

## **Anti-Pseudomonas aeruginosa IgG antibodies and chronic airway infection in bronchiectasis**

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### **Abstract**

#### Background

Identification of chronic *Pseudomonas aeruginosa* (PA) infection is important in the management of bronchiectasis, but requires repeated sputum sampling. We hypothesized that serum anti-PA IgG antibodies could diagnose chronic PA infection at a single visit.

#### Methods

Clinically stable bronchiectasis patients were studied prospectively. Chronic PA infection was defined as 2 or more positive sputum samples at least 3 months apart and/or failure to clear PA following eradication treatment. Baseline serum anti-PA IgG was determined by a validated ELISA kit.

#### Results

A total of 408 patients were included. Sixty of them (14.7%) had chronic PA infection and had higher anti-PA IgG levels (median 6.2 vs. 1.3 units,  $p < 0.001$ ). Antibody levels showed direct significant correlations with exacerbation frequency, the bronchiectasis severity index and sputum inflammatory markers. Fifty-seven patients with chronic PA infection had a positive test, giving 95% sensitivity, 74.4% specificity and AUROC of 0.87. During follow-up, 38 patients had a new PA isolation. Eradication at 12 months was achieved in 89.5% of subjects with a negative antibody test and 15.8% of patients with a positive test.

#### Conclusions

Anti-PA IgG test is highly accurate to detect chronic PA infection in bronchiectasis patients. In addition, it may be a marker of disease severity and treatment response.