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A Patient-Friendly List of Terms

Associated With
Chronic Lymphocytic Leukemia (CLL)



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As you continue reading about your leukemia, you are likely to come across some of the following words. We hope that these simplified definitions will help you gain a basic understanding of them. (An unfamiliar word inside a definition may be defined in its alphabetical location.)

adenopathy | abnormal swelling of lymph nodes, one of the signs that leukemia may be present

AIHA | autoimmune hemolytic anemia, a serious blood disorder

ALC | absolute lymphocyte count—the number of lymphocytes (a type of white blood cell) found in the blood (see blood values)

alkylating agent | a type of chemotherapeutic drug for treating malignancies. Examples:
—chlorambucil (Leukeran® tablets)
—cyclophosphamide (e.g., Cytoxan®)
—combinations of the above with corticosteroids (with or without doxorubicin)— e.g., COP, CAP, or CHOP

allogeneic transplant | a medical procedure that transfers bone marrow or stem cells (graft) taken from a person other than the patient (as opposed to a graft that comes from the patient's own body, known as an autologous transplant)

allopurinol | a medication often used to prevent a serious condition called tumor lysis syndrome

alopecia | abnormal hair loss, a side effect of some chemotherapy treatments

ANC | absolute neutrophil count—the number of neutrophils (a type of white blood cell) found in the blood

anemia | a condition in which there are abnormally low levels of red blood cells; this can cause fatigue, shortness of breath, and a pale complexion

antibiotics | medications used to treat infection

antibody | a protein produced by B cells that is directed to a target (antigen) to help fight infections

antigen | any foreign substance that triggers an immune response and the production of antibodies

apoptosis | programmed cell death; the desirable death of unwanted cells, such as leukemia cells, or the death of normal cells

autologous transplant | a medical procedure that restores to the patient his or her own bone marrow or stem cells (graft) that were taken previously from his/her body

B cell | a type of immune cell (a B lymphocyte as opposed to a T lymphocyte) that produces antibodies; most CLL is of the B-cell type

Binet stages | a CLL staging system used primarily in Europe; the stages are labeled A, B, or C in increasing order of disease burden

blood cells | cells that travel in the bloodstream, e.g., red blood cells (erythrocytes) and white blood cells (leukocytes)

blood count | CBC= complete blood count (a total measurement of certain blood components: red and white cells, hematocrit, and differential); see also WBC and RBC

blood values	normal levels of blood components: <i>hematocrit</i> : 40 to 54 mL/100 mL, also expressed as 40% to 54% (men), 37% to 47% (women) <i>hemoglobin</i> : 14 to 18 g/100 mL (men), 12 to 16 g/100 mL (women) <i>platelets</i> : 150,000 to 350,000/mm ³ <i>white blood cells (leukocytes)</i> : 4500 to 11,000/mm ³ (normal average is around 7000/mm ³) <i>lymphocytes</i> : 2 to 4 x 10 ⁹ /L (about 20% are B cells, about 70% are T cells)
bone marrow	the part of bone that produces red and white blood cells and platelets
CAP	a combination chemotherapy sometimes used in treating leukemia, consisting of cyclophosphamide, doxorubicin, and prednisone
CD4+ cells	a type of T cells, also known as helper T cells, that enhances the immune response by activating B cells and other cells
CD8+ cells	a type of T cells that recognizes foreign antigens on the surface of an infected cell; they attack and kill the cells that make antigens
CD20	a protein found on the surface of B cells that plays a role in regulating and activating B cells
CD52	a protein found on the surfaces of lymphocytes (B and T cells)
CHOP	a combination chemotherapy used in treating leukemia, consisting of cyclophosphamide, vincristine, either prednisone or prednisolone, and doxorubicin

CMV	cytomegalovirus
complement	a blood protein complex that helps to eliminate certain bacteria and other harmful cells
COP	a combination chemotherapy used in treating leukemia, consisting of cyclophosphamide, vincristine, and either prednisone or prednisolone
cord blood	blood that remains in the umbilical cord and placenta after a birth; a rich source of stem cells, useful for transplants
cytomegalovirus	a virus infection; a potentially serious disease seen in patients whose immune system is not functioning properly; also known as CMV
cytopenia	a condition in which there are reduced numbers of granulocytes, neutrophils, or platelets in the blood
DCF	deoxycoformycin; pentostatin
deoxycoformycin	a purine analog, also called DCF, used in treating leukemia
doxorubicin	a chemotherapeutic agent, e.g., Adriamycin®
ECOG	Eastern Cooperative Oncology Group
EPO	erythropoietin
erythropoietin	a hormone that stimulates the production of red blood cells
FCR	a combination chemotherapy used in leukemia, consisting of fludarabine, cyclophosphamide, and rituximab

FISH	fluorescence in situ hybridization; a laboratory technique for detecting abnormal genes in patients with leukemia
flow cytometry	a laboratory technique for measuring cells in blood or bone marrow
FR	a combination chemotherapy used in leukemia, consisting of fludarabine and rituximab
FUO	fever of unknown origin
G-CSF	granulocyte colony-stimulating factor—a therapy to stimulate the growth of neutrophils
GM-CSF	granulocyte-macrophage colony-stimulating factor—a therapy to stimulate the growth of neutrophils, macrophages, and dendritic cells
granulocyte	a type of white blood cell that is the body's first defense against bacterial infections; there are 3 kinds: neutrophils, eosinophils, and basophils
Hb	hemoglobin (also Hgb)
HCT (Hct)	hematocrit
hematocrit	the percentage of a blood sample that is occupied by red blood cells
hematopoietic	pertaining to the formation of new blood cells
hemoglobin	the oxygen-carrying protein contained in red blood cells (Hb or Hgb)
hemolysis	the destruction of red blood cells

Hgb	hemoglobin (also Hb)
histocompatibility	tissue compatibility that is needed between a donor and a transplant recipient
HSC	hematopoietic stem cell
hypoxia	abnormally low levels of oxygen in blood
immunoglobulins	antibodies that are produced naturally in the body by B cells to fight infection
IWCLL	International Workshop on CLL
karyotype	the chromosomal characteristics of an individual person
leukocyte	a white blood cell
leukocytosis	an abnormal increase of white blood cells
leukopenia	an abnormally low level of white blood cells
lymphadenopathy	enlarged lymph nodes
lymphoblast	an immature cell, usually found in the bone marrow, that matures into a lymphocyte
lymphocyte	white blood cell formed in bone marrow, lymph nodes, spleen, and thymus
lymphocyte doubling time	LDT; the time it takes for the lymphocyte count to double; related to prognosis in patients with CLL: those with LDT greater than 12 months are more likely to have a good prognosis
lymphocytopenia	abnormally low level of lymphocytes in the bloodstream

lymphocytosis	abnormal increase in number of lymphocytes in blood
lymphoma	general term for cancers that invade the lymph nodes and spleen
lysis	destruction of cells
macrophage	scavenger blood cell (eats dead cells, bacteria, etc.)
monoclonal antibodies	laboratory-created antibodies that mimic natural antibodies, developed to attach to specific targets on cancer cells in order to destroy them; this mode of action is different from that of chemotherapy. Examples include Campath® (alemtuzumab) and Rituxan® (rituximab)
monocyte	a large white blood cell whose function is to destroy some microbes
MRD	minimal residual disease, the malignant cells that linger in marrow or blood after leukemia therapy; elimination of detectable MRD is associated with a better prognosis
myelosuppression	suppressed blood cell production
natural killer cells	NK cells; early lymphocytes that kill tumor cells by an unknown mechanism
NCIWG	National Cancer Institute Working Group
neutropenia	abnormally low level of neutrophils in the bloodstream
neutrophil	a type of white blood cell, made in bone marrow, whose function is to destroy invading microbes

NK cells	natural killer cells
NST	non-myeloablative stem cell transplant
pancytopenia	reduction of red and white blood cells and platelets in circulating blood
partial response	a less-than-complete response to therapy, determined in CLL by such criteria as white blood cell counts, size of lymph nodes, and size of spleen
PBSC transplant	peripheral blood stem cell transplant
PCR	polymerase chain reaction assay—a diagnostic test for CMV and other diseases; also used to detect MRD
p53 gene	a tumor-suppressor gene; the deletion or mutation of this gene has prognostic value
platelets	irregularly shaped disks found in the bloodstream; they help form blood clots
PLL	prolymphocytic leukemia
prednisone	a corticosteroid used to treat autoimmune hemolytic anemia (AIHA) and thrombocytopenia, among other things
purine analogs	also called nucleoside analogs; these chemotherapy drugs work by interfering with DNA replication; examples include the following: <ul style="list-style-type: none"> —fludarabine (Fludara®) —2-CdA (2-chlorodeoxyadenosine); cladribine (Leustatin® injection) —DCF (deoxycoformycin)

Rai stages | a staging system (pronounced “rye”) used in evaluating the progression of CLL; the stages are 0, I, II, III, and IV—in increasing order of seriousness of the disease; Rai stages are more commonly used in the United States while Binet stages are used overseas

refractory | resistant to therapy

RBC | red blood cells

Richter transformation | Richter’s syndrome; a lymphoma that may develop in patients with CLL

rigors | a feeling of cold with shivering, pallor, and raised temperature

spleen | the largest lymphatic organ of the body

TBI | total body irradiation (a preparatory step for transplant)

T cell | T lymphocyte (as opposed to B lymphocyte); a type of white blood cell that has an important role in the immune system; CLL is rarely T-cell type although CLL can be present in some T cells

thrombocyte | platelet

thrombocytopenia | abnormally low level of platelets in blood

trephine | bone marrow biopsy

tumor lysis syndrome | a metabolic emergency that sometimes occurs at start of chemotherapy for leukemia; can cause kidney failure

V_H genes | “variable region heavy-chain genes”; the presence of mutated V_H genes is a predictor for longer survival in CLL; also referred to as IgV_H genes

WBC | count of white blood cells per cubic millimeter of blood

ZAP-70 | Zeta-associated protein; patients with low levels of ZAP-70 in their bloodstream tend to have a better prognosis than those with high levels

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