Anti-Pseudomonas aeruginosa IgG antibodies and chronic airway infection in non-CF bronchiectasis

ORAL COMMUNICATION

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RATIONALE
Identification of Pseudomonas aeruginosa (PA) infection status is important in the management of non-cystic fibrosis bronchiectasis. Serum anti-PA IgG antibodies have been proposed to diagnose chronic PA infection.

Methods: Clinically stable bronchiectasis patients were studied prospectively during 12 months. Quantitative sputum cultures were performed every 3 months. Blood samples obtained from all patients were processed for antibody analysis by a validated ELISA kit. The cut-off value for a positive ELISA Unit/10 result was 2.96.

RESULTS
180 patients were enrolled in the study. 127 (70\%) of them had no PA infection, 25 (14\%) had intermittent PA infection and 28 (16\%) had chronic PA infection. Patients with chronic infection had more severe illness (BSI score 14 vs 10 vs 7, \( p<0.001 \)), and higher IgG levels (median 9.4 – IQR 5.03-13.45) when compared to the intermittent PA and no PA groups (1.88 (0.24-2.3) and 1.1 (0.11-2.7) respectively, \( p<0.001 \)). Significant correlations between IgG levels and neutrophil elastase \( (r=0.24, \ p= 0.01) \) and BSI score \( (r=0.2691; \ p=0.0003) \) were found. A positive test result was found in 28/28 (100\%) patients with chronic PA infection, 4/25 (16\%) of patients with intermittent PA and 25/127 (19.7\%) of the patients with no PA. Sensitivity and specificity of the test were 100\% and 79.6\% respectively. AUROC curve was 0.951.

CONCLUSIONS
The accuracy of the anti-PA IgG test to detect chronic PA infection in bronchiectasis patients is very high. These findings may suggest a role of anti-PA IgG antibodies detection in the management of patients with bronchiectasis, especially in those with severe disease.