Unique cell: Acute Myeloid Leukemia (Myeloid Cells)

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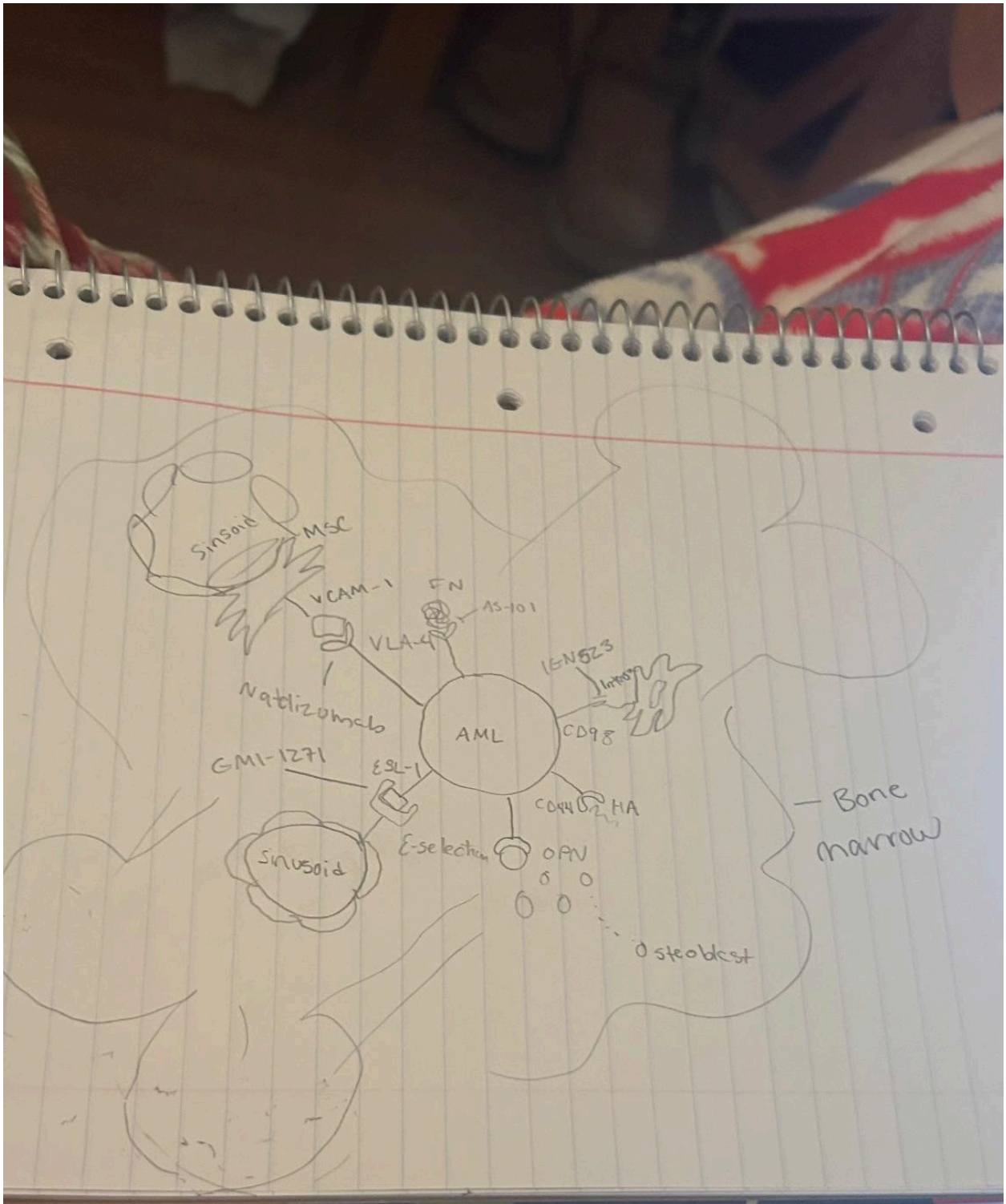
Leukemia is a type of cancer that is caused from the mutation in the developing white blood cells. This mutation rapidly grows in the bone marrow where the body's blood cells are made. Unlike most cancers, Leukemia doesn't develop a tumor that allows it to show up on the CAT scans. There are many forms of cancer, Leukemia. Some leukemia cancers are more common in children, while some types of leukemia develop in adults. The treatment varies in which type of leukemia and what stage you are at in your life. Acute Myeloid Leukemia (AML) is an hostile type of cancer that, left untreated, could be life-threatening. This type of cancer usually affects people around the age of 60 or older, however, it can also impact younger individuals, including children.

In the article "Acute Myeloid Leukemia Developing in Patients with Autoimmune Disease," people are more susceptible to getting AML due to the lack of less white cells from already developing or having an autoimmune disease. This research also goes into details of using cytotoxic therapies where they give you a drug that takes care of the tumorish cell or at least shrinks it. However, they had many failed trials where they weren't able to reveal a clear correlation between the leukemia and the exposure to individual agents used for the treatment of autoimmune diseases (3). They also tried to treat rheumatoid arthritis, behcet's disease, and systemic lupus erythematosus (3). All these cases were conducted to find the resemblance in their structures.

Unlike leukemia, AML typically develops when genes or chromosomes mutate. Every form of AML affects your blood cell levels, but each type of AML has its symptoms as well as treatment options. Usually, medical pathologists determine the AML types by taking a microscope and examining the cancer cells. Another way for them to determine the type of AML is by also looking for alterations in the genetic material and DNA alterations that help regulate

cells growth and their activities. According to Dr. Lowenberg, in the United States, Acute myeloid leukemia affects around 2.4 per 100,000 in adults annually and increases progressively with age, to a peak of 12.6 per 100,000 (1).

For treatment, most AML include chemotherapy, targeted therapy, or allogeneic stem cell transplantation. Allogeneic stem cell transplantation is a medical procedure in which healthy stem cells from a compatible donor are used to replace the patient's diseased or damaged bone marrow. It is also known as allogeneic bone marrow transplantation. The main goal is to achieve remission and prevent a recurrence of the disease. According to Dr. Lowenberg findings, his procedure has been established in practice for 15 to 20 years and can cure 50 to 60 percent of recipients (1). In the research studies of the “Journal of The National Comprehensive Cancer Network” when they used molecular markers to identify molecules within a sample to test the individual’s risk for AML they found The 2 most frequent molecular lesions with prognostic impact in patients with AML are mutations of the *FLT*3 gene (37%-46% of patients) encoding a receptor tyrosine kinase involved in hematopoiesis, and mutations of the *NPM1* gene (28%-35%) encoding a shuttling protein within the nucleolus (2). To further the treatment, the second wave they use for treatment is consolidation therapy, which kills most of the lingering cancerous cells. This treatment reduces the risk of AML coming back. This treatment may be administered for five days each month over a period of three to four months, depending on the severity of the cancer. However, some doctors recommend maintenance therapy because of its lower doses of chemotherapy. This treatment, however, can continue for months or years As research continues to advance, newer targeted therapies, immunotherapies, and precision medicine approaches are explored to improve survival rates and reduce treatment-related complications.


Sinsoid
MSC
VCAM-1
FN
AS-101
VLA-4
Natlizumab
AML
LEN525
CD98
GMI-1271
ESL-1
CD44
HA
E-selectin
OPN
Sinusoid
Osteoblast
Bone marrow

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