PUD-13

CLINICAL SIGNIFICANCE OF SERUM LEVELS OF MATRIX METALLOPROTEINASE-9 (MMP-9), TISSUE INHIBITOR OF METALLOPROTEINASE-1 (TIMP-1) AND THEIR MOLAR RATIO IN PATIENTS WITH ASTHMA AND COPD

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BACKGROUND/AIMS: Asthma and chronic obstructive pulmonary disease (COPD) are highly prevalent, chronic inflammatory lung diseases with extracellular matrix remodeling and collagen deposition. This study aimed to determine serum levels of MMP-9, TIMP-1 and MMP-9 enzymatic activity in patients with asthma and COPD, and to evaluate their relationship with airway obstruction.

METHODS: The study was conducted on 20 asthmatics, 20 COPD patients and 20 healthy controls. Serum MMP-9 & TIMP-1 levels were measured and MMP-9/TIMP-1 molar ratios were calculated. Gelatin zymography was used to detect enzymatic activity of MMP-9. **RESULTS:** The study revealed that serum MMP-9 levels were significantly correlated with gelatinase activities in asthmatics and COPD patients. Serum levels of TIMP-1 were significantly higher in asthmatics and COPD patients than in controls and were negatively correlated with predicted FEV1%. However, MMP-9/TIMP-1 molar ratios were lower in patients than in controls and were positively correlated with predicted FEV1%.

DISCUSSION/CONCLUSIONS: Serum TIMP-1 and MMP-9/TIMP-1 molar ratio are useful noninvasive markers of airway obstruction in asthmatics and/or COPD patients. Our results may throw light on the role of MMP-9/ TIMP-1 imbalance in the pathogenesis of asthma and COPD. However, further investigations are necessary to determine whether these biomarkers could predict the clinical response to therapy. These data also identify specific MMP inhibition as appropriate target for therapeutic intervention in asthma and COPD.

Keywords: Metalloproteinases, Asthma, COPD