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**Title:** Lung function and early abnormality of glucose tolerance (GT) in cystic fibrosis (CF) patients

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**Body:** Diabetes is a frequent complication of CF and occurs in about 50% of patients older than 30 years. Its presence is correlated with the decline of lung function. Early diagnosis is based on the oral glucose tolerance test (OGTT) which could lack sensitivity in some of these patients. Continuous glucose monitoring (CGM) could be a useful tool for evaluating early abnormalities of GT in CF patients. In a single-center, observational, prospective, cross sectional study, we compared nutritional status, lung function and antibiotic courses of CF patients depending on the presence or absence of abnormal GT in OGTT or in CGM. Known diabetics were excluded. From June 2008 to July 2012, 68 patients were included: male 46%, mean age 25 years (12-57). 51 patients (75%) had a normal OGTT (group 1), 11 (16%) were glucose intolerant and 6 (9%) had diabetes (group 2). In group 2, FEV was lower (80,8%±23,1 Vs. 61,6%±23,1; p=0.01), FVC lower (94,5%±17,5 Vs. 77,5%±20,5; p=0.002), HbA1c higher (p=0.005), while the number of antibiotic courses was increased (0,86±1,11 Vs. 1,71±; p=0.01). Using CGM we defined 2 groups: maximum glucose < 2g/L (Group A, n=32) or ≥ 2g/L (Group B, n=20). In group B, HbA1c was higher (p=0.01), FEV lower (81,9%±22,9 Vs. 66,5±25,8; p=0.03). Among patients with normal OGTT (n=38), those with a pathological CGM (n=12, 31.6%) had FEV (87,4%±17,1 Vs. 68,2%±25,6; p=0.01) and FVC (99,3%±3,4 Vs. 86,1%±19,4; p=0.02) significantly lower compared to patients with normal CGM (n=26). Thus, an early abnormality of GT in CF patients is associated with greater impairment of lung function. CGM seems an interesting tool to diagnose early abnormalities of glucose tolerance in CF patients.