LncRNAs, MALAT1 and lnc-DC as potential biomarkers for multiple sclerosis diagnosis.

31/1/2019

Abstract

Long non-coding RNAs (lncRNAs) play an important role in gene regulation and show greatertissue specificity and complexity of biological functions. There is on-going research in theircontribution in autoimmune diseases like multiple sclerosis (MS). Our study aimed at theevaluation of serum levels of lncRNAs, MALAT1 and lnc-DC in MS patients and the investigation of the association between these lncRNAs and the disease activity. Serum from45 MS patients and 45 healthy controls was separated. MALAT1 and lnc-DC expression levels were assayed by qRT-PCR. MALAT1 and lnc-DC were significantly increased in MS patients (P=0.004 and P=0.006, respectively) in comparison with controls. There was a significantincrease in expression of MALAT1 in secondary progressive MS (SPMS) subgroup compared with controls (P<0.0001); however, significant elevation of lnc-DC was demonstrated in relapsing remitting MS (RRMS) subtype (P=0.003) compared with normal controls.

A positive association between the expression levels of MALAT1 and lnc-DC (r = 0.513, P <0.0001) in MS patients was detected. Moreover, positive correlation was observed between MALAT1and lnc-DC in RRMS (r = 0.569, P = 0.001). Serum levels of MALAT1 and lnc-DC may serve as potential novel molecular biomarkers for MS diagnosis and may provide a new direction for its treatment.