Infection control in cystic fibrosis: assessment of susceptibility testing of isolates of Pseudomonas aeruginosa

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Objectives: Chronic pulmonary infection with P. aeruginosa (PA) is responsible for significant morbidity and mortality in Cystic Fibrosis (CF). The means of transmission of PA in CF affected patients have not been clearly established. Many CF patients appear to acquire the organisms from the natural environment and not from other CF patients. The 29% of CF patients acquired nonmucoid PA in the first 6 months of life. The aim of this study is to assess the genotypes of first PA isolated from Italian children patients attending contemporary Genoa CF center to understand the type of acquisition/transmission.

Methods: The PA strains isolated of 28 young patients (range of age: 2 months-3 years) attending CF Genoa center were analysed and compared with PA recovered from other CF/Genoa patients and 55 environmental strains (11 from hospital sinks, 44 from swimming pool and mineral water) by BOX-PCR. A PA panel control strains included: PA01, ATCC 27853, European clone C (EC), Manchester Epidemic Strain (MES) and Liverpool Epidemic Strain (LES). The cluster analysis was performed by “Gel Compar II”.

Results: The molecular profiles of 28 children patients are not correlated. The comparison with other CF clinical, environmental and epidemic strains didn’t show any genotypes correlated.

Conclusion: Environmental acquisition was not documented. The molecular profile suggests that person-to-person transmission not occurred but it’s need of continuous survey, in the help of the infection control measures.