ACUTE EXACERBATION OF COPD: IMPACT OF CLINICAL, ANAMNESTIC AND FUNCTIONAL PARAMETERS ON THE PREDICTION OF PROBABILITY OF REPEATED HOSPITALIZATION

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Abstract

The aim of study was to develop the model to predict probability of repeated hospitalization due to acute exacerbations (AE) of COPD, using clinical, anamnestic and functional parameters.

Material and methods. There was performed a retrospective analysis of 162 AE COPD in-patient case-records. The anthropometric parameters, medical history, physical examination data, complaints, chest X-RAY, ECG, post-bronchodilator spirometry data were evaluated. In order to predict the integrated effect of the parameters on the probability of repeated hospitalization there was used a procedure, based on a Bayes probabilistic method and Vald sequential analysis.

Results. This analysis confirmed informative and accurate diagnostic significance of pre-selected parameters to determine the risk of multiple hospitalizations in patients with AE COPD. The data obtained allowed to identify five major criteria and eight additional risk factors of re-admission to hospital. The major criteria included: BMI < 19, diabetes, blood eosinophilia, serum C-reactive protein > 13 mg/l, the level of total protein > 80 g/l. The list of additional criteria included smoking, a history of any comorbidity, increased respiratory rate > 20 per minute, the presence of dyspnea, involvement of additional respiratory muscles into breathing; decline of respiratory function below the critical values (FEV1/FVC < 45%, FEV1 < 45%, FVC < 80 % predicted).

Conclusions. Probability of repeated hospitalization due to AE COPD is higher when at least two major or one major and three additional criteria are present. The proposed algorithm would help the practitioner to predict quickly and easily the possibility of repeated severe exacerbation. In case of high risk of multiple hospitalizations it will make a rationale for more active medical intervention.

Key words: COPD exacerbation, prognosis, the risk of hospitalization.

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