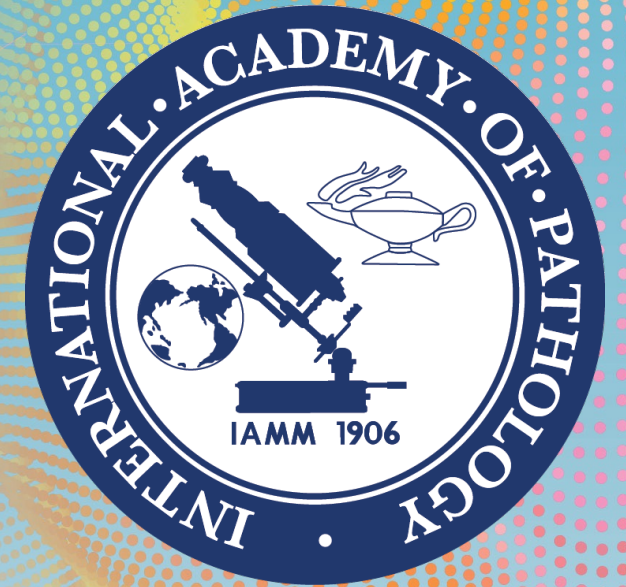


Follicular lymphoma - subtypes and variants

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Follicular lymphoma

- Neoplasm of GC B cells with varying proportions of centrocytes and centroblasts / large transformed cells and at least a partial follicular / nodular growth pattern.
- If entirely diffuse growth pattern, the neoplastic cells should still show GC B-cell morphology and immunophenotype.
- Harbour the t(14;18)(q32;q21) translocation in about 85% of cases.

Subtypes / entities / variants / patterns...

Subtypes (WHO)

Classic FL (cFL)

FL with unusual cytological features (uFL)

FL with a predominantly diffuse growth pattern (dFL)

Follicular Large B-cell lymphoma (FLBCL)

Others

In situ follicular B-cell neoplasm

Paediatric type FL

Duodenal type FL

Primary cutaneous follicle centre cell

Primary testicular

FL with Castleman-like features

FL with plasmacytic differentiation (+/-IgG4 positive cells)

FL with marginal zone differentiation

FL with CD10 neg, MUM1 positive with BCL6 abnormalities

FL with EBV

Floral variant and signet ring cell variant

Subtype	cFL	dFL	uFL (a.k.a. FL3U)	FLBCL
Site	<p>Multiple lymph node groups</p> <p>Spleen and marrow, Waldeyers, GIT, other extra nodal sites</p> <p>Usually higher stage presentation</p>	<p>Inguino-pelvic mass; can disseminate</p>	<p>Usually, higher stage presentation with less frequent stage 4 / extranodal disease</p> <p>Multiple lymph node groups</p>	<p>Multiple lymph node groups</p> <p>Exceptionally rare in pure form</p>
Cell composition / morphologic pattern	<p>Mostly centrocytes; some centroblasts and large transformed cells</p>	<p>Sheets of centrocytes; occasional centroblasts can be seen;</p> <p>with frequent sclerosis / fibrosis.</p>	<p>Nodular proliferation / pale follicles of large cleaved centrocytes OR small/medium size immature cells with blastoid chromatin</p> <p>Frequent sclerosis / fibrosis.</p>	<p>Nodules of centroblasts;</p> <p>Commonly seen along with DLBCL than cFL</p>
Other features	<p>Express GC associated markers - CD10, BCL6, GCET1, HGAL (GCET2), LMO2, MEF2B etc.</p> <p>Most are BCL2 positive</p> <p>Most are IRF4 (MUM1) negative</p> <p>Lower Ki67 index than reactive follicles</p>	<p>No FDC / only micro follicles</p> <p>CD23 expression is common</p> <p>BCL2 weak / absent.</p> <p>Copy number losses of 1p36 locus; Mutations of TNF receptor superfamily member 14 (TNFRSF14) and STAT6 mutation</p>	<p>Higher than usual Ki67 index</p> <p>Higher than usual MUM1 expression; require Negative IRF4 FISH testing if MUM1 is strongly expressed</p> <p>Lower BCL2-R, more frequent BCL6-R & MYC-R; higher number of triple negative cases (BCL2, BCL6, MYC) when compared to FL3A</p>	<p>BCL2 translocation is uncommon</p>
t(14;18)(q32;q21) IGH-BCL2	<p>85-90% of cases</p> <p>BCL2-R & CD10 positive</p>	<p>Absent</p>	<p>Lower than usual BCL2 rearrangement</p>	<p>Only in a few cases</p>
Prognosis		<p>Limited stage disease with fav prognosis</p>	<p>May have different prognosis than cFL (worse survival than FL1-2; LCC FL seems to have the Px of FL3A/FL3B).</p>	

Paediatric	Duodenal	Primary cutaneous follicle centre cell	Primary testicular
<ul style="list-style-type: none"> • Young age (18M) • Low-stage disease (I/II) • Head and neck region • GCB cells in pure follicular growth (no diffuse areas) • No sclerosis / necrosis • High histological grade (blastoid cells) • High Ki67 • Absence of BCL2, BCL6, MYC and IRF4 rearrangement • Deletions & copy neutral LOH at 1p36 (mutations of MAP2K1 and TNFRSF14). • High cure rate with surgery alone 	<ul style="list-style-type: none"> • D2 – and rest of GIT • Usually limited to mucosa/submucosa • Pathogenesis is similar to nodal/systemic FL; mutation profile is reminiscent of in-situ FL • cFL morphology • “glove balloon” villi • t(14;18)(q32;q21) (IGH::BCL2) • Low grade indolent disease • Excellent outcome 	<ul style="list-style-type: none"> • Skin of head and neck or trunk • Middle age • No systemic / nodal involvement • Rarely show BCL2-R 	<ul style="list-style-type: none"> • Young age • Very similar to paediatric type • Very rare

Thank you...

Ref: WHO Haematolymphoid tumours (5th ed.

