

LABORATORY CORRELATES AND RESPONSE PATTERNS IN EGYPTIAN PATIENTS WITH MYCOSIS FUNGOIDES: A COHORT ANALYSIS WITH LDH, NLR, AND TWO-MARKER RULE

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INTRODUCTION

Mycosis fungoides is the most common variant of the cutaneous T-cell lymphomas.

Assessment of a patient with a suspected diagnosis requires thorough history taking and physical examination, in combination with skin biopsy.

AIM

To evaluate the associations between routine laboratory parameters and clinical outcomes in patients with MF; assess the diagnostic and prognostic performance of LDH-, neutrophil/lymphocyte ratio-, and combined LDH+NLR-based rules for distinguishing treatment response patterns in a real-world cohort.

METHOD

- This was a retrospective, single-center cohort study analyzing patients diagnosed with MF. Dermatological symptoms were first discovered between 1996–2024, with diagnoses confirmed between 2006–2024; follow-up extended to February 2025.
- LDH, ALC, ANC, NLR and treatment response categories were abstracted from medical electronic records. Observers were not blinded to patient characteristics during clinical assessments; however, analyses used coded data without access to identifiers.

RESULTS

- This study included 40 patients with confirmed MF diagnosis [M/F: 21/19; median age 48.2 years] and available follow-up data. Based on the study timestamps, median follow-up duration was 24.3 months (range, 1.9–140.8).
- CBC internal consistency was strong; LDH correlated with leukocyte measures. LDH was lower (<250 U/L) among patients who achieved CR ($P < 0.032$) [Fig1.]; an LDH rule (≤ 231 U/L) yielded high sensitivity and strong negative predictive value (NPV) [80% and 89%, respectively], While an AND rule ($LDH \leq 231$ & $NLR \leq 1.3$) improved specificity and illustrated a high positive predictive value (PPV) [95.7% and 75%, respectively] [Table1]. The two-marker logistic model had an overall discrimination [AUC 0.75] comparable to LDH alone [fig2.], highlighting complementary utility: LDH for broad screening and the combined rule for confident confirmation of responders.

Table 1. Cutoffs for Response analysis (CR versus Non-

Variable	Cutoff	Sensitivity	specificity	NPV	PPV	AUC
LDH	≤ 231	80%	70%	89%	53%	0.75
NLR	≤ 1.30	40%	78%	75%	44%	0.60
Combined Rule (LDH + NLR)	Both	30%	95.70%	76%	75%	0.75

* NPV: Negative predictive value, PPV: Positive predictive value, AUC: Area Under the Curve, LDH: Lactate Dehydrogenase, NLR: Neutrophil-to-Lymphocyte Ratio

Figure 1. Corr plot showing the correlation between LDH and different response categories in MF cohort

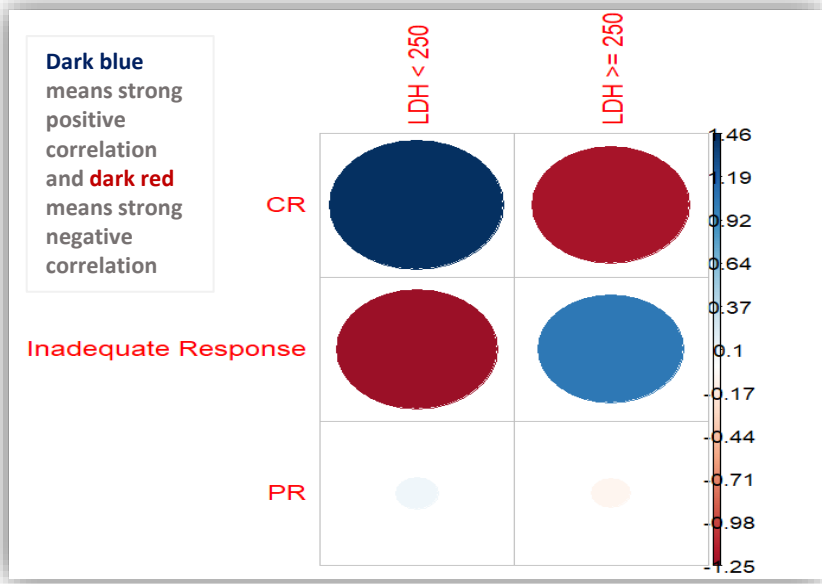
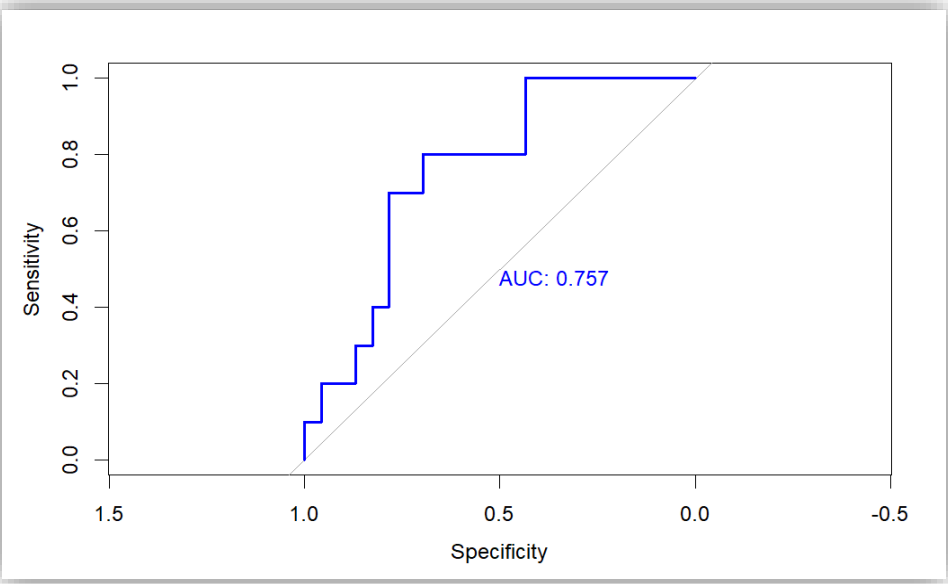


Figure 2. ROC curve showing the predictive ability of combined rule of LDH with NLR in MF patients



CONCLUSION

- LDH remains a strong laboratory correlate of response.
- NLR adds value for rule-in stringency.
- The combined use supports patient stratification, pending validation.

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