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BIO-ELECTRICAL IMPEDANCE ANALYSIS AND RELATIONSHIP WITH PULMONARY FUNCTION IN CYSTIC FIBROSIS PATIENTS

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Objective: Objectives: The crucial role of nutritional status and pulmonary dysfunction are the major prognostic determinants in cystic fibrosis patients. Bio-electrical Impedance Analysis (BIA) is widely used method in body composition assessment.
Our aim was to determine demographic and clinical characteristics of our adult cystic fibrosis (CF) patients as well as trends of inpatient stays in 2018. We have also evaluated relationship between BMI, pulmonary function results and BIA variables – fat free mass (FFM), sarcopenic indices (SI), phase angel (PA) and fat free mass index (FFMI).
Methods: In our adult CF centre, which is the first and only of its kind in Croatia, we have collected and reviewed retrospectively medical records of CF patients treated in 2018. Body composition was measured by Tanitas's body

composition monitor.
Results: We have analysed data of 38 CF patients, 18 male and 20 female, mean±SD baseline age 24.9±4.21. The mean age of diagnosis was 3.2 years. Homozygous F508del mutation was observed in 29 patients (76%). Mean±SD percentage of FEV1 was 57.7%±2.82% and of FVC was 71.0%±2.62%.Chronic pseudomonas aeruginosa infection was present in 29 patients (76.3), chronic Staphylococcus aureus in 24 patients (63.1%). Other pathogens included Stenotrophomonas Maltophilia, Burkholderia cepacia and Aspergillus fumigatus.All patients had pancreatic insufficiency and bronchiectasis. 7 patients (18.4%) had CF related diabetes, 10 patient (26.3%) had CF related liver disease, 27 patients (71%) rhinosinusitis and 7 patients (18.4%) CF related bone disease.There were 64 in-hospital stays during last year, in average 1.605 per year. 7 patients (18.4%) received a lung transplant. Mean ± SD BMI was 33.7 kg/m2, mean ± SD FFM was 48.4 kg, mean ± SD SI was 47.03 kg/m2, mean ± SD PA 5.7 and mean ± SD for FFMI was 16.8 kg/m2.
Further analysis showed no significant correlation of BMI with FEV1 or FVC(r= -.006, p=0.971, r=-.005 , p= 0.977). FFMI showed significant positive correlation with FEV1 (r= .522, p=0.018) and FVC (r=.022, P=0.50). There was also significant postive correlation between PA and FEV1 (r=0.501, P= 0.024) and FVC (r= 0.508, P= 0.022).
Conclusions: We have presented first evaluation of nutritional status on national level regarding adult CF population in Croatia. These preliminary results point towards the importance of an interdisciplinary approach while assessing CF patients therefore prompting body composition (studies) should be obligatory in all CF patients. Including more patients of various nutritional status is necessary to confirm these findings.