Clinical, Functional, Nutritional and Inflammatory Characteristics of COPD Patients with Frequent Exacerbations: A Real-Life Study

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Background: COPD Patients with frequent exacerbations are a high-risk phenotype characterized by accelerated disease progression and increased risk of mortality. However real-world data integrating clinical, functional, inflammatory characteristics with cardiovascular risk profiles are limited.

Aim: To evaluate differences in clinical, functional, inflammatory and cardiovascular risk profiles between COPD patients with and without a history of frequent exacerbations.

Methods: Clinical, functional and inflammatory characteristics of stable COPD patients admitted for pulmonary rehabilitation were retrospectively collected (2021-2024). Ten-year Cardiovascular risk was assessed according to ESC algorithms. Patients with a history of ≥2 moderate and/or ≥1 severe exacerbations in the previous year were defined as frequent exacerbators (F-Ex), whereas those with 0–1 moderate exacerbations and/or no severe events were considered non-frequent exacerbators (NF-Ex).

Results: Out of 275 patients, 103 (37.5%) were F-Ex. They had lower BMI (p= 0.02), increased symptoms burden measured by CAT score (p= 0.002) and reduced FEV1% (p= 0.037) compared with NF-Ex. Regarding systemic inflammation, F-Ex patients had an increased neutrophil and platelet count (p=0.003 and p= 0.033, respectively), a higher Neutrophil-to-Lymphocyte ratio (NLR) (p=0.005) and increased Systemic Inflammation Index (SII) (p< 0.001). Bronchiectasis and congestive heart failure were more prevalent in F-Ex patients (p=0.028 and 0.003 respectively) however no differences in the overall ten-year cardiovascular risk were observed between the two groups (p= 0.730).

Conclusion: F-Ex are a complex COPD phenotype requiring multidimensional assessment and advanced cardiopulmonary risk evaluation in order to optimize targeted therapy.