Shock Lecture Bonnie Desselle, MD

Case 1 (Medical students and 1st year residents)

1 year old infant presents with a history of diarrhea for two days which is described by mother as profusely watery. She states that he has had at least 10 stools/day and she brought him in today because of sleepiness and refusal to take a bottle. She has not seen any blood, just brown stool with water that is so loose that it comes out of his diaper. She is not sure of urine output as there is so much watery stool in diapers. There is no history of fever or vomiting. He does attend a day care and she is not aware of other children with diarrhea. He has been healthy except for a few URI's and one episode of otitis media three weeks ago treated with some unknown medication. He was premature by three weeks but was discharged in two days from hospital. He has not required any surgeries and there is no significant family history. Immunizations are up to date. On exam vital signs show: HR 190, RR 40, T 37, BP 60/30. He is lethargic and lying quietly in mother's arms. He does not resist your examination. His skin is pale and cool to touch. Anterior fontanelle is sunken and there are no tears when he cries. His lips and mucosa are dry. The lung sounds are clear and cardiac exam is normal except for tachycardia. The abdomen is soft with no hepatosplenomegaly. Pulses are weak distally and easier to palpate centrally. The capillary refill is 4 seconds in the fingertips. There are no rashes.

Case 2 (2nd year residents)

15 month old boy presents with a one day history of rash and fever. The mother states that he is not acting right and alternates between irritability with inconsolable crying and excessive sleepiness. He is previously healthy with no underlying medical conditions. There has been no one else ill around the boy and he does not attend a day care. He is refusing to eat or drink any thing today and had only one wet diaper today. She says the red spots started off very small and grew in size over a few hours. He has not been scratching his skin. They have not travelled any where and have no pets. He is currently not taking any medications. On exam, HR 160, RR 40, T 39.6, BP 50/20, Wt 13 kg, O_2 saturations not correlating with pulse. He is lying still and has poor muscle tone. He is irritable if touched and his cry is weak. His neck is supple. Oral mucosa is dry. There are no abnormal airway sounds, retractions or flaring but appears mildly tachypneic. He is pale with scattered petechiae on abdomen with mottled extremities. Cardiac exam reveals tachycardia with normal rhythm and no murmurs or gallops. Abdomen is mildly distended with organomegaly. He has cool extremities with cap refill of 4 seconds, and weak thready pulses.

Case 3. (3rd and 4th year residents)

A 10 year old boy presents with a chief complaint of chest pain and shortness of breath. He has had 5 days of cold and cough symptoms. According to his mom, he has been lying around a lot and has missed 1 week of school. He is usually a very active child but complains that he is "just too tired" to play. He complains that his chest hurts, mostly with cough. He says that he has a hard time catching his breath whenever he gets up to walk around. He has no medical problems or surgeries. He is in the fourth grade at school and had been the star basketball player until becoming ill. His only exposure to illness is his aunt, who was recently hospitalized for pneumonia. On initial presentation, he is a thin, pleasant boy who seems tired but talks in complete sentences without difficulty. He is tachypneic with mild retractions and is slightly pale in color, with dusky nail beds. His vital signs include a respiratory rate of 30/minute, heart rate of 130/minute, a blood pressure of 90/65 mmHg, and an oral temperature of 37.8^{o}C. Oxygen saturation is 90% on room air. His weight is 36.4 kg. He is lying on the gurney with head elevated. Capillary refill time is 4 to 5 seconds with cool distal extremities. His lungs have diminished breath sounds, with wheezing with deep breaths. His cardiac exam reveals tachycardia, regular rhythm, with a gallop and no murmurs. His abdomen is soft, slightly distended with palpable liver 3 cm below costal margin. He is neurologically intact.

Worksheet Shock Cases

In the case assigned to you:

What is your main concern? Define the patient's problem:

_____

_____

What is the most likely etiology based on this assessment?

_____

_____

Which findings on history and physical exam lead you to this conclusion?

_____

_____

_____

_____

Discuss the definition of shock. In the normal state, there are many determinants of oxygen delivery that result in adequate perfusion e.g. a patient's heart rate. List them. There are several. List as many as possible.

_____

_____

_____

_____

_____

_____

_____

Review the three cases and discuss which factors were responsible for shock in each case.

Case1:_____

Case 2:_____

Case 3:_____

What laboratory tests would you like to obtain to confirm or support your diagnosis and assist with management?

Case 1:

_____

_____

Case 2:_____

_____

Case 3:_____

_____

What is the initial management of all patients with shock?

_____
_____
_____
_____
_____

In regard to the cases, compare and contrast the definitive management?

Case 1:_____

_____

Case 2:_____

_____

Case 3:_____

_____