AUTOIMMUNE CONNECTIVE TISSUE DISEASES

MONITORING OF SERUM TWEAK LEVELS GUIDES GLUCOCORTICOID DOSAGES IN THE TREATMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Tumor necrosis factor-like weak inducer of apoptosis (TWEAK) is a proinflammatory cytokine participating in the pathogenesis of systemic lupus erythematosus (SLE).

Objective: This study was designed to explore the relationship between serum TWEAK and SLE disease activity index (SLEDAI) as well as its role in guiding glucocorticoid dosages in the treatment of SLE.

Materials and Methods: Soluble TWEAK was determined in both serum and urine samples of lupus patients or healthy donors. Monomeric C reactive protein, anti-nuclear antibody, interleukin 6, complements, erythrocyte sedimentation rate, and white blood cells were measured in serum samples. Moreover, SLE disease activity index (SLEDAI)-2K was used for evaluating the disease. Finally, methylprednisolone was administrated orally to SLE patients with the doses depending on serum TWEAK levels.

Results: We found that serum TWEAK levels are higher in patients with SLE or subacute cutaneous lupus erythematosus than patients with discoid lupus erythematosus or healthy controls. Also, serum TWEAK levels correlates positively with SLEDAI-2K in patients with SLE while urine TWEAK levels reflect renal damage in patients with lupus nephritis. Moreover, serum TWEAK had higher correlation coefficient with SLEDAI-2K scores compared to the other serum parameters. Furthermore, TWEAK-based glucocorticoid therapy is associated with lower SLEDAI-2K scores and less flares in patients with SLE.

Conclusions: In conclusion, serum TWEAK is a useful biomarker reflecting SLE disease, and monitoring of serum TWEAK can improve the outcomes of glucocorticoid therapy for patients with SLE.