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

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Abstract

Longnon-codingRNAs(lncRNAs)playanimportantroleingeneregulationandshowgreater tissue specificity and complexity of biological functions. There is on-going research in their contribution in autoimmune diseases like multiple sclerosis (MS). Our study aimed at the evaluation 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 from 45 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) incomparison withcontrols. There was asignificant increase in expression of MALAT1 in secondary progressive MS (SPMS) subgroup compared with controls (P<0.0001); however, significant elevation of lnc-DC was demonstratedinrelapsingremittingMS(RRMS)subtype(P=0.003)comparedwit hnormalcontrols. Apositiveassociation betweentheexpression levelsofMALAT1 andlnc-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 mayserveaspotentialnovelmolecularbiomarkersforMSdiagnosisandmayprovi deanew direction for its treatment.