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Title: Nutritional aspects and asthma. Influence of malnutrition factors on severity of asthma

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Body: While obesity is a risk factor for asthma that is increasingly studied, malnutrition in asthma is less known. Objective: To determine if nutritional aspects have an influence on severity of asthma. Materials and methods: We included 91 asthmatic patients and studied 4 aspects related with asthma: severe persistent asthma or not, obstructive or not, poorly controlled and >1 exacerbation/year or not. Nutritional status was measured by BMI, waist/hip ratio, albumin, prealbumin and bioimpedance. Systemic inflammation by Hb, hematocrit, CRP and Ddimer. Significant was $p < 0.05$. Results: Average age was 48 years, 21.2% men, 22.2% poorly controlled asthma, 45% had obstruction, 58% severe persistent asthma, 42.6% had >1 exacerbation/year. Older patients had more obstruction, severity, exacerbations and worse ACT. Higher Charlson index was associated with severity, obstruction and exacerbations. Increased CRP was related with obstruction (7.2 ± 10 vs 2.8 ± 3 $p < 0.061$). Neither Ddimer, Hb, nor Hct were different in the aspects of severity. Nutritional values: obstruction was related with the rate of fat-free mass FFMI (17.3 ± 2.4 vs 18.5 ± 2.6 $p < 0.016$). Patients with >1 exacerbation/year had lower percent of muscle mass (37.9 ± 7.9 vs 42.9 ± 8.3 $p < 0.015$). Using a multiple linear regression age and FFMI remained as independent variables related with more obstruction, explaining 18% of the variation/drop produced in the variable FEV1/FVC. For every decreased point of FFMI, FEV1/FVC decreases by 1 point. Conclusions: Lower percentage of muscle mass is associated with more exacerbations and low FFMI with obstruction in asthma. With more systemic inflammation, malnutrition has greater role, as in asthma with airflow obstruction.