BVS MONITORING - Think about outcomes

WHAT DOES THE GRAPH LOOK LIKE?

1. Look at the graph, does it
   a) move across screen in a fairly straight line
   b) does it decrease in a linear fashion
   c) does it drop quickly
   d) does it rise
   e) does it rise or fall when the UF is changed
   f) does it fall with a corresponding drop in BP

2. Think about what might be causing the graph to change and how this may relate to a patient's medical history

WHAT COULD THE GRAPH BE INDICATING?

1. **A straight line graph:**
   - refill rate is keeping up with UF rate
   - if patient's BP remains relatively high this could indicate more fluid can be removed and a decrease in IBW
2. **A linear decrease:**
   - if patient's BP stays within a normal range this may indicate an optimal removal of fluid, with refill adequately compensating for the chosen UF
   - blood viscosity is increasing, however, patient's refill rate is adequate to maintain patient's BP without adverse effects
3. **A steep decline + low BP and adverse effects:**
   - refill rate is not keeping up with UF rate
   - IBW is too low, needs review
   - IBW is correct, however, removal of fluids needs to be slowed

REFILL RATE CAN BE AFFECTED BY:

1. **Oncotic and osmotic pressures**
2. **Hydrostatic pressures**

- Fluid flow across capillary walls depends on the difference between the hydrostatic (blood) pressure and the osmotic/oncotic pressure within the capillary bed
- Blood pressure, predominating at the arterial end of the capillary bed, tends to force fluid (and solutes) outward into the interstitial spaces and cells
- Oncotic and osmotic pressures tend to draw fluid back into the bloodstream at the venous end of the capillary bed, as the blood has a higher concentration of plasma proteins than does the interstitial fluid (Marieb, 2000, p.344)

SUGGESTIONS:

1. Try to use BVS monitoring on a patient consecutively for 4 to 5 sessions
2. Look for trends and note them down
3. Choose an individual "alarm limit" which will allow time for appropriate interventions in order to prevent adverse effects
4. Try to adjust alarm limits and UF rate in small increments to help determine the patient's actual IBW

LOOK AT THE PATIENT'S MEDICAL HISTORY:

- Do they have IHD, CCF, diabetes, low albumin, hypertrophy of the ventricles, decreased muscle tone, decreased mobility…..
- **Such medical conditions can affect the balance between the body's hydrostatic and osmotic/oncotic pressures and therefore**

  An individual's refill rate can be affected, affecting fluid removal and hence UF rate