

2008 WHO classification of Leukemia & lymphomas

Myeloproliferative neoplasms (MPN)

1. Chronic myelogenous leukemia, *BCR-ABL1*–positive
2. Chronic neutrophilic leukemia
3. Polycythemia vera
4. Primary myelofibrosis
5. Essential thrombocythemia
6. Chronic eosinophilic leukemia, not otherwise specified
7. Mastocytosis
8. Myeloproliferative neoplasms, unclassifiable

Myeloid and lymphoid neoplasms associated with eosinophilia and abnormalities of *PDGFRA*, *PDGFRB*, or *FGFR1*

1. Myeloid and lymphoid neoplasms associated with *PDGFRA* rearrangement
2. Myeloid neoplasms associated with *PDGFRB* rearrangement
3. Myeloid and lymphoid neoplasms associated with *FGFR1* abnormalities

Myelodysplastic/myeloproliferative neoplasms (MDS/MPN)

1. Chronic myelomonocytic leukemia
2. Atypical chronic myeloid leukemia, *BCR-ABL1*–negative
3. Juvenile myelomonocytic leukemia
4. Myelodysplastic/myeloproliferative neoplasm, unclassifiable
5. *Provisional entity: RARS and thrombocytosis*

Myelodysplastic syndrome (MDS)

1. Refractory cytopenia with unilineage dysplasia
2. Refractory anemia
3. Refractory neutropenia
4. Refractory thrombocytopenia
5. Refractory anemia with ring sideroblasts (*RARS*)
6. Refractory cytopenia with multilineage dysplasia
7. Refractory anemia with excess blasts
8. Myelodysplastic syndrome with isolated del(5q)
9. Myelodysplastic syndrome, unclassifiable
10. Childhood myelodysplastic syndrome
11. *Provisional entity: refractory cytopenia of childhood*

Acute myeloid leukemia (AML) and related neoplasms

Acute myeloid leukemia with recurrent genetic abnormalities

1. AML with t(8;21)(q22;q22); *RUNX1-RUNX1T1*
2. AML with inv(16)(p13.1q22) or t(16;16)(p13.1;q22); *CBFB-MYH11*
3. APL with t(15;17)(q22;q12); *PML-RARA*
4. AML with t(9;11)(p22;q23); *MLLT3-MLL*
5. AML with t(6;9)(p23;q34); *DEK-NUP214*
6. AML with inv(3)(q21q26.2) or t(3;3)(q21;q26.2); *RPN1-EVI1*
7. AML (megakaryoblastic) with t(1;22)(p13;q13); *RBM15-MKL1*
8. *Provisional entity: AML with mutated NPM1*
9. *Provisional entity: AML with mutated CEBPA*

Acute myeloid leukemia with myelodysplasia-related changes

Therapy-related myeloid neoplasms

Acute myeloid leukemia, not otherwise specified

1. AML with minimal differentiation
2. AML without maturation
3. AML with maturation
4. Acute myelomonocytic leukemia
5. Acute monoblastic/monocytic leukemia
6. Acute erythroid leukemia
 - i. Pure erythroid leukemia
 - ii. Erythroleukemia, erythroid/myeloid
7. Acute megakaryoblastic leukemia
8. Acute basophilic leukemia
9. Acute panmyelosis with myelofibrosis

Myeloid sarcoma

Myeloid proliferations related to Down syndrome

1. Transient abnormal myelopoiesis
2. Myeloid leukemia associated with Down syndrome

Blastic plasmacytoid dendritic cell neoplasm

Acute leukemias of ambiguous lineage

1. Acute undifferentiated leukemia
2. Mixed phenotype acute leukemia with t(9;22)(q34;q11.2); BCR-ABL1
3. Mixed phenotype acute leukemia with t(v;11q23); MLL rearranged
4. Mixed phenotype acute leukemia, B-myeloid, NOS
5. Mixed phenotype acute leukemia, T-myeloid, NOS
6. Provisional entity: natural killer (NK) cell lymphoblastic leukemia/lymphoma

Precursor Lymphoid Neoplasms

B lymphoblastic leukemia / lymphoma (BLL)

- B lymphoblastic leukemia / lymphoma NOS
- BLL with recurrent genetic abnormalities
 1. BLL with t(9;22); bcr-abl1
 2. BLL with t(v;11q23); MLL rearranged
 3. BLL with t(12:21); TEL-AML1 & ETV6-RUNX1
 4. BLL with hyperploidy
 5. BLL with hypodiploidy
 6. BLL with t(5;14); IL3-IGH
 7. BLL with t(1;19); E2A-PBX1 & TCF3-PBX1

T lymphoblastic leukemia / lymphoma

Mature B-Cell Neoplasms

1. Chronic lymphocytic leukemia / small lymphocytic lymphoma
2. B-cell prolymphocytic leukemia
3. Splenic marginal zone lymphoma
4. Hairy cell leukemia
5. Lymphoplasmacytic lymphoma / Waldenstrom macroglobulinemia
6. Heavy chain disease
7. Plasma cell myeloma
8. Solitary plasmacytoma of bone
9. Extramedullary plasmacytoma
10. Extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue (MALT) type
11. Nodal marginal zone lymphoma
12. Follicular lymphoma
13. Primary cutaneous follicular lymphoma
14. Mantle cell lymphoma
15. Diffuse large B-cell lymphoma, NOS (T-cell / histiocyte-rich type; primary CNS type ; primary leg skin type & EBV+ elderly type)
16. Diffuse large B-cell lymphoma with chronic inflammation
17. Lymphomatoid granulomatosis
18. Primary mediastinal large B-cell lymphoma
19. Intravascular large B-cell lymphoma
20. ALK+ large B-cell lymphoma
21. Plasmablastic lymphoma
22. Large B-cell lymphoma associated with HHV8+ Castleman disease
23. Primary effusion lymphoma
24. Burkitt lymphoma
25. B cell lymphoma, unclassifiable, Burkitt-like
26. B cell lymphoma, unclassifiable, Hodgkin lymphoma-like

Mature T-Cell & NK-Cell Neoplasms

1. T-cell prolymphocytic leukemia
2. T-cell large granular lymphocytic leukemia
3. Chronic lymphoproliferative disorder of NK-cells.
4. Aggressive NK-cell leukemia
5. Systemic EBV+ T-cell lymphoproliferative disorder of childhood
6. Hydroa vacciniforme-like lymphoma
7. Adult T-cell lymphoma/leukemia
8. Extranodal T-cell/NK-cell lymphoma, nasal type
9. Enteropathy-associated T-cell lymphoma
10. Hepato-splenic T-cell lymphoma
11. Subcutaneous panniculitis-like T-cell lymphoma
12. Mycosis fungoides
13. Sézary syndrome
14. Primary cutaneous CD30+ T-cell lymphoproliferative disorder
15. Primary cutaneous gamma-delta T-cell lymphoma
16. Peripheral T-cell lymphoma, NOS
17. Angioimmunoblastic T-cell lymphoma
18. Anaplastic large cell lymphoma, ALK+ type
19. Anaplastic large cell lymphoma, ALK- type

Hodgkin lymphoma (Hodgkin disease)

Nodular lymphocyte-predominant Hodgkin lymphomas

Classic Hodgkin lymphomas

1. Nodular sclerosis Hodgkin lymphoma
2. Lymphocyte-rich classic Hodgkin lymphoma
3. Mixed cellularity Hodgkin lymphoma
4. Lymphocyte depletion Hodgkin lymphoma

Post-Transplant Lymphoproliferative Disorders (PTLD)

Plasmacytic hyperplasia

Infectious mononucleosis like PTLD

Polymorphic PTLD

Monomorphic PTLD (B & T/NK cell types)

Classic HD type PTLD

Histiocytic and Dendritic Cell Neoplasms

Histiocytic sarcoma

Langerhans cell histiocytosis

Langerhans cell sarcoma

Interdigitating dendritic cell sarcoma

Follicular dendritic cell sarcoma

Fibroblastic reticular cell tumor

Indeterminate dendritic cell sarcoma

Disseminated juvenile xanthogranuloma