Title: Validity of COPD assessment test (CAT) in patients with cardiovascular co-morbidities

Body: Introduction. Some significant cardiovascular co-morbidities (CVCM) frequently coexist with COPD and possibly influence COPD-specific patient-reported outcomes such as CAT. Objectives. To evaluate the validity of CAT in COPD patients (pts) with CVCM. Methods. We performed a cross-sectional study in 3 groups of male pts tightly matched by age, co-morbidities and/or lung function (17 pts with COPD and CVCM (group 1), 17 pts with COPD without CVCM (group 2) and 17 pts with cardiac diseases without lung pathology (group 3)). All groups were assessed with CAT and Patient Health Questionnaire (PHQ-9) for depression as a possible confounder. In group 1 we also evaluated patient- and physician-reported perceptions regarding the “pivotal disease” (heart or lung), playing the key role in the health status impairment in every patient. For this purpose we used “CAT-like” scale (0 to 5). Results. In all groups CAT scores were high. In group 1 mean CAT score (23.1±4.9 did not significantly differ to group 2 (19.2±4.3, p>0.05), and was higher than in group 3 (17.2±6.1, p=0.023). Most of group 3 pts (15/17, 88,2%) scored 10 or more by CAT. CAT scores significantly correlated with PHQ-9 depression scores in group 1 (r=0.58, p=0.03), but not in the other groups (p>0.05). In group 1 neither pts’ nor physicians’ perceptions about the “pivotal disease” significantly correlated with pts’ CAT scores. This indicates the difficulties in differentiating pulmonary and cardiac genesis of symptom burden and its role in the health status impairment. Conclusions. CAT scores may be significantly distorted by CVCM and, possibly, depression. Further validation of CAT in COPD pts with CVCM and other co-morbidities is warranted.