(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

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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%).

Conclusion We have shown that hands can be vehicles for transmission of *Streptococcus pneumoniae* and that wet particles increased transmission. This reinforces the imperative for good hand hygiene especially in populations at risk of invasive pneumococcal disease or pneumonia such as young children, elderly and immunosuppressed people

P120 WHICH SCORING SYSTEM IS BETTER AT PREDICTING LIKELY MORTALITY AND INTENSIVE CARE UNIT (ICU) ADMISSION IN COMMUNITY ACQUIRED PNEUMONIA RELATED SEPSIS?

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Introduction and Aim Sepsis and pneumonia commonly present together, however the preferred clinical scoring system to use is unclear. NEWS (National Early Warning Score) and SIRS (Systemic Inflammatory Response Syndrome) and SOFA (Sequential Organ Failure Assessment) scores can be used to evaluate patients admitted with sepsis. Due to complexity of SOFA scoring, qSOFA has been proposed for routine practice.¹ We compared sepsis scores in patients with community acquired pneumonia related sepsis (CAP sepsis) and compared this to sepsis from other causes (non-CAP sepsis). We also evaluated how sepsis scoring systems compared with the CURB-65 score to predict mortality and ICU admission in CAP sepsis.

Methods Medical records were audited between 01/09/2016–20/03/2017 at Barking Havering and Redbridge University Hospitals NHS Trust. Adult patients were included if ICD-10 codes on discharge/death were Sepsis A40/A41. Physiological and blood parameters were collected at time of trigger from medical/electronic records. All plain chest x-rays (CXR) and CT-chest scans were reviewed independently by two respiratory registrars to confirm consolidation. We calculated the positive predictive value (PPV) and negative predictive value (NPV) of each sepsis scoring system against two outcome measures; i)ICU Admission <24 hours ii)mortality(death) at 30 days.

Outcomes/Results We identified 114 cases of sepsis. Median age-78 years. Male:female ratio 56:58. We found 22/114 (19%) of patients had a diagnosis of CAP sepsis with CXR/CT-chest confirming consolidation <48 hours from admission. Scores for CAP sepsis (n=22) triggered more often than non-CAP sepsis(n=92) for NEWS ≥ 4 (77% vs 54%,p=0.05),

SOFA ≥ 2 (86% vs 54%,p<0.01). For CAP sepsis and non-CAP sepsis, the PPV and NPV for each sepsis score including CURB-65 were calculated for <24 hour ICU admission and 30 day mortality (Table.1). In patients with CAP sepsis, scores for NEWS/SIRS/SOFA had a high PPV for ICU admission and mortality. CURB-65 ≥ 3 had a low PPV but higher NPV.

Conclusion Patients with CAP sepsis triggered more often with NEWS ≥ 4 and SOFA ≥ 2 compared to non-CAP sepsis. Our data suggests that NEWS ≥ 4 ,SIRS ≥ 2 ,SOFA ≥ 2 or CURB-65 ≥ 2 may be used as initial screening for CAP sepsis. However, all had low NPV for ICU admission and 30 day mortality. Further studies are needed to evaluate the best scoring system to assess clinical severity for CAP sepsis and avoid unnecessary duplication.

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P121 THE RESPIRATORY INFECTIONS TEAM – A NOVEL PARADIGM IN THE MANAGEMENT OF COMMUNITY-ACQUIRED PNEUMONIA

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Background The recent British Thoracic Society national audit of community-acquired pneumonia (CAP) has shown that guideline concordance and antimicrobial stewardship remain poor in the UK. Furthermore, mis- and over-diagnosis are common.¹

Methods A Respiratory Infections Team was developed, comprising a specialist nurse supported by a respiratory consultant and antimicrobial pharmacist. Its aims were to review patients admitted to hospital with CAP, and to a) identify patients with low severity CAP for remote outpatient management with early supported discharge; b) facilitate streamlined antibiotic regimens using bedside point-of-care (POC) tests (Binax-NOW pneumococcal and legionella urinary antigens, and nasopharyngeal swab for influenza PCR), reducing total amount of antibiotic prescribed both in route and spectrum; and c) improve diagnostic accuracy, communication with clinical coders, and concordance with the BTS pneumonia care bundle. Outcomes were compared with a prospective cohort of consecutive radiographically-confirmed CAP admissions from winter 2013/2014.

Abstract P120 Table 1 Triggering of sepsis scoring systems and CURB-65 scores for predicting ICU admission within 24 hours and 30 day mortality in patients with community acquired pneumonia related sepsis and non-community acquired pneumonia related sepsis

Sepsis Scoring System	CAP sepsis (n=22)	non-CAP sepsis (n=92)							
		Admission to ICU<24 hours				Mortality<30 days			
		PPV	NPV	PPV	NPV	PPV	NPV	PPV	NPV
NEWS ≥ 4	17 (77.2%)	100.0%	33.3%	91.6%	40.0%	50 (54.3%)	57.1%	45.8%	65.3%
SIRS ≥ 2	18 (81.8%)	100.0%	26.6%	91.6%	30.0%	66 (71.7%)	100.0%	30.5%	80.7%
SOFA ≥ 2	19 (86.3%)	100.0%	20.0%	100.0%	30.0%	50 (54.3%)	85.7%	48.2%	76.9%
qSOFA ≥ 2	7 (31.8%)	57.1%	80.0%	41.6%	80.0%	15 (16.3%)	28.5%	84.7%	34.6%
CURB 65 ≥ 2	16 (72.7%)	85.7%	33.3%	83.3%	40.0%	CURB 65 was not used for non-CAP sepsis			
CURB 65 ≥ 3	7 (31.8%)	28.5%	66.6%	41.6%	80.0%				