Diagnostic potential of metastasis-associated-lung-adenocarcinomatranscript-1 (MALAT-1) and TNFa and hnRNPL related immunoregulatory long non-coding RNA (THRIL) in systemic lupus erythematosus patients: Relation to disease activity.

Abstract:
Aim of the work: to determine expression levels and diagnostic value of metastasis-associated-lung-adenocarcinoma-transcript-1 (MALAT-1) 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 40 patients with SLE and 30 matched controls. SLE Disease Activity Index (SLEDAI) score was assessed. Expression levels of MALAT-1 and THRIL were detected in the serum by using Real-time polymerase chain reaction and 2-ΔΔCT method. Results: mean age of patients was 40.1±9 years (25-55 years), they were 38 females and 2 males and disease duration was 16.5±3.9 years. Their mean SLEDAI was 5.8±5.3. Expression levels of MALAT-1 and THRIL were found to be significantly upregulated in the serum of SLE patients compared with controls (set as 1). MALAT-1 fold change= 3.7±3.8 (p=0.009), and THRIL fold change= 3.6±3.4 (p=0.026). There were significant correlations between MALAT-1 with THRILL (r=0.44, p=0.005), proteinuria (r=0.45, p=0.006), erythrocyte sedimentation rate (r=0.43, p=0.006) and SLEDAI (r=0.36, p=0.024). No significant correlations were found between THRIL and study parameters. Sensitivity and specificity of MALAT-1 and THRIL were determined (sensitivity 67.5% and 65% respectively), (specificity 100% for both, total accuracy 80% and 81.4% respectively), and the combined effect of both increased sensitivity and total accuracy to 70% and 82.9% respectively. THRIL was a significant predictor for SLE disease (p= 0.02). Conclusion: MALAT-1 and THRIL may be potential diagnostic biomarkers for SLE and only MALAT-1 may be valuable in detecting disease activity.