(Mean (SEM): 0.156 (0.036) vs 0.308 (0.045); $p=0.016$). No difference was apparent in migrating velocity between PiSZ and PiMM neutrophils (Mean (SEM): 0.692 (0.150) vs 0.868 (0.344); $p=0.6480$). The PiMM COPD patients had higher levels of A α -Val³⁶⁰ when compared to PiSZ (Median (IQR): 25.3 (22.6) vs 14.2 (7.75); $p=0.015$) and PiMM (Control) patients (Median IQR: 25.3 (22.6) vs 15.9 (12.1); $p=0.018$). A correlation between alpha-1 antitrypsin level and migrating velocity was observed ($r^2=0.410$, $p=0.003$).

Conclusion Neutrophils from PiSZ patients exhibited a migratory phenotype intermediate between PiZZ and usual COPD patients. Higher levels of A α -Val³⁶⁰ in COPD patients suggest that they have elevated levels of neutrophil elastase activity.

P118 PROCALCITONIN CAN REDUCE ANTIBIOTIC USAGE IN PATIENTS WITH SUSPECTED RESPIRATORY INFECTIONS IN AN ACUTE RESPIRATORY SERVICE

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Introduction Procalcitonin (PCT) guidance can help safely decrease antibiotic exposure in patients with suspected or confirmed respiratory infections.¹ Its use however across UK hospitals remains limited. We set out to see if utilising it in an acute respiratory service will aid consultant decision making and reduce unnecessary antibiotic usage.

Methods A case series of 222 patients with suspected respiratory infections were consecutively included over 3 months. Their records were examined retrospectively. A PCT result of $<0.25 \mu\text{g/L}$ would have suggested no potential need for antibiotics.

Results

- 75 patients (34%) with a COPD exacerbation; 45 (20%) a lower respiratory tract infection; 34 (15%) community acquired pneumonia; 17 (8%) asthma exacerbation; 13 (6%) Hospital acquired pneumonia; 11 (5%) Exacerbation of bronchiectasis; 10 (4%) aspiration pneumonia; 17 (8%) with other conditions, not a primary respiratory infection.
- 172 patients (77%) had a PCT of $<0.25 \mu\text{g/L}$ and 50 (23%) $\geq 0.25 \mu\text{g/L}$.
- In 96 patients (56%) with a low PCT, consultants decided not to prescribe antibiotics: stopped in 56 (33%) and not started in 40 (23%).
- In 76 patients (44%) the consultant prescribed antibiotics: continued in 32 (19%); started in 28 (16%) and in 16 (9%) switched to another antibiotic.
- Bronchiectasis and Aspiration pneumonia patients were more likely to get Antibiotics despite low PCT, 6 patients in both groups (54%) and (60%) respectively.
- Lower respiratory tract infections and Hospital acquired pneumonia patients were less likely to be given antibiotics if the PCT was low, 9 patients (20%) in the first group and 3 (23%) in the second.
- In Patients with a PCT level $\geq 0.25 \mu\text{g/L}$ 45 (90%) received antibiotics.

Conclusion Low levels of Procalcitonin can reduce antibiotic usage in patients admitted with respiratory infections. This could have an effect on reducing the risk of antimicrobial resistance and costs associated with antibiotic prescriptions. Apprehension remains among respiratory physicians in utilising

it as expressed in the number of patients who had antibiotics despite low PCT levels. The validation of the test in conditions like Bronchiectasis and aspiration pneumonia requires further evidence.

REFERENCE

- Christ-Crain M, et al. *Lancet* 2004;363:600–7.

Abstract P118 Figure 1

P119 PICKING UP A BUG BY PICKING YOUR NOSE HAND TO NOSE TRANSMISSION OF STREPTOCOCCUS PNEUMONIAE IN HEALTHY PARTICIPANTS – PILOT STUDY

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Introduction and Objectives *Streptococcus pneumoniae* (pneumococcus) is a leading cause of morbidity and mortality worldwide, causing community acquired pneumonia (CAP), otitis media, bacterial meningitis and septicemia. Respiratory illnesses are reduced by handwashing, but for pneumococcus, the importance of non-aerosolised modes of spread is unknown. Our objective was to investigate the modes of transmission of *S.pneumoniae* from the hands to nose that are able to cause colonisation.

Methods This study examines “hand-to-nose” transmission using a modification of our established controlled human infection model: healthy volunteers were administered pneumococcus (serotype 6B) onto their fingertip or back of their hands in a wet or dry dot, and asked to either sniff the bacterial residue, or make direct contact with the nasal mucosal surface (pick/poke their nose). Colonisation was defined as pneumococcal culture at any time point between day 2 and 9 post exposure.

Results Colonisation rates were highest in those participants who poked their nose with wet pneumococcus (‘wet poke group’ 4/10, 40%), and who sniffed the wet bacteria from the back of the hand (‘wet sniff group’ 3/10, 30%). Drying of the bacteria on the skin before “sniff” or “poke” was associated with low colonisation rates (1/10 and 0/10 respectively). The ‘wet sniff’ technique was further investigated to improve precision of rates, extending the group to 33 participants, of which 6 were positive (18%).