

# Growth and development: short stature

Turner

- 1- A 5-year-old (boy) presents with short stature. His height is less than the 5<sup>th</sup> percentile, and his weight is in 10<sup>th</sup> percentile. He is asymptomatic with normal features. His mid-parental predicted height percentile was in the 50<sup>th</sup>. What are the investigations to be done for him?

[short stature]

Not familial

- 2- A 7 year old boy presents to your clinic for evaluation of short stature. Parents report that he has always been the shortest boy in his class. He has been well with no chronic medical problems. His height is below the 5<sup>th</sup> percentile with weight on the 25<sup>th</sup> percentile. His mother is 145 cm. The patient's father is 155 cm. There is no family history of any medical problems. : Familial short stature

- 3- If she is short female (it may be Turner syndrome: neck webbing - wide spaced nipples- low hair line- may be aortic coarctation: (echo- ultrasound- thyroid profile- karyotyping- bone age

\* ~~Turner~~ ~~Estrogen & Growth hormone~~  
Genetics: Down syndrome

Chromosomes anomalies

+ [Complications]

2 years old infant presenting with significant delay in motor milestones (delayed neck support, sitting and standing) and mental milestones (delayed speech and mother recognition. There is history of recurrent chest infections. His mother is 38 years old with no family history of similar conditions. The baby is floppy with head circumference and length less than the 5<sup>th</sup> percentile. Abnormal facial features are also noticed. Heart examination revealed pan systolic murmur heard all over the pericardium

## Neonatology

### Hypoxic ischemic encephalopathy

= Fetal insult + Perinatal insult + Low Apgar score

A newborn infant is delivered by cesarean section at 41 weeks' gestation following a pregnancy complicated by a prolapsed umbilical cord and meconium-stained amniotic fluid. Apgar scores at were 1 minute and 5 minutes were 3 and 5 respectively. At 6 hours of age, the infant has a generalized tonic-clonic seizure.

Perinatal asphyxia

A full-term infant is delivered by cesarean section because of failure of labor to progress, or Labor was complicated by prolonged fetal descent and fetal heart decelerations. Or delayed crying onset after birth

Admission at NICU

### Neonatal hyperbilirubinemia

Early

- 1- A 3-day-old infant presenting with jaundice. The baby's direct serum bilirubin is 0.2 mg/dl, with a total serum bilirubin of 11.8 mg/dl. Both the mother and baby have O-positive group. Physiological jaundice
- 2- A well, breast-fed term infant presented with jaundice at 36 hours of age. The total serum bilirubin was 20 mg/dl, direct bilirubin 0.9 mg/dl direct, blood film showed

(+)

Stabilization

Amblyopia

reticulocytes 4%. The baby's blood group was A Rh positive and mother's blood group O Rh positive. ABO incompatibility

- 3- A 24- hour- term infant presented with jaundice. The total serum bilirubin was 20 mg/dL, direct bilirubin 0.8 mg/dl. The baby's blood group was (A Rh positive) while the mother's is (A Rh negative). Rh incompatibility
4. A 6-week-old infant is admitted to the hospital with jaundice. Her outpatient blood work demonstrated a total bilirubin of 12 mg/dl with a direct portion of 4.5 mg/dl. she has dark urine and clay colored stool. Her liver is enlarged 7 cm below the right costal margin: cholestasis

[Severe cases :- start with exchange transfusion]

### Respiratory distress

- 1- A newborn infant born at 32 weeks gestation has a respiratory difficulty noticed immediately after birth and increase in intensity thereafter. Respiratory rate is 65/minute with intercostals and subcostal retraction, nasal flaring and grunting; auscultation revealed diminished air entry on both lungs: RDS
- 2- Term 4200 g infant is delivered via cesarean section. The amniotic fluid was clear, and the infant cried almost immediately after birth. Within the first 15 minute of life, however, the infant's respiratory rate increased to 70 breaths/ minute, and she began to have mild retraction. Oxygen saturation of was 94%: TTN
- 3- A 30-week- gestational infant demonstrates nasal flaring, grunting, and intercostal retractions. A chest radiograph reveals a fine granular appearance of the lung fields. He is intubated and Positive pressure ventilation is initiated.. The baby Initial arterial blood gas reveals pH 7.16, PCO2 50 mm Hg, PO2 50 mm Hg, the : RDS and respiratory failure
- 4- An 8 – hours old full term infant with history of prolonged delivery with premature rupture of membranes develop increased respiratory distress , fever. By auscultation there is right side bronchial breathing and crepitations : congenital pneumonia ( respiratory failure evidences : cyanosis – blood gas)

### Neonatal septicemia and septic shock

for hypothermia  $< 35^{\circ}$

- late onset*
- 4- A 5 day old infant presents with high fever 39 C, vomiting , irritability, and weak suckling . Examination reveals, poorly responsive and sick (toxic) appearing infant. His extremities are slightly mottled with maculopapular and petechial lesions. Thee capillary refill was 5 second. Neonatal septicemia with septic shock

Nutrition: Marasmus – kwashiorkor – rickets : clinical book and theoretical book

## Infections

### 1- Measles

A 10 months old infant presents with a day history of blanching confluent rash which started on his face and now covers his entire body. He is miserable with conjunctivitis and fever of 39 C. The illness started with runny nose and cough 5 days previously

### 2- Roseola infantum

A 14-month-old infant presents with a 4-day- history of high fever without any localizing signs. On the peak of fever, the baby suffers a short convulsive fit and is admitted for observation. On the next day fever subsides, but a maculopapular rash develop over the trunk and abdomen.

### 3- Scarlet fever

A 5-year-old child presents with a 2-day- history of high fever, sore throat and abdominal pain. On the next day fever raises up more and a maculopapular rash develops all over the body. ( tongue changes may be mentioned- skin peeling or desquamation may be also mentioned

### 4- Chicken pox

Six year-old-child presented with fever, runny nose and a rash on his chest and back. It was papular in some areas and vesicular in others. The rash was itchy and was appearing in successive groups

### 5- Mumps

A 4-year-old child presenting with a painful swelling in front and behind the ears, analgesics were prescribed with complete improvement. *10 days after, the child had severe abdominal pain and vomiting. Examination reveals diffuse abdominal tenderness without organomegaly.??*

## Endocrinology

### 1- Diabetic ketoacidosis

A 9-year- old boy presents with vomiting and abdominal pain few hours ago. The mother reports that her child was in a good health until polyuria started 2 months ago, and he began to lose weight. On examination he has deep rapid breathing, respiratory rate 50/minute. ( special odor of his breath may mentioned)

### 2- Congenital hypothyroidism

A 5 -month- old girl presented with history of constipation and delayed developmental milestones. She had a history of prolonged neonatal jaundice. On examination she is pale; hypoactive has an opened mouth with large tongue. She had abdominal distention with umbilical hernia

Down → Abnormal Faeces

Chronic → may be large & small Joints  
 → Not migratory  
 → No dramatic response to salicylates<sup>4</sup>

### Rheumatology : juvenile rheumatoid arthritis

A 4- year- old girl is noticed by her mother to have a limp and swollen left knee. The mother report that the patient occasionally complains of pain in that knee for the last 3 months with poor response to analgesics .

### Hematology

1- Chronic hemolytic anemia – ITP : see clinical book and theoretical book

2- G6PD

No infection  
 A 4-year-old previously well boy is brought to the office by his mother. She reports that he developed pallor, dark urine, and jaundice over the past few days. He has not been exposed to a jaundiced person, but he is taking Trimethoprim-sulfamethoxazole for otitis media. Which of the following is the most likely causes of this patient's symptoms

3- Fe deficiency anemia

4IP  
 A 10 month old female infant is brought to clinic for follow up; her diet consists of ordinary food and a lot of fresh whole milk. ( or may On examination she is pale, hemoglobin is 7.5 gram%; otherwise there are no abnormalities ( exclusive breast feeding till 1 year – pica may be mentioned in the case

4- Leukemia

A 5 – year- old child presents with history of fever for the past 2 weeks, petechial spots all over the body with increasing pallor over the last month an splenomegaly 4cm below costal margin. ( may be also arthritis- significant weight loss)

= prolonged fever  
 A nine year old boy was treated for pharyngitis one month ago. He is now brought in because his mother notes pallor, and easy bruising in his extremities. He complains of leg and arm pains over the last 2 weeks. He has lost about 2.4 kg in the past month. He has a spleen 4 cm below the left costal margin and a liver 3 cm below the right costal margin = HSM

5- Henoch schonlin purpura

A 5-year-old boy who was previously well presents with a low grade fever colicky abdominal pain , painful knee joints and a rash mainly on the back of his legs and buttocks. On examination there was no abdominal tenderness or masses.

6- Hemophilia

1.5 years old presents with history of easy bruising and a history of prolonged post circumcision bleeding in the past. On examination he has a MUSCLE HEMATOMA. Family history is positive for frequent nose bleeding and menorrhagia

## Neurology

1- Cerebral palsy

An infant, 3 years old presenting with convulsions and significant delay in motor and mental development, till now he is unable to sit or recognize his mother. He can move his limbs but unable to perform any useful action. His mother had antenatal history complicated by hypertension and bleeding. Intra partum he was delivered by cesarean section, he was cyanosed and did not cry except after 10 minutes. Examination: wasting, hypertonic, hyperreflexia and positive clonus

2- CNS infections : fever + vomiting + headache + convulsions + disturbed conscious level + neck signs ( rigidity , retraction)

REMEMBER : MENINGOCOCCAL SEPTICEMIA

A 2-year-old girl presents to casualty with a 24-hour history of being febrile and miserable and has developed a rapidly spreading non-blanching rash. She has cool peripheries and is drowsy.

3- Febrile convulsions

*6 months → 6 yrs*  
A 2-year-old child brought by his parents with acute onset high fever followed by convulsions there is no history of headache or vomiting. On examination his temperature is 39.7°C. He is fully conscious with no convulsions, no neck rigidity but he has congested pharynx.

*No Intracranial infection*

*→ Extracranial infections*

4- Guillain Barre syndrome

About 12-days after a mild upper respiratory infection, a 10-year-old boy complains of weakness in his lower limbs. Over several days, the weakness progresses to include his trunk. On physical examination, weakness was symmetrical and associated with hypotonia

5- Duchenne dystrophy

A 4-year-old boy's parents complain that their child has difficulty walking. The child rolled, sat, at normal ages and first walked at 13-months of age. Over the past several months, the family has noticed an increased inward curvature of the lower spine as he walks and that his gait has become more "waddling" in nature. On examination, he has enlargement of his calves

## Emergency

1- Stridor : croup

2-year-old infant developed noisy breathing on inspiration, marked retractions of the chest wall, flaring of the nostrils, and a barking cough. He has had a mild upper respiratory infection for 2 days

2- Anaphylactic shock

Anaphylaxis is a severe allergic reaction which can be life-threatening. It occurs when your child's immune system overreacts to an allergen. The whole body is affected, usually within minutes. When the allergen is detected by the immune system, it triggers the release of massive amounts of histamine and other chemicals, and can cause the body to go into anaphylactic shock. This produces rapid and sometimes life-threatening symptoms, including:

- rash (hives), and swelling of the skin, lips or face
- wheezing or severe breathing problems
- rapid pulse
- sweating
- dizziness, fainting, loss of consciousness
- nausea, vomiting, abdominal cramps
- extremely pale skin

Treatment

A + B + C + D

- 1- Rapid, assessment of the airway, breathing and circulation,
- 2- Immediate administration of IM epinephrine.
- 3- Oxygen and full cardiorespiratory monitoring
- 4- Iv fluids in Patients with cardiovascular involvement (tachycardia, hypotension or delayed capillary refill) : 20 mL/kg boluses of normal saline. This should be repeated as required to maintain cardiovascular stability. Ideally, patients should be placed supine or in the Trendelenburg position, which optimizes venous return to the heart and prevents pooling of blood in the lower extremities

Continuous reassessment of vital signs and patient condition during management will help to determine further need for intubation, more fluids or, perhaps, initiation of inotropic support.

VIP

Diarrhea, Dehydration  
IDH A  
Hepatitis



# \* Investigations of Rheumatoid arthritis

Alab

CS CBC - Autoimmune haemolytic Anaemia  
Autoimmune ITP

Rheumatoid arthritis

+CRP & ↑ ESR

Rheumatoid Factors -ve in children

-ve with  
Rheumatoid  
arthritis

\* Renal functions Tests &  
Liver functions

\* ANCA & Anti-DNA Antibodies  
Anti-smooth Muscles Antibodies  
Anti-liver & kidney microsomal

\* Reduced C3 & C4 & Nephritis

\* Renal Biopsy

\* Imaging :- X-Ray on Joints

↳ Narrowing of Joint spaces

\* Fundus & slit-lamp: Iridocyclitis

\* HLA Typing with TYPE II

## \* Investigations

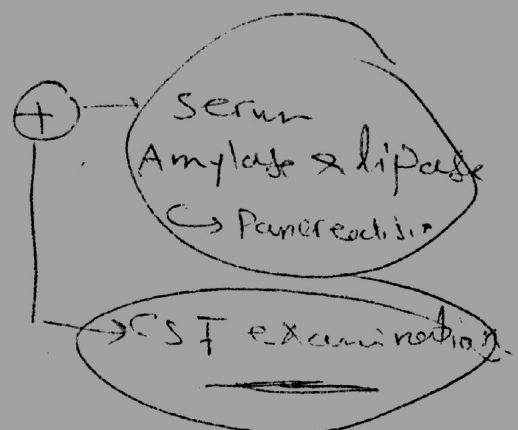
→ CBC :- Lymphocytes  
ESR & CRP  
with normal count

→ viral study :- ELISA, PCR

→ Chest X-Ray

→ complications:- Meningitis  
↓  
Brain C.T

⊕ Mumps :- As Above



Measles treatment :- ~~ap~~ prevention :- M/M/R  
→ sero prophylaxis

Specific :- Management of febrile infants  
↑  
Antibiotics  
→ Paracetamol or Tylenol  
→ Anti-pyretics as paracetamol