

Vignette

- 15 y/o male with no significant PMH who brought to ED for evaluation after mom found him unresponsive in his bed. Mom reports he had high fevers for the past 4 days associated with chills and today she noticed a rash on him. Mom has been giving acetaminophen to control fever without much success and reports that for the past 4 hours he has been asking for his dead grandmother. He recently got home from a 2 month summer camp with JROTC. No one at home has similar symptoms. As per mom his vaccines are up to date.

Physical exam

V/S: T40C HR115bpm RR30/min BP86/65mmHg
Wt40kg

HEENT: normocephalic, PERRL with sluggish response, injected conjunctiva bilaterally, intact TM's, non-erythematous oropharynx

Cardio: S1S2, 2/6 systolic murmur, +1 radial and posterior tibialis

Chest: CTAx2, symmetric expansion, non-labored breathing

Abdomen: +BS, non-tender, no organomegaly

Skin: Flushed appearance, warm, macular purplish rash noted over his extremities and torso, Cap refill 3 seconds.

Neuro: disoriented, GCS of 9



Patient was given two 20mL/kg bolus without much improvement of clinical status. What would be the next step in management?

- A. 20mL/kg fluid bolus with normal saline
- B. 20mL/kg normal saline bolus and steroids
- C. 20mL/kg normal saline bolus and etomidate
- D. 20mL/kg normal saline bolus and norepinephrine

Patient was given two 20mL/kg bolus without much improvement of clinical status. What would be the next step in management?

- A. 20mL/kg fluid bolus with normal saline
- B. 20mL/kg normal saline bolus and steroids
- C. 20mL/kg normal saline bolus and etomidate
- D. 20mL/kg normal saline bolus and norepinephrine**

Answer: 20mL/kg normal saline bolus and norepi.

Although a normal saline bolus may be considered adequate to increase intravascular pressure it is of note that this particular patient had been refractory to crystalloid therapy on its own. As the patient has received 40-60mL/kg of crystalloid without much response, a vasopressor, i.e. norepinephrine, should be added to therapy. Norepinephrine is considered first line drug for warm shock, what the patient in the vignette is suffering of. Corticosteroids may be added to therapy once it has been proven that the clinical status of the patient is not improving on crystalloids in conjunction with vasopressor, suggesting an adrenal insufficiency. Etomidate is an analgesic, would not provide any help in maintaining intravascular pressure.

After 60mL/kg of normal saline, a norepinehrine infusion, and MIVF were started. Patient's clinical status improved: V/S HR100bpm BP 90/70mmHg RR. Lab work and cultures were drawn. What would be the most appropriate antibiotic therapy for our patient?

- A. Clindamycin, Metronidazole, Ceftriaxone
- B. Gentamycin, Clindamycin
- C. Clindamycin, Amphotericin, Ceftriaxone
- D. Vancomycin, Ceftriaxone

After 60mL/kg of normal saline, a norepinehrine infusion, and MIVF were started. Patient's clinical status improved: V/S HR100bpm BP 90/70mmHg RR. Lab work and cultures were drawn. What would be the most appropriate antibiotic therapy for our patient?

- A. Clindamycin, Metronidazole, Ceftriaxone
- B. Gentamycin, Clindamycin
- C. Clindamycin, Amphotericin, Ceftriaxone
- D. Vancomycin, Ceftriaxone**

Answer: Vancomycin and Ceftriaxone

When considering empiric antibiotic therapy, the patient's age, immunocompetence, and possible source of infection should be taken into account, as well as wanting a broad spectrum of coverage including MRSA. As the patient in the vignette most likely is suffering from meningococemia, vancomycin and ceftriaxone would be a most appropriate therapy for him. Due to lack of evidence of the patient being immunocompromised, fungal infection unlikely to be cause of symptoms, hence why he would not require amphoterecin within his therapy. Aminoglycosides such as gentamicin are usually added to therapy when source of infection is considered to be from the genitourinary tract. Clindamycin or metronidazole are usually added to therapy when sourced of infection is believed to rise from the Gastrointestinal tract..

References:

https://sg.med.miami.edu/contents/,DanaInfo=www.update.com+septic-shock-ongoing-management-after-resuscitation-in-children?source=see_link&anchor=H18270403#H18270403

https://sg.med.miami.edu/contents/,DanaInfo=www.update.com+septic-shock-rapid-recognition-and-initial-resuscitation-in-children?source=search_result&search=septic+shock+pdiatrics&selectedTitle=1%7E150#H9034264