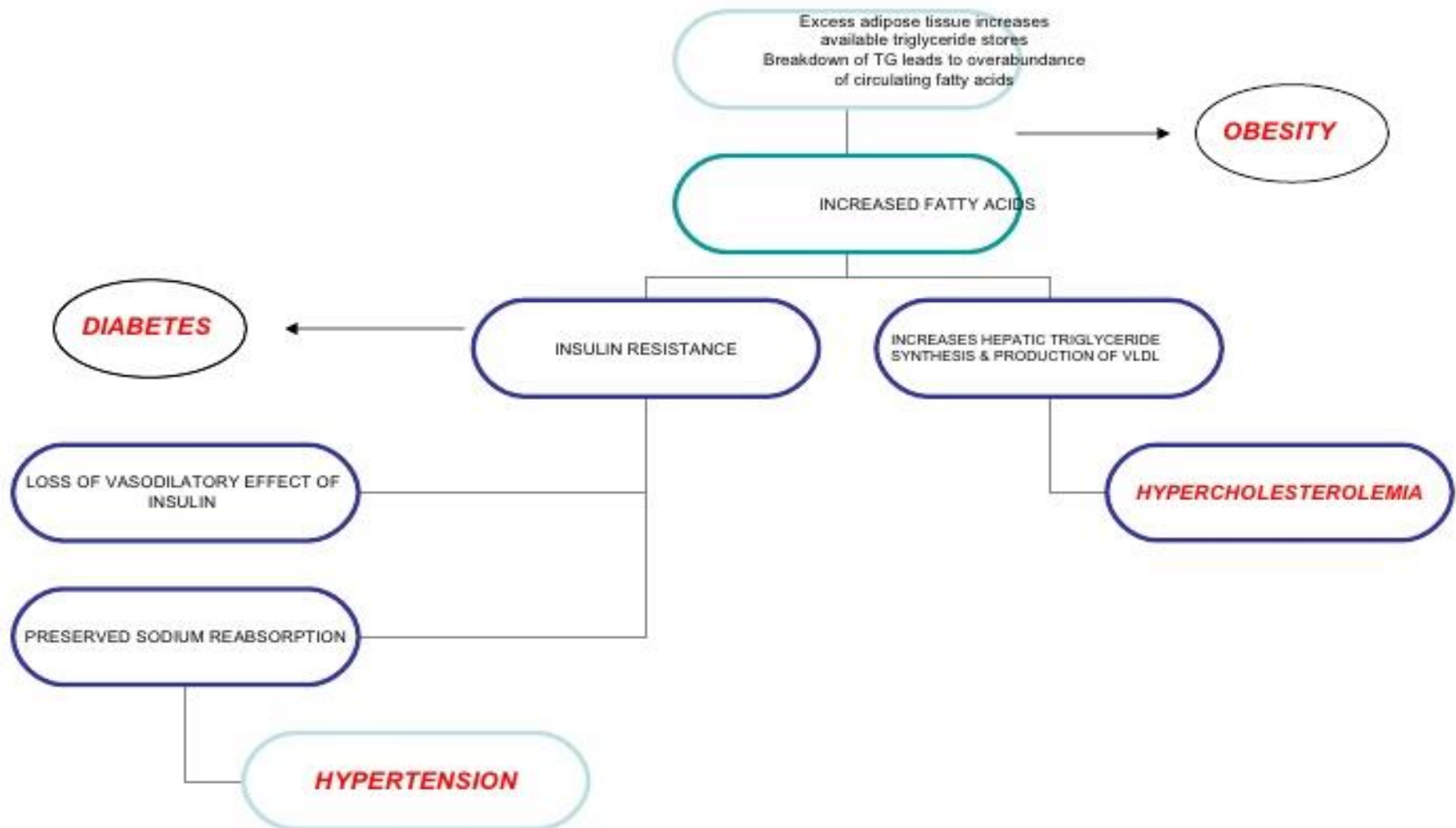
What Causes the Metabolic Syndrome?

It had been proposed that insulin resistance might not only be a **part** of the syndrome but might actually be the **cause** of the entire syndrome.



PATHOPHYSIOLOGY:-

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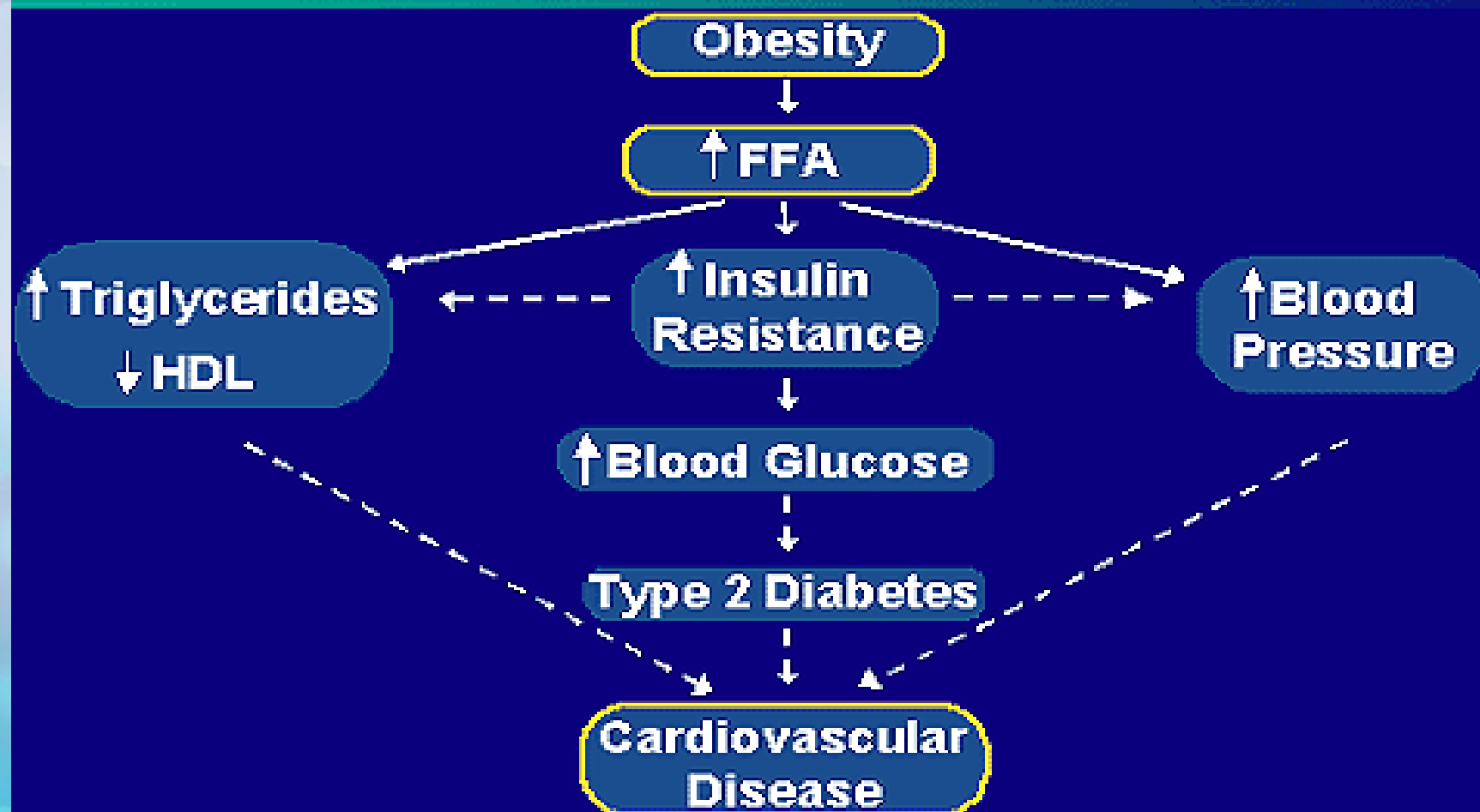


Obesity is the major factor causing Obesity

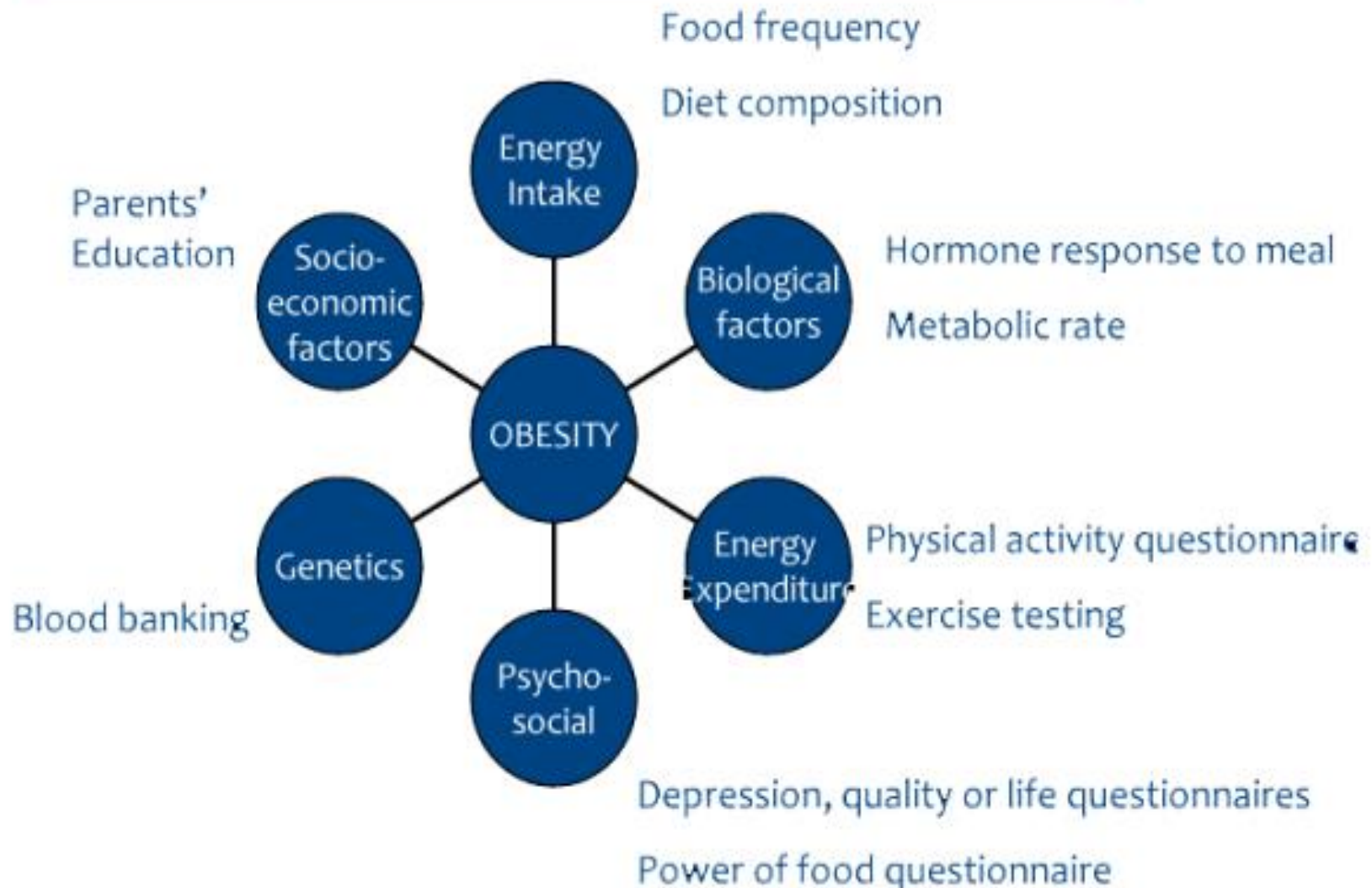
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Metabolic Syndrome: The Role of Obesity

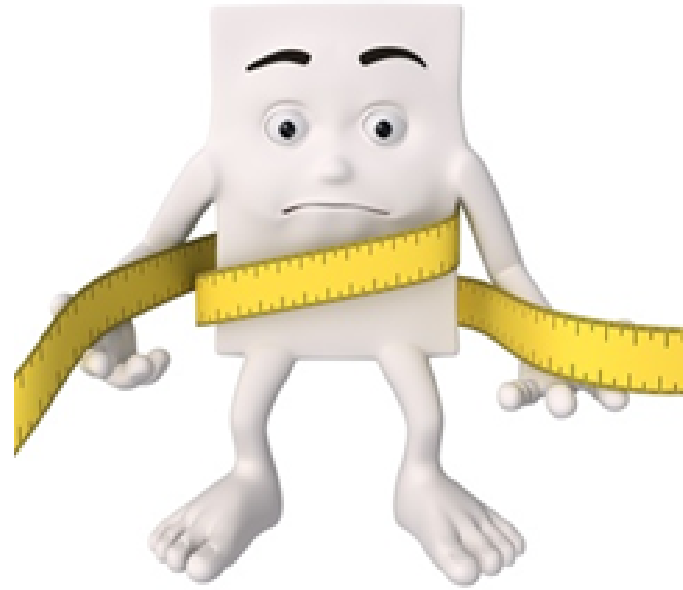


Factors contributing to obesity



Risk Factors of Metabolic Syndrome and Type 2 Diabetes:

1. Obesity with waistlines over 40 inches for males and over 35 inches for females
2. High or low blood sugar
3. Elevated BMI (body mass index) greater than 30
4. Elevated triglycerides
5. Low levels of “good” cholesterol – HDL
6. High blood pressure/hypertension



Metabolic Syndrome: Cluster of Metabolic Risk Factors

Definition

- Atherogenic dyslipidemia (\uparrow TG, \uparrow apo B, \downarrow HDL)
- Elevated BP
- Elevated glucose
- Prothrombotic state
- Proinflammatory state

Diagnosis (3 of 5)

- Waist circumference (≥ 102 cm, M; ≥ 85 cm, F)
- TG ≥ 150 mg/dL
- HDL-C < 40 mg/dL, M
 < 50 mg/dL, F
- BP ≥ 130 /or ≥ 85 mm Hg
- Glucose ≥ 100 mg/dL

- ❖ There is no singular therapy for treating metabolic syndrome.
- ❖ Therapy is given according to patient's condition and compatibility.

For *HYPERTENSION*:-

High blood pressure medicines like

- ACE inhibitors (Captopril and enalapril)
- Angiotensin 2 receptor blockers (Losartan and Valsartan)
- Diuretics (Thiazides, Furosemide)
- Beta blockers (Atenolol, Propranolol) are widely used.

***CHOLESTEROL Medicines*:-**

❖ Statins

(Rosuvastatin, Fluvastatin, Atorvastatin, Lovastatin, Pravastatin and Simvastatin)

Cotd....

- ❖ **Niacin**(Niacor,Niaspan and Nicolar)
- ❖ **Bile Acid resins**(Colestyramine ang Cholestipol)
- ❖ **Diabetes medicines**:-include Glucophage, Pioglitazone and Avandia.
- ❖ Low dose aspirin may reduce the risks of heart attacks and stroke.
- ❖ Healthy diet
- ❖ Exercise

CASE PRESENTATION



Subjective data:-

- ❖ A 32 year old obese(89kgs) female patient presented with complaints of fever,chills,rigour and nausea since 5days
- ❖ She has a h/o *HYPERTENSION* since 3years and is on **Tab.Amlkind-5mg**, *DIABETES MELLITUS*(type 2) since a year on **Tab.Glycomet-500mg**.
- ❖ Patient is a chronic alcoholic since 5years.

Objective Data:-

❖ When the physician examined the patient:-

Temperature:-102°F

B.P:-130/80 mmHg

Pulse Rate:-68bpm

The patient was ordered to undergo:-

➤ Complete blood picture

Peripheral smear showed the evidence of Thrombocytopenia.

➤ Blood sugar levels showed:-

Glucometer measured blood sugar levels were:-

➤ RBS(Random blood sugar level):-**246mg/dl**

➤ FBS(Fasting blood sugar level):-**203mg/dl**

Contd...

Complete Urine Examination:-It revealed

colour:-Yellow

Appearance:-**Hazy**

Albumin:- **++**

Lipid Profile(DAY 3)

Total Cholestrol :-241

HDL:-**38(↓)mg/dl**

LDL:-137mg/dl

VLDL:-**66mg/dl**

TG:-**333mg/dl**

ESR:-**62mm/hr**

Clinical Biochemistry:-

HbA1C:-13.5%

Cotd.....

Day wise Assessment:-

Day 1

- Patient was conscious.
- B.P:-130/80 mmHg
- Pulse Rate:-66bpm

Complaints & Observation:-

- ❖ Slurring of speech
- ❖ Weakness,dizziness.
- ❖ GRBS:-588mg/dl

MEDICATIONs:-

Tab.Dolo(650mg),BD

Tab.Pan(40mg),OD

Inj.Optineuron with 100ml Ns

Inj.H.mixtard

Tab.Caripill,TID

Tab.Dolo-650mg,OD

❖ It is an anti-pyretic drug

Possible ADR`s:-

Thrombocytopenia, leucopenia, pancytopenia, neutropenia.

Inj.Optineuron:-

It is a complex of VitB+Vit C

It is the source of vitamins to the body.

Tab.Pan-40mg,OD

Inhibits gastric acid secretion.

❖ Possible ADR`s:-

Headache, dizziness, nausea, vomiting, abdominal pain



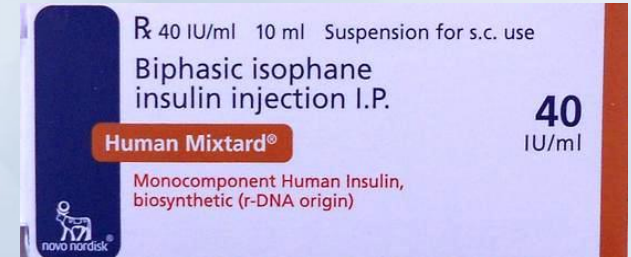
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Inj.H.Mixtard:-

❖ Insulin lowers blood glucose levels.

Possible ADR`s:-

Hypoglycaemia, insulin resistance



IV FLUIDS-(normal saline):-

It is important in electrolyte and fluid balance.

Contd....

Day 2:-

- ❖ Patient was conscious and weak.
- ❖ B.P:-130/80 mmHg
- ❖ Temperature:-Normal

Complaints:-

- Tremors

Medication:-

- Inj.H.Actrapid
- Inj.Neurobin-1 amp,OD
- Inj.Taxim-1 gm,BD
- Inj.Pan-40mg,OD
- Tab.Dolo-650mg,sos
- Tab.Amlokind-5mg,OD
- Tab.Caripill,TID

Inj.H.Actrapid(Insulin):-

- ❖ Insulin lowers blood glucose levels.
- ❖ Possible ADR`s:-

Hypoglycaemia, insulin resistance.



Inj.Neurobin(Mecobalamin):-

- ❖ Mecobalamin is the neurologically active form of vitamin B12 and occurs as a water-soluble vitamin in the body.

Possible ADRs:-

- ❖ Anorexia, nausea, vomiting and diarrhoea.



Contd....

Inj. Taxim:-

❖ Cefotaxime is an Antibiotic

❖ Possible ADR`s:-

Hypersensitivity reactions, rash, pruritus; diarrhoea, nausea, vomiting.

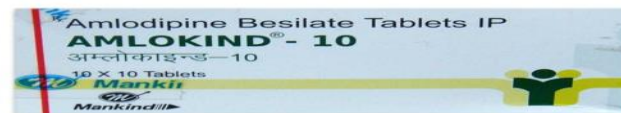


Tab. Amlokind:-

Amlodipine relaxes peripheral and coronary vascular smooth muscle

Possible ADR`s:-

❖ headache, ankle swelling, oedema



Contd....

Day 3:-

- ❖ No fresh complaints.
- ❖ B.P:-130/80mmHg

Medication:-

- ❖ Inj.Neurobin-1 amp,OD
- ❖ Inj.Taxim-1 gm,BD
- ❖ Inj.Pan-40mg,OD
- ❖ Tab.Amlokind-5mg,OD
- ❖ Inj.H.Actrapid
- ❖ Tab.Rosuvastatin 1tab,BD

Day 4

No fresh complaints.

Medication:-

- ❖ Tab.Amlkind-5mg,OD
- ❖ Tab.Rosuvastatin-100mg,OD
- ❖ Tab.Glycomet-TID
- ❖ Tab.Pan-40mg,OD
- ❖ Tab.Neurobin-100mg,BD
- ❖ Inj.H.Mixtard
- ❖ Tab.Caripill,TID

Day 5:-

Complete blood picture was done.

Thrombocytopenia was identified.

Glucometer measured GRBS-194mg/ml

Medication:-

- ❖ Tab.Caripill-TID
- ❖ Tab.Amlokind-5mg,OD
- ❖ Tab.Rosuvastatin-100mg,OD
- ❖ Tab.Glycomet-TID
- ❖ Tab.Pan-40mg,OD
- ❖ Tab.Neurobin-100mg,BD
- ❖ Inj.H.Mixtard

Day 6:-

- ❖ Complete blood picture was done.
- ❖ Thrombocytopenia was found to be recovered.
- ❖ Glucometer measured GRBS value was 161mg/dl

Observation:-

- ❖ Platelet count was stabilised.
- ❖ Blood sugar levels were stabilised too.

Day of Discharge:-

Observation:-

Patient`s platelet count and blood glucose levels were stabilised.

Patient was feeling better.

Medication:-

Inj.H.Mixtard-12U s/c

Tab.Glycomet-500mg,TID

Tab.Amlokind-5mg,OD

Tab.Rosuvas-1tab,OD

Tab.Neurokind-10mg,BD

Tab.Pan-40mg,OD

ROLE OF PAHARMACIST:-

- ❖ Patient was monitored regularly and all the data related to case was noted.
- ❖ Patient Counselling was done.
- ❖ She was given instructions:-
 - Related to diet
 - Physical activity
 - Frequency of drugs
 - Do not miss the dose,if missed do not double it the next tyme.
 - Consult the physician if necessary.

The background is a vibrant blue gradient, overlaid with intricate floral and botanical illustrations. These include various styles of flowers, some with detailed outlines and others as soft, glowing patterns. Delicate, swirling lines and a butterfly with dark wings and light spots are also visible, adding a sense of movement and elegance to the design.

THANK YOU😊