

Leukemia Activity Suggestion

Activity 5C

Note:

This activity suggestion describes how specific content might be taught to middle school students. It does not contain fully developed lesson materials, which we hope to develop under future funding in this content area. Any feedback on how you are able to use this lesson suggestion would be greatly appreciated. Your comments can be sent to us at teachhealthk-12@uthscsa.edu.

Activity Focus:

In this activity students will be able to identify the type of leukemia a fictional patient may have based on a fictional clinical history and lab work.

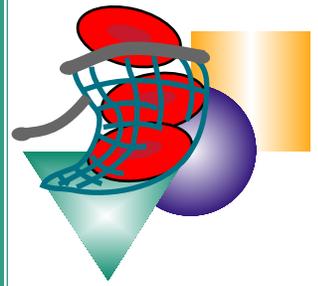
Activity Rationale:

Leukemia is a cancer that affects the white blood cells (WBCs). Bone marrow produces white blood cells that defend the body against disease and infection. With Leukemia, the bone marrow produces abnormal WBCs that function normally at first but then over time begin to take over and prevent the cells from carrying out the necessary functions needed for homeostasis.

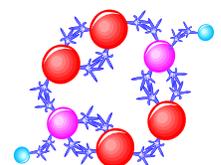
Leukemia can be broken down by the type of WBC that is affected. It can affect the lymphoid cells or myeloid cells. These two types can then be classified as chronic or acute.

Suggested Methodology:

Introduce what leukemia is to the students with text and visuals. Display a transparency of four blood samples (2 with leukemia, 1 leukemoid reaction, and 1 normal). Explain the different structures the students see. Compare the healthy blood sample transparency to the other three and ask the students to discuss what is similar and what is different. This is the time to review structure and function of the blood. Of the three starting samples only two really have leukemia, the third sample will have what is called a leukemoid reaction which is the body's reaction to an infection. This sample will look different from the others because it will have little specks in it which are known as toxic granulations. The teacher is modeling how the comparisons and diagnosis will be done by the students. You can include a fictional patient clinical history with a fictional patient not having any pain in his/her abdomen, a good WBC and RBC count, and no sign of leukemia or anemia.



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Cast Your Net: Adventures With Blood

The other two fictional patients will either have acute or chronic leukemia and it will be up to the students to figure out which one the patient has by making observations on their blood sample pictures and clinical history.

The clinical history can be done as follows for each patient:

ACUTE

25 years old
Pain in abdomen
Weight loss
Swollen lymph nodes
Bruises
Nose bleeds
Achy bones
Symptoms have occurred
for 2 weeks

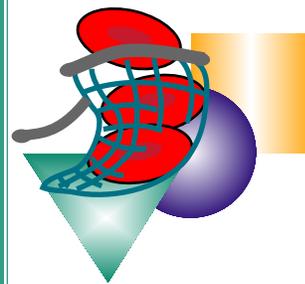
CHRONIC

70 years old
Pain in abdomen
Weight loss
Swollen lymph nodes
Bruises
Achy bones
Symptoms have occurred
for 5 months

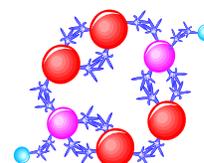
All of these are symptoms of Leukemia. Chronic leukemia spans over a longer period of time. Since this patient's symptoms have developed over a longer period of time, their discomfort/pain may be less severe than the patient whose symptoms came on suddenly. You might want to include a pain likert-type scale where the patient points at a 1–10 chart to describe pain. The abdominal pain comes from the growing spleen, the organ in charge of breaking down RBCs. The easy bruising hints at anemia because of the low RBC count. Chronic leukemia typically occurs in elderly patients.

The blood sample from the fictional patient with acute leukemia will have a high number of lymphoblasts and the chronic fictional patient will have a low number.

Students will need to research what they will tell their "fictional patient" and be prepared for any questions that they might have.



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Suggested Resources:

Leukemia and Lymphoma Society

http://www.leukemia-lymphoma.org/all_page?item_id=7026

(Good breakdown of the types of leukemia)

National Cancer Institute

<http://www.cancer.gov/cancertopics/types/leukemia>

(breakdown of treatments)

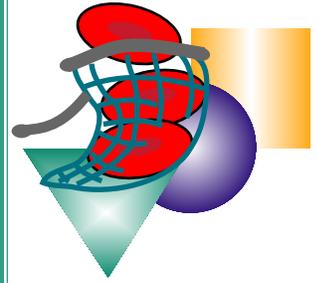
<http://www.cancer.gov/cancertopics/pdq/treatment/CLL/Patient>

(nice graphic organizer on lymphoid vs. myeloid cells)

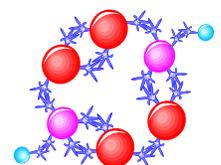
National Library of Medicine

<http://www.nlm.nih.gov/medlineplus/tutorials/leukemia/htm/index.htm>

(tutorial on leukemia-can be used to further explain to students)



Activity Suggestion, continued



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