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The Importance of Serum Procalcitonin Levels in Patients with Chronic Obstructive Pulmonary Disease Exacerbations

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Abstract: Aim: Chronic obstructive pulmonary disease (COPD) is a preventable and treatable, but progressive disease and hospital admissions of patients with COPD are frequently due to acute exacerbations. Acute phase reactants are capable of demonstrating the inflammation; however, they cannot be employed to make a difference between bacterial and nonbacterial causes of the inflammation. Recently, measurement of procalcitonin (PCT) levels appears to be useful in order to minimize this problem. The aim of this study was to examine whether the treatment arrangements based on serum PCT levels in patients presenting with COPD acute exacerbations will be appropriate or not. Materials and Methods: Nineteen patients with acute exacerbation of COPD and 16 patients with stable COPD as the control group were enrolled in this study. Erythrocyte sedimentation rates (ESR) and complete blood count (CBC) were obtained. Routine biochemical analysis and chest radiographs were examined in all patients. All complaints of the patients were recorded and parameters (hemogram, ESR, serum procalcitonin, hospital stay) were compared. Results: Mean serum PCT levels in COPD patients with exacerbations was 1.8 ng/ml and in stable COPD patients was 0.2 ng/ml. A significant correlation was established between serum procalcitonin (PCT) levels and duration of hospital stay, ESR and sputum purulence ($P = 0.002$, $P = 0.007$ respectively). There was no significant correlation between serum PCT levels, white blood cell count and complaints of patients. Conclusions: We concluded that serum PCT measurements would be effective in guiding the treatment in patients with acute exacerbations of COPD.

Key Words: Procalcitonin, COPD, acute exacerbation, acute phase reactants

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