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Title: Impact of the nutritional status on pulmonary function in COPD patients

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Body: COPD is acutally widely considered as a systemic disease and is associated with frequent nutritional disorders that may influence the outcome of the disease. To evaluate the relationships between the nutritional status (obesity and underweight) and the pulmonary function parameters, we report a retrospective study including 55 COPD patients managed between 2010 and 2013. The mean age of our patients was 62,45 years. Sex-ratio was at 5.87. The nutritional evaluation of our patients showed that 18 % of our patients had a BMI inferior to 18,5kg/m², 41 % of our sample had a normal nutritional status, 12% had an overweight and 27% of cases were obese. Ten per cent of our patients presented with stagel COPD, 21% were at stage II and respectively 54% and 12% were at stages III and IV. Underweight was significantly associated with a lower lung function: average FEV1 in underweight patients was at 1.31 L (47% of predicted values: pred) versus 1.56 L in non underweight patients (56% of pred): p=0.02. Mean FVC was independent from underweight. The Tiffenau index was lower in underweight patient without reaching a statistically significative difference. Average FEV1 was similar in obese and non obese patients: 1.69 L (62% of pred) versus 1.59 L (58% of pred) p 0.06; Average FVC was significantly lower in obese patients: 2.57 L (76% of pred) versus 2.30 L (65% of pred): p =0.04. The Tiffenau Index was independent from obesity. The small airway's obstruction was significantly more important in underweight patients (p=0.04). Underweight seems to be associated with a lower pulmonary function in COPD. The nutritional care should play an important role in multidisciplinary COPD management.