

Conference Abstract

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Role of metalloproteases in the era of chronic respiratory diseases (CRDs) modern targeted care

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Abstract

CRDs are a leading cause of mortality, encompassing wide range of disease phenotypes. Late pharmacological advances in targeted therapy are increasing the urgency to define best endotype biomarkers. Matrix metalloproteases (MMPs) and their Tissue Inhibitors (TIMPs) have pivotal role in CRDs pathophysiology. This study aims at exploring the role of MMPs in the context of modern CRD therapeutic standards, including biologics and single inhaler triple therapy (SITT).

In this prospective multicentric cross-sectional study patients with stable CRDs -asthma, COPD, bronchiectasis (BE)- were consecutively enrolled from 2019 to 2023. Data were collected at 0, 12 and 24 months. MMPs and TIMPs serum concentration were measured at baseline. Population features, therapy and evolution across timepoints were analyzed, statistical correlations with MMP/TIMPs levels were tested.

489 patients were enrolled, 50.1% males, median age 61.7. 300 (61.3%) were affected by asthma, 201 (41.1%) by COPD, 50 (10.2%) by BE. Mean FEV1 was 79.1%. Exacerbations improved across 12 months (0.84 to 0.50, $p<.001$). 63 (12.0%) patients used SITT, 82.5% affected by COPD. MMPs characterizing COPD subgroup were 1, 3, 7, 10, 12, 13. Higher levels of MMP7 in subjects treated with SITT were found, negatively correlated with FEV1 and 6MWT distance, positively with St. George questionnaire and hospitalizations. MMPs related to asthma were 3, 7, 10, 12, 13 and TIMPs 1, 2. 66 asthma patients (13.5%) were treated with biologic drug (37.9% anti-IL5R), MMP10 and 12 were higher in this group, respectively correlating with LCQ and St. George questionnaires. These results suggest possible role of MMPs as biomarker of disease severity in CRDs.

Footnotes

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