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Title: Eradication regime of methicillin resistant staphylococcus aureus lung infection in cystic fibrosis

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Body: Background: The impact of Methicillin resistant Staphylococcus aureus (MRSA) infection on cystic fibrosis (CF) progression and the optimal treatment regimen are still unclear. Aims and objectives: To assess the efficacy of therapeutic measures taken for eradication of MRSA and the influence of developed chronic MRSA colonization on lung function. Methods: All microbiological results from 110 patients who were followed at our CF centre from 2007 to 2012 were analysed, focusing on the detection of MRSA. MRSA eradication was attempted with two oral antibiotics (4 weeks) and nebulised Vancomycin (2 weeks). If the patient had clinical signs of infection, i.v. treatment for 2 weeks was given as before. Chronic infection was defined as persistently or ≥ 3 consecutive MRSA-positive respiratory cultures during at least 6 months follow-up period. FVC and FEV1 values, prior and two years after the establishment of chronic MRSA infection were analysed. Results: Thirty-seven patients (33.6%) were identified as having respiratory cultures positive for MRSA. 14 patients developed chronic infection. The % predicted FVC and FEV1 prior and two years after MRSA colonization in this group were, respectively 91.9 ± 21.1 , 92.3 ± 20.6 and 89.7 ± 24.2 , 82.8 ± 23.2 . The difference was not significant. Patients with more severe lung disease and poor clinical condition had harder worsening. Conclusions: Successful eradication of MRSA lung infection was achieved in 62% of patients. It is important to start eradication therapy as soon as MRSA grows from respiratory cultures. High prevalence of MRSA infection in our center indicate the needs for enhanced segregation, infection control policy and eradication treatment.