MRSA epidemiology: a different diffusion in Italian cystic fibrosis centres

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Background: Persistent MRSA infection in CF patients can affect clinical status. The geographical diffusion of MRSA clones remains poorly investigated. The aim of this study is to highlight MRSA epidemiology in a national survey.

Strains and Methods: 443 MRSA strains belonging to 235 patients attending 11 CF Italian centres were collected over a 4-year period. SCCmeC typing was performed according to published protocols, as well as Multi Locus Sequence Typing (MLST) analysis.

Results: SCCmeC typing was performed on 371 MRSA strains: 156 (42%) strains were characterised by SCCmeC IV (mainly associated with CA-MRSA), while 175 (47%) had SCCmeC I, II or III (associated with HA-MRSA). The prevalence of SCCmeC IV was 42% in Northern Italy while in the Centre and in Southern Italy it was 28% and 31% respectively. MLST analysis was performed on 111 out of 443 strains, showing that the majority of clones were ST228-MRSA-I (26%) and ST8-MRSA-IV (9.9%).

Conclusions: This preliminary data shows that SCCmeC IV, mainly associated with CA-MRSA, have a higher diffusion in Northern Italy. Different hospitalisation rates and/or segregation practices, can be hypothesised to explain these ﬁndings. More data is needed to clarify these differences in MRSA epidemiology.

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Validity of a symptom questionnaire for the diagnosis of viral respiratory infection in adults with CF

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Introduction: Viral respiratory infections are common in CF and are frequently associated with pulmonary exacerbations. PCR-based assays are highly sensitive for respiratory viruses but are limited by high processing costs and variable availability.

Objectives: We investigated whether symptoms of an upper respiratory tract infection (URTI) predict laboratory-confirmed viral respiratory infection in adults with CF.

Methods: 100 adults with CF were recruited to a prospective study examining the incidence & impact of viral infections. Sputum, nose- and throat-swabs were collected and tested with PCR-based assays for adenovirus, inﬂuenza, metapneumovirus, paramainluovirus, respiratory syncytial virus & rhinovirus. A 27-point URTI symptom score (Johnston et al BMJ 1993) was recorded. A score of ≥4 has previously been used to diagnose URTI. Receiver operating characteristic (ROC) analysis was performed.

Results: 19/100 recruitment visits were positive for ≥1 virus (9 rhinovirus, 7 inﬂuenza & 3 metapneumovirus). Mean (SD) URTI score was 9.6 (7.4) in the virus-positive group & 5.0 (4.7) in the virus negative group (p=0.01). ROC analysis revealed an area under the curve of 0.69 for the URTI score. An URTI score cut-off of ≥4 gave a sensitivity & speciﬁcity of 74% & 51% respectively. Optimal performance of the URTI score was achieved with a cut-off of ≥12 which gave a sensitivity & speciﬁcity of 42% & 88% respectively. Positive & negative predictive values for a score of ≥12 were 44% & 87%.

Conclusions: Symptoms of an URTI as measured by this symptom score are poorly predictive of laboratory-confirmed viral respiratory infection in adults with CF.