Influence of Age on Resistance in Community-acquired Lower Respiratory Tract Isolates of *S. pneumoniae* from the UK and Ireland

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Methods. A total of 27 centres in the UK and Ireland contributed 3584 lower respiratory tract isolates of *Streptococcus pneumoniae* to the BSAC Respiratory Resistance Surveillance Programme over five winters (1999-2000 to 2003-04), excluding duplicates within 2 weeks, and isolates from samples collected >48 hours after hospitalisation, or from patients with cystic fibrosis. MICs were determined centrally using the BSAC agar dilution method and interpreted by BSAC criteria. Logistic regression models for penicillin-non-susceptibility and tetracycline-, erythromycin- and ciprofloxacin-resistance (PEN-NT, TET-R, ERY-R & CIP-R) were fitted by a stepwise method.

Results. See tables, graphs and captions.

Age was unknown for 4 patients; median age was 62. Age varied slightly between countries, but not across years. However, year was included in models to investigate trends (see poster P1453). Sex, care setting (hospital / community / nursing home) and isolate source (sputum / other) did not contribute significantly and were not included in any final models. Final models included centre, age and year of study.

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CIP resistance was best modelled with a linear function of age, indicating that the probability of resistance increased steadily with age.

Moxifloxacin-resistance (MXF-R, MIC >1 mg/L) was not geographically localised but was too rare to model (0.8% overall). It was also strongly associated with age. Of 29 MXF-R isolates, 25 were from patients aged ≥60 and none from a patient aged <50.

(Fisher's exact p < 0.001).

Conclusion. Patient age is a significant predictor of resistance in *S. pneumoniae*. Isolates from both young and elderly patients had increased risk of resistance to PEN, TET and ERY, but CIP resistance increased steadily with age. Resistance to MXF was rare in the UK and Ireland, and was seen only in isolates from patients aged over 50.

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