

Pseudomonas aeruginosa virulence factors and immune response during exacerbations and stable phase in bronchiectasis.

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European Respiratory Journal 2024 64(suppl 68): PA2389; DOI:
<https://doi.org/10.1183/13993003.congress-2024.PA2389>

Abstract

Background: Pseudomonas aeruginosa (PA) virulence factors' impact on immune response in Non-Cystic Fibrosis Bronchiectasis (BE) during stable phase and exacerbations (PExs) remains unstudied.

Aim: To compare the immune response of patients and PA virulence factors during stable phase and PExs in patients with BE colonized by PA.

Methods: PA strain were prospectively collected from sputum and serum samples of 7 patient during both stable phase and subsequent PExs. PA counts were obtained and reported as logarithmic scale colony forming units per mL (LogCFU/mL). The number of PA strains secreting virulence factors (ExoS, ExoY, PvdS) was analyzed using RT-qPCR. Serum samples were assessed for immunoglobulin levels (mg/dl) and interleukin levels (pg/mL) using ELISA and Luminex technology. The non-parametric Wilcoxon signed-rank test for paired data was performed.

Results: PA load did not differ between the stable phase and PExs (Fig A). ExoS production increased non-significantly during PExs (Fig B). Serum levels of IL-6, IL-7, IL-10, and IL-1, as well as IgG1 were higher during PExs compared to stable phase (Fig C and Fig D).

Conclusion: Although PA load remained above 4LogCFU/mL in sputum from BE patients regardless of stable phase or PExs, inflammatory cytokine levels increased during PExs. Thus, our data emphasize the importance of targeting not only PA but also inflammation in BE PExs.

Footnotes

Cite this article as Eur Respir J 2024; 64: Suppl. 68, PA2389

This article was presented at the 2024 ERS Congress, in session “Innovative perspectives on cellular mechanisms in lung diseases”.

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