GMR Genetics and Molecular Research
Online Journal
ISSN:1676-5680

Analysis of the expression of HMGB-1, CXCL16, miRNA-30a, and TGF-β1 in primary nephritic syndrome patients and its significance

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Genet. Mol. Res. 14 (3): 9841-9848 (2015)
Received December 17, 2014
Accepted May 29, 2015
Published August 19, 2015
DOI http://dx.doi.org/10.4238/2015.August.19.17

ABSTRACT. We investigated the expression levels of high-mobility group box protein 1 (HMGB-1), CXC chemokine ligand 16 (CXCL16), microRNA (miRNA)-30a and transforming growth factor β1 (TGF-β1) in primary nephritic syndrome (PNS) patients and the clinical significance of this expression. A total of 56 patients with PNS were included in the PNS group, while 50 healthy subjects formed the normal control group. Serum levels of HMGB-1, CXCL16, miRNA-30a, and urinary TGF-β1 concentrations were quantified along with other biochemical indices, including serum albumin, triglyceride (TG), total cholesterol (TC), low-density lipoprotein (LDL), high-density lipoprotein, and urinary proteins. The correlation between levels of HMGB-1, CXCL16, miRNA-30a, and TGF-β1 and biochemical indexes was further analyzed. PNS group

patients had significantly higher levels of HMGB-1, CXCL16, miRNA-30a, and TGF-β1 compared to the control group ($P < 0.05$). PNS patients also had higher 24-h urinary protein, TG, TC, and LDL levels but lower serum albumin compared to subjects in the control group ($P < 0.05$). Serum HMGB-1, CXCL16, miRNA-30a, and urinary TGF-β1 levels were all negatively correlated with serum albumin levels, but were positively correlated with TG, TC, LDL, and 24-h urinary protein ($P < 0.05$ in all cases). Additionally, a positive correlation existed among serum HMGB-1, CXCL16, miRNA-30a, and urinary TGF-β1 levels ($P < 0.01$). HMGB-1, CXCL16, miRNA-30a, and urinary TGF-β1 were highly expressed in PNS patients and may play important roles in the pathogenesis and development of PNS.

Key words: High-mobility group box protein 1; MicroRNA-30a; CXC chemokine ligand 16; Primary nephritic syndrome; Transforming growth factor-β1

