MA112 Lab 2
Critical Thinking Questions
Week 4

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1. Why are red blood cells biconcave?

   Red Blood cells are biconcave because it allows them to fold up and move through narrower blood vessels. It also optimizes the ratio of surface area to the volume, helping with the gas exchange.

2. Why is a WBC differential so important when making differential diagnoses?

   White blood cell differential is important when making differential diagnoses because it determines the percentage of each type of white blood cell and it can also tell you if there is immature WBC and abnormalities. This allows the provider to make a more precise diagnosis for the patient.

3. Why are patients who have relatively normal hemoglobin, but a low hematocrit given packed cells rather than whole blood?

   Patients with a normal hemoglobin but a low hematocrit are given packed cells because a low hematocrit level indicates that the patient does not have enough red blood cells, which could indicate anemia. Packed cells are simply pack red blood cells and are given to patient who are experiencing anemia or low hematocrit levels. They would not give the whole blood in this instance because, for the patient to get the red blood cell count, they need from whole blood they would have to transfuse more blood then packed cells. This could result in volume overload.

4. What are the essential features of blood cells used in the differentiation of the cells?

   The essential features of blood cells used in differentiation of the cells are if the cell is flexible, can it pass through small vessels, does it have a membrane, does it contain lipids ad proteins, does the cell have a nucleus, does the cell contain hemoglobin, does it bind oxygen. Conditions that these traits would show you would be anemia within a patient.

5. What is the normal shape of a red blood cell? A white blood cells.

   The normal shape of a red blood cell is round and biconcave, almost looks like a contact but a lot smaller, and red blood cells are flexible to go through narrow vessels. White blood cells are small, but you identify them by the shape of their nucleus. WBC have a white outer perimeter and a darker colored nucleus. White blood cells do not have an exact shape to them.

6. Why are capillary punctures used to obtain a blood specimen from geriatric patients?

Capillary punctures are used to obtain a blood specimen from geriatric patients because they are more susceptible to blood depletion, the capillary puncture ensures that not too much blood has been taken. Capillary punctures are also less invasive and more comfortable for the patient to deal with than the traditional venipuncture.

7. Where is the primary site for the production of erythrocytes, granulocytes, and platelets?

   The primary site for production of erythrocytes, granulocytes and platelets is bone marrow. Bone marrow is located inside our bones and it is a soft tissue that is spongy. In the bone marrow is were white blood cells and red blood cells (stem cells) are produced.