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BIOMARKERS OF BONE MATRIX GLYCOPROTEINS AND INFLAMMATORY CYTOKINES FROM SAUDI PARKINSON PATIENTS

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Introduction: Parkinson's disease (PD) is the second most common neurodegenerative disorder after Alzheimer's disease affecting approximately 1% of the population older than 50 years. Both inflammatory and bone biomarkers have become valuable tools for PD diagnosis and prognosis. However, no studies have examined these markers in Saudi PD patients.

Aim: To identify diagnostic and prognostic biomarkers for PD in serum.

Methodology & Subjects: We included 26 PD patients and 24 controls. Blood samples were collected from PD patients and their match controls, and then biomarkers multiplex assay from Milliplex was used to assess the levels of IL-1B, IL-6, TNF-α, Osteoprotegerin (OPG), Osteopontin (OPN), and PTH (parathyroid hormone). Data were analyzed using the Statistical Package, Graph Pad Prism.

Results: We found that levels of PTH were decreased in the PD subjects than the age-matched controls (p-value=0.003). Also, the bone matrix glycoproteins including osteoprotegerin (OPG) and osteopontin (OPN), were significantly up-regulated (p-value=0.04 for OPG and p-value=0.003 for OPN), as compared to the controls. We also found that IL-1ß cytokine was significantly higher in PD patients (p-value=0.0014). However, no significant statistically differences were found between the two studied groups in the IL-6 and TNF-α cytokines levels.

Conclusion: These findings are consistent with the possibility that inflammatory and bone markers can be used as biomarkers in PD. Though, further studies in a larger cohort are needed to reveal the natural role and significance of these markers in PD pathology.

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