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MicroRNA 26a Expression in Peripheral Blood Mononuclear Cells and Correlation with Serum Interleukin-17 in Relapsing-Remitting Multiple Sclerosis Patients

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Multiple sclerosis (MS) is a chronic multifocal inflammatory demyelinating disease. One of the main cells that play a crucial role in pathogenesis of MS is T helper 17 (Th 17). There are growing interests in nominating microRNAs in Th17 cell differentiation and suggesting new therapeutic modalities. The aim of the study was to assess microRNA 26a (miR26a) expression in peripheral blood mononuclear cells of relapsing - remitting MS patients as compared to healthy control subjects and examine association of these levels with serum IL17. Forty (40) relapsing - remitting MS patients were enrolled based on the MacDonald criteria (20 in relapsing phase and 20 in remitting phase). In addition, twenty (20) healthy control subjects were included. Blood samples were subjected to quantitative polymerase chain reaction (qPCR) for miR26a and ELISA for serum IL 17 levels. A significant upregulation of miR26a relative expression level (ΔΔ Ct) and serum IL17 level (pg/ml) was found in total MS patients and remitting MS patients when compared with controls (*P*<0.001). Among the relapsing group, a significant increase in miR26a expression levels (*P*= 0.004) but not serum IL17 level was demonstrated. Insignificant correlation between miR26a expression and serum IL17 in MS patients was detected (r= 0.08, *P*= 0.62). In conclusion, a significant increase of these two biomarkers (miR26a & IL17) occurs in relapsing – remitting MS patients, and this reflects their important role in pathogenesis and disease development.