Question: 1 **(10 marks)**

How to diagnose (clinical picture and investigations) a case of nephrotic syndrome in children.

Answer (1) :

- It is a clinical condition which is characterized by a tetra of : **(5 marks)**

  1- Proteinuria.

  2- Hypoproteinemia.

  3- Edema.

  4- Hyperlipidemia (Hypercholesterolemia).

Clinical Picture of MLNS:

- Insidious onset of "Edema" which is progressive over weeks. It starts as puffy eye lids which is more marked in the morning, then becomes generalized with scrotal edema, ascites ± pleural and pericardial effusions.

- Liability to 2ry infection: Peritonitis (penumococcal), Septicemia (due to ↓ IgG and the use of steroids in TTT).

- There may be recurrent episodes.

Investigations: (5 marks)

A) Urine : - Heavy proteinuria : more than 2 gm/M^2/day.

- Casts : Hyaline casts + granular & cellular casts.

- No RBCs or RBC casts. If present - $\rightarrow$2ry nephritic syndrome

B) Blood : - Hypo-albuminemia.

- Hypercholesterolemia $\rightarrow$ N = 150 – 250 mg/dL.

- BUN and serum creatinine $\rightarrow$ Normal.

C) Renal biopsy: is indicated in cases of failure of 1 month steroid therapy, especially in presence of hematuria, hypertension, and in patients < 1 year or > 10 years old.

Question: 2 **(10 marks)**

Identify essential (4 marks) and variable features (3 marks) of kwashiorkor and its complications (3 marks).

Answer (2) :

KWSHIORKOR

Causes :

Unbalanced diet, with minimal protein, and high CHO intake will result in kwashiorkor. This is common to occur at the time of weaning.

Essential Features: These features are present in all cases & essential for diagnosis.

1- Growth retardation Early, there is slow rate of growth when measured on growth curves (flat curve). The weight is affected more than height..
2- Edema. It is characterized by being pitting, affects dorsum of feet and hands, then spreads centrally to involve legs, arms, face and abdominal wall. It never causes ascites or effusion.
3- Mental changes These are represented by lethargy, apathy, and misery.
4- Diminished muscle / fat ratio.

Variable features: Some of these features may be present or not.

1- Dermatosis (Skin changes).
2- Hair changes.
3- Hepatomegaly.
4- GIT troubles.
5- Vitamins and minerals deficiency.
6- Anemia
7- Infections.

Treatment of Kwashiorkor

a) Prevention:

Dermatosis (Skin manifestations):

Skin usually shows erythema and hyper – pigmentation, followed by desquamation, hypopigmentation, and ulceration.

Causes:

- Deficiency of essential fatty acids.
- Deficiency of nicotinamide and tryptophan.
- Deficiency of Vit –A.
- Disturbance of suprarenal function and corticosteroid metabolism.

Hair changes:

- The hair looses its luster, becomes easily pickable and sparse.

- The color changes into dark brown, light brown, red, yellow, or even white. Flag sign: The distal areas of hair are darker in color than the proximal areas giving the hair the flag appearance.

Hepatomegaly : due to fat infiltration

Anemia due to iron and vitamin deficiency

Vit. and mineral Deficiency: Vitamin A,D,C,K.... Zinc & magnesium .....

Complications: **(3 marks)**

1- Inter-current infections

2-gastroentritis lead to- : Shock, Dehydration & electrolyte disturbances.

3-- Hypothermia.

4- Hypoglycemia.

5- Hemorrhagic tendency

6- Heart failure due to anemia and infection

Q3 answer (10 Marks)

Compare in table between physiological and pathological Jaundice in newborn

Physiological jaundice	Pathological jaundice
Characters :- 1- it appears on the second or 3rd day of life. 2-it persist for one wk in FT and 2 wks in PT 3-Total serum biIirubin not exceed 12 mg/dl in FT and15mg/dl in PT 4-rate of daily rise is not exceed 5mgldl 5-direct serum bilirubin is not more than2mg/dl 6-good general conditionothe baby **Causes** -decrease glucuronyl transferase E activity -short life span of RBC -increase entrohepatic circulation **Treatment** No treatment (self limited)	**Characters :-** 1- it appears at anytime even the1st day 2-persist for more than >1wk in FT and more than >2wk in PT 3- Total serum bilirubil>13mg/dl in FT&>15 mg/dl inPT 4-rate af daily rise >5 mg /dl or0.5mg /dl/h 5-direct hyperbilirubinemia is always pathologic 6-associiated problems e.g anaemia& signs of sepsis ,organomegly& kernicterus . **CAUSES** Maybe due to --Over production of bilirubin Decrease rate of conjugation -Defect in excretion **TREATMENT** Need treatment according to its severty, phototherapy or exchange transefusion + others according to the cause

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Q.(4) (10 Marks)

Define the cause , criteria of rheumatic fever and how to diagnose it

The cause :-

immunologic disease affecting connective tissue of the heart , joints and skin
following group A ,B- hemolytic strept. Pharyngitis
Genetic predispositiol (associated with HLA)

Criteria of rheumatic fever (jones criteria)

Major criteria

1- Carditis
2- Polyarthritis
3-Sydenhem chorea
4-Erythema marginatum
5-Subcutaneous nodules

Minor criteria

*Previous rheumatic fever or rheumatic heart disease.
*Fever
*Artheralgia
*Prolonged P R interval
*Acute phase reaction (elevated ESR ,CRP ,leucocytosis)

Plus

Evidence of preceding streptococcal infection,that is increased ASOT or other streptococcal antibodies , positive throat culture for groub A Straptococus

How to diagnose

Two major criteria or
One major + two minor criteria plus
Supporting evidence of streptococcal infection

Q5:DD of wheezy chest in 5 years old child

Causes:(6 marks)

- Respiratory tract infections.
- Transient wheezing in infancy.
- Asthma.
- Bronchiolitis.
- Croup.
- Cigarette smoke or other forms of air pollution.
- Gastro-oesophageal reflux.
- Foreign body inhalation.
- Rare causes include tracheo-oesophageal fistula, following bronchopulmonary dysplasia, bronchiectasis, heart failure, congenital heart disease, cystic fibrosis, immunodeficiency, extrinsic compression of airways (eg tumours, vascular rings), tracheobronchomalacia and ciliary dyskinesia.

Presentation and management(2 mark)

Always consider the presence of any red flags indicating the need for urgent assessment and treatment, eg poor feeding, cyanosis, respiratory distress, drowsiness or poor response to treatment.

There are two main forms of presentation depending upon onset and age:

  - Acute onset of wheezing in an infant.
  - Recurrent or persistent wheeze.
- Wheezing starting perinatally suggests structural abnormalities.
- Clubbing occurs in chronic lung infection, congenital heart disease and, rarely, in uncomplicated asthma.
- Allergic rhinitis, urticaria and eczema suggest asthma (or an allergic reaction in a child with eczema).
- Nasal polyps are found in allergic conditions or cystic fibrosis.

Investigation of possible causes(2 mark)

- CXR: can demonstrate the presence of a foreign body, structural anomalies, an enlarged heart, masses, and pulmonary infiltrates.
- Sweat chloride test for cystic fibrosis.
- Allergy testing.

- Barium swallow for tracheo-oesophageal fistula and other anomalies.
- Spirometry in children aged over 6 years.

Further investigations may be needed for rarer causes, eg echocardiogram, MRI/CT scan of the chest.

Q 10

Dehydration is defined as an excessive loss of body fluid.

Three main types of dehydration based on type of fluid loss

1. Hypotonic or hyponatremic (4marks)

   primarily a loss of electrolytes, particularly sodium more than water, serum Na less than 150 mEq/L .It accounts for 10:15% of dehydration types it chch decreased plasma osmolality manifested clinically by (moist tongue ,lethargy due to brain edema and marked loss of skin elasticity)

2. 2-Hypertonic or hypernatremic : (4marks)

   primarily a loss of water serum Na more than 150 mEq/L .It accounts for 10:15% of dehydration types it chch by increased plasma osmolality manifested clinically by (woody tongue ,irritability due to dehydrated brain and more or less normal skin elasticity)

3. 3-Isotonic or isonatremic : (2marks)

   Equal loss of water and electrolytes serum Na 130:150 mEq/L .It accounts for 75% of dehydration types it chch by normal plasma osmolality manifested clinically by (dry tongue ,irritability or lethargy and moderate loss of skin elasticity)

In humans, the most commonly seen type of dehydration is isotonic (isonatraemic) dehydration, which equates with hypovolemia, but the distinction of isotonic from hypotonic or hypertonic dehydration may be important when treating people who become dehydrated.