

The association between the concentrations of TSP-1 in synovial fluid and serum and early-stage damage to knee joint cartilage

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INTRODUCTION: Currently, there is a dearth of early diagnostic modalities for osteoarthritis, thus highlighting the potential of biomarkers as a promising avenue for addressing this issue. Investigating the relationship between the concentration of thrombospondin-1 (TSP-1) and early-stage damage to knee joint cartilage.

METHODS: TSP-1 concentrations in the synovial fluid and serum were quantified via enzyme-linked immunosorbent assay (ELISA) in a cohort of 80 knee osteoarthritis (OA) patients. The extent of knee joint cartilage damage was assessed using the Outerbridge grading system during arthroscopic examination. Statistical analysis included t-tests and Spearman correlation analysis. This study has been approved by the Ethics Committee of the Second Hospital of Shanxi Medical University, with the reference number: 2019YX260.

RESULTS SECTION: The concentration of TSP-1 in the synovial fluid of patients with OA decreases in tandem with the severity of OA, exhibiting a negative correlation with the Outerbridge score ($r=-0.607$). Likewise, the serum TSP-1 concentration in OA patients diminishes as the severity of OA escalates, demonstrating a negative correlation with the Outerbridge score ($r=-0.689$), consistent with the findings in the synovial fluid.

DISCUSSION: The concentration of TSP-1 in the synovial fluid of patients with OA decreases in tandem with the severity of OA, exhibiting a negative correlation with the Outerbridge score ($r=-0.607$). Likewise, the serum TSP-1 concentration in OA patients diminishes as the severity of OA escalates, demonstrating a negative correlation with the Outerbridge score ($r=-0.689$), consistent with the findings in the synovial fluid.

SIGNIFICANCE/CLINICAL RELEVANCE: This study provides a new direction and approach for the early diagnosis of OA in clinical practice.

REFERENCES: Not Applicable

ACKNOWLEDGEMENTS: Not Applicable

IMAGES AND TABLES:

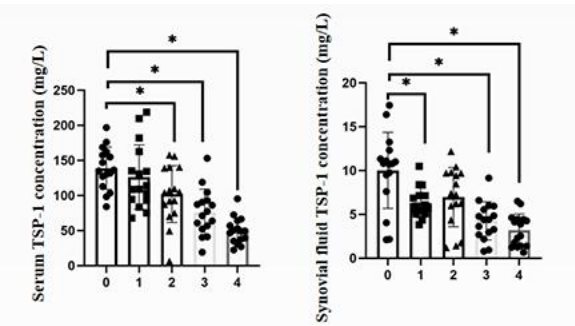


Figure1: TSP-1 changes with OA process

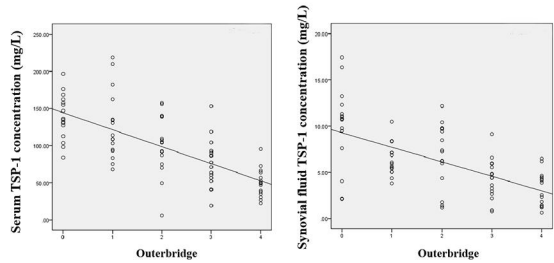


Figure1: The correlation between TSP-1 and the severity of OA