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BLys expression and function in Lupus

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Sylvie Fournel,[Aff1]

Aff1 CNRS, Strasbourg, France

Keywords

B cell, BLyS, SLE

Context

B lymphocyte stimulator (BLyS), also called BAFF, TALL-1 and zTNF4, is a newly identified member in the tumor necrosis factor (TNF) family that exhibits a strong costimulatory function for B cell activation in vitro. BLyS-transgenic mice develop severe B cell hyperplasia and autoimmune lupus-like disease. Moreover, in two murine models of human systemic lupus erythematosus (SLE), MRL/Mp-lpr/lpr and NZB/W F1 mice, increased serum levels of BLyS seem to correlate with autoimmune kidney damage. Knowing that treatment with the soluble BLyS receptor significantly improves the survival of lupus mice, the authors examined the serum level and function of BLyS in the patients with SLE.

Significant findings

BLyS was increased in sera and plasma of 150 patients of SLE in comparison with 38 normal control patients. Interestingly, BLyS levels in the sera of 44 patients with rheumatoid arthritis (RA) and the synovial fluids of 57 RA patients were also significantly higher than levels in normal sera. In SLE patients, BLyS exerted a costimulatory effect when B cells were activated by anti-IgM antibodies. Finally, the increased level of BLyS in SLE patients was associated with an increased production of anti-dsDNA antibody, which may participate in disease pathogenesis, but was not associated with production of other antinuclear protein antibodies.

Comments

These results confirm results obtained in lupus-prone mice and provide new clues as to how B cells may contribute to the development of systemic autoimmune disease. Indeed, the high level of BLyS may explain the low activation threshold of B cells in lupus. Moreover, the identification of specific cell

subsets (eg monocytes, macrophages and dendritic cells) which express BLyS in SLE provide further insight into the pathogenesis of SLE.

Methods

ELISA, immunoprecipitation, cell proliferation

Additional information

References

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