

In cutaneous T-cell lymphoma (CTCL) subtypes Mycosis Fungoides (MF) and Sézary Syndrome (SS)

Importance of assessing blood involvement in CTCL

CTCL is a heterogeneous group of T-cell lymphomas with primary skin involvement.

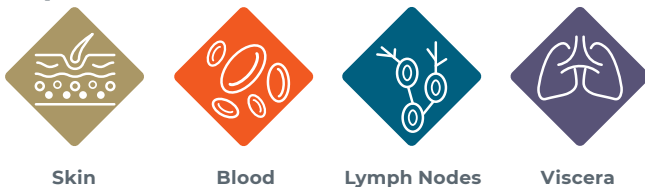
Together, Mycosis Fungoides and Sézary Syndrome are the most common subtypes of CTCL in which patients present with a diverse range of skin symptoms and varying extents of extracutaneous disease.¹⁻³

About Mycosis Fungoides and Sézary Syndrome

Mycosis Fungoides: Most common CTCL subtype; may be indolent with skin-only symptoms (patches, plaques, tumors); may progress to blood, lymph nodes, and viscera^{1,4}

Sézary Syndrome: Aggressive CTCL subtype; presents with high (B2) blood involvement and patients typically have erythroderma and intense pruritus; lymph nodes may also be involved^{1,5}

CTCL can affect multiple disease compartments⁶



No single diagnostic test is available for Mycosis Fungoides and Sézary Syndrome. A full workup with evaluation of the 4 compartments—including blood—is important for differential diagnosis and staging⁷

Measuring blood involvement aids in⁷:

- Providing accurate diagnosis and staging
- Informing prognosis
- Guiding treatment approach

Blood is integral to staging and diagnosing

Mycosis Fungoides and Sézary Syndrome stage is determined by evaluating the level of involvement in 4 disease compartments: skin (T), lymph nodes (N), viscera (M), and blood (B)⁷

TNMB classification for Mycosis Fungoides / Sézary Syndrome⁷

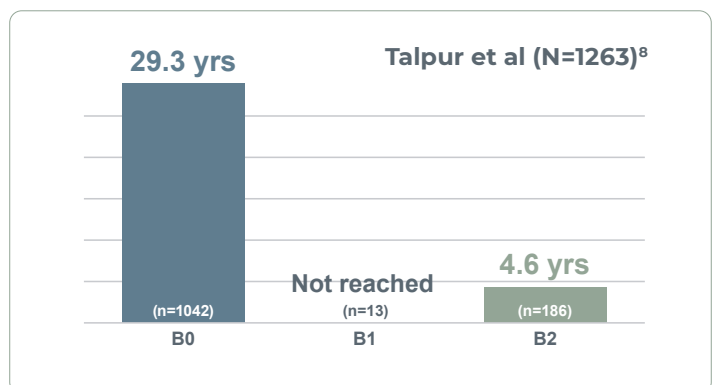
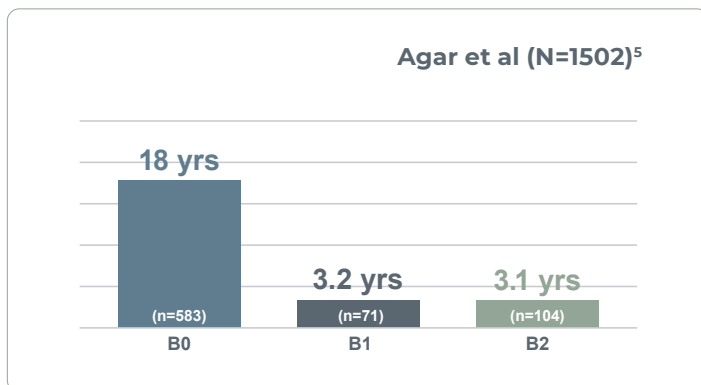
		T	N	M	B	
Early stage	IA	1	0	0	0,1	MF
	IB	2	0	0	0,1	
	IIA	1,2	1,2	0	0,1	
Tumor stage	IIB	3	1-2	0	0,1	MF
	IIIA	4	0-2	0	0	
Erythrodermic disease	IIIB	4	0-2	0	1	MF
	IV _{A1}	1-4	0-2	0	2	
	IV _{A2}	1-4	3	0	0-2	MF or SS
	IVB	1-4	0-3	1	0-2	Visceral disease

Blood can be involved at early stages of Mycosis Fungoides⁴

- 1 in 5 patients with early-stage (IA-IIA) Mycosis Fungoides have B1 blood involvement^{4,a}

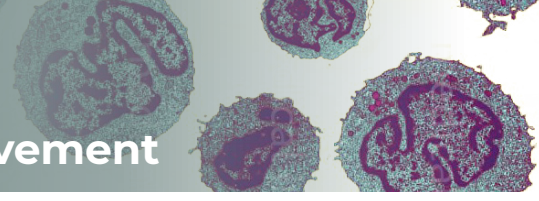
^aBased on a PROCLIP (Prospective Cutaneous Lymphoma International Prognostic Index) study that analyzed hematological data from 348 patients with early-stage Mycosis Fungoides.⁴

Blood involvement has been associated with poorer outcomes^{5,8} Two studies showing median overall survival (years) by blood classification



References: 1. Willemze R, Cerroni L, Kempf W, et al. *Blood*. 2019;133(16):1703-1714. 2. Cerroni L. Mycosis fungoides—clinical and histopathologic features, differential diagnosis, and treatment. *Semin Cutan Med Surg*. 2018;37(1):2-10. 3. NIH-National Cancer Institute: SEER Program: <https://seer.cancer.gov/seertools/hemelymph/51f6cf56e3e27c3994bd52e2/>. Accessed 1/6/2023. 4. Scarisbrick JJ, Quaglino P, Prince HM, et al. *Br J Dermatol*. 2019;181(2):231-232. 5. Agar NS, Wedgeworth E, Crichton S, et al. *J Clin Oncol*. 2010;28(31):4730-4739. 6. Olsen EA, Whittaker S, Willemze R, et al. *Blood*. 2022;140(5):419-437. 7. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines[®]) for Primary Cutaneous Lymphomas V.2.2022. © National Comprehensive Cancer Network, Inc. 2022. All rights reserved. Accessed October 1, 2022. To view the most recent and complete version of the guideline, go online to NCCN.org. 8. Talpur R, Singh L, Daulat S, et al. *Clin Cancer Res*. 2012;18(18):5051-5060.

In cutaneous T-cell lymphoma (CTCL) subtypes Mycosis Fungoides (MF) and Sézary Syndrome (SS) Considerations when assessing blood involvement



Flow cytometry is recommended for measuring blood involvement¹

- Provides qualitative and quantitative measures of abnormal T-cells in blood^{2,3}
- T-cells in the blood sample are labeled using antibodies linked to colored fluorescent dyes and counted by flow cytometer⁴

Flow cytometry is:

- Robust⁵
- Consistent⁷
- Quantifiable⁶
- Increasingly used⁶
- Objective⁶
- Technologically precise^{8,9}

The International Guidelines recommend a minimum of 6 panel markers¹⁰

No single T-cell marker alone can accurately identify Sézary cells. Diagnosis is highly dependent on evaluation of multiple T-cell markers combined in a single-tube flow cytometry assay¹⁰

CD3 Identification of all T-cells; usually positive on Sézary cells	CD4 Identification of major T-cell subsets; usually positive on Sézary cells	CD8 Identification of major T-cell subsets; usually negative on Sézary cells
CD45 Identification of lymphocytes; usually positive expression on Sézary cells	CD7 Detection of Sézary cells; usually negative on Sézary cells	CD26 Detection of Sézary cells; usually negative on Sézary cells

CD4+/CD7- and/or CD4+/CD26- are common phenotypes seen in Mycosis Fungoides and Sézary Syndrome¹⁰

Consensus guidance on when to consider flow cytometry⁶

At diagnosis	
Flow cytometry can aid in:	
<ul style="list-style-type: none"> • Accurate diagnosis, staging, and informing prognosis 	<ul style="list-style-type: none"> • Establishing baseline for monitoring changes in blood burden over time • Guiding treatment approach
When clinical triggers appear	
<ul style="list-style-type: none"> • In the case of disease/ stage progression • Patients with advanced disease (stage IIB and above) • Intractable pruritus 	<ul style="list-style-type: none"> • Generalized patches and/or plaques (T2A/T2B) • Erythroderma • Lymphocytosis on WBC • High serum LDH • Lack of response to treatment
How often to consider flow cytometry?	
<ul style="list-style-type: none"> • Every 3 months in patients with abnormal flow cytometry at baseline, if practical 	<ul style="list-style-type: none"> • Upon development of any clinical triggers

Important Considerations When Ordering Flow Cytometry

- Specify Mycosis Fungoides / Sézary Syndrome**
 Specifying suspicion of Mycosis Fungoides or Sézary Syndrome helps the lab to choose the appropriate flow panel²
- Include clinical details**
 Including a detailed description of clinical history and observations, along with any existing diagnosis, will be helpful with interpreting results^{2,10}

- Use the same flow center**
 Sending samples to the same flow center for sequential testing may help ensure consistency in flow methodology and the report summary^{8,10}
- Consider consultation**
 Consultation with CTCL specialists is recommended for diagnosis and staging, and for optimal patient management¹¹

To learn more visit www.PROBEinCTCL.com

PROBE IN CTCL

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References: 1. Olsen EA, Whittaker S, Willemsz R, et al. *Blood*. 2022;140:419-437. 2. Illingworth A, Johansson U, Huang S, et al. *Cytometry B Clin Cytom*. 2021;100(2):156-182. 3. Craig F. *Cytometry B Clin Cytom*. 2021;100(2):125-128. 4. McKinnon KM. *Curr Protoc Immunol*. 2018;120:5.1.1-5.1.11. 5. Tembhare PR, Chatterjee G, Chaturvedi C, et al. *Front Onc*. 2022;12:779230. 6. Vermeer MH, Moins-Teisserenc H, Bagot M, et al. *Br J Dermatol*. 2022;187(1):21-28. 7. Vermeer MH, Nicolay JP, Scarisbrick JJ, Zinzani PL. *Br J Dermatol*. 2021;185(1):19-25. 8. Guitart J. *Cytometry B Clin Cytom*. 2021;100(2):129-131. 9. Craig FE, Foon KA. *Blood*. 2008;111(8):3941-3967. 10. Horna P, et al. *Cytometry B Clin Cytom*. 2021;100(2):142-155. 11. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Primary Cutaneous Lymphomas V.2.2022. ©National Comprehensive Cancer Network, Inc. 2022. All rights reserved. Accessed October 1, 2022. To view the most recent and complete version of the guideline, go online to NCCN.org.