Title:

Diagnostic potential of metastasis-associated-lung-adenocarcinoma-transcript-١ (MALAT-١) and TNFα and hnRNPL related immunoregulatory long non-coding RNA (THRIL) in systemic lupus erythematosus patients: Relation to disease activity.

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Abstract:
Aimof the work: to determine expression levels and diagnostic value of metastasis-associated-lung-adenocarcinoma-transcript-١ (MALAT-١) and TNFα and hnRNPL related immunoregulatory long non-coding RNA (THRIL) in systemic lupus erythematosus (SLE), and to assess their role in the clinical characteristics of SLE and disease activity. *Patients and methods*: Study included ٤٠ patients with SLE and ٣٠ matched controls. SLE Disease Activity Index (SLEDAI) score was assessed. Expression levels of MALAT-١ and THRIL were detected in the serum by using Real-time polymerase chain reaction and $٢^{-\Delta\Delta CT}$ method. *Results:* mean age of patients was ٤٠.١±٩ years (٢٥-٥٥ years), they were ٣٨ females and ٢ males and disease duration was ١٦.٥±٣.٩ years. Their mean SLEDAI was ٥.٨±٥.٣. Expression levels of MALAT-١ and THRIL were found to be significantly upregulated in the serum of SLE patients compared with controls (set as ١). MALAT-١ fold change= ٣.٧±٣.٨ (p=٠.٠٠٩), and THRIL fold change= ٣.٦±٣.٤ (p=٠.٠٢٦). There were significant correlations between MALAT-١ with THRILL (r=٠.٤٤, p=٠.٠٠٥), proteinuria (r=٠.٤٥, p=٠.٠٠٦), erythrocyte sedimentation rate (r=٠.٤٣, p=٠.٠٠٦) and SLEDAI (r=٠.٣٦, p=٠.٠٢٤). No significant correlations were found between THRIL and study parameters. Sensitivity and specificity of MALAT-١ and THRIL were determined (sensitivity ٦٧.٥% and ٦٥% respectively),(specificity ١٠٠% for both, total accuracy ٨٠% and ٨١.٤% respectively), and the combined effect of both increased sensitivity and total accuracy to ٧٠% and ٨٢.٩% respectively. THRIL was a significant predictor for SLE disease (p= ٠.٠٢). *Conclusion*: MALAT-١ and THRIL may be potential diagnostic biomarkers for SLE and only MALAT-١ may be valuable in detecting disease activity.