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Title: Influence of body mass indexes on response to treatment in acute asthma

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Body: Background: Increases in body mass index (BMI) are reported to influence asthma response to treatment. The aim of this study was to investigate the relationship between BMI and response to treatment in a group of patients that were referred for asthma control. Patients and Methods: Effectiveness measurements in this analysis included percentage of changes in forced volume in 1 second (FEV1), forced volume capacity (FVC), FEV1/FVC, and FEF25-75%. A total of 293 subjects with asthma of both genders and above 18 years of age were divided into the following BMI categories: 107 (36.5%) non-overweight (BMI <25), 186 (63.5%) overweight and obese (BMI ≥25). Percentage of change was defined as change in variable between baseline and end-of-treatment. Results: Analyses of non-overweight vs. overweight/obese asthmatics demonstrated non-significant differences in baseline FEV1 (1.62±0.56 Lit vs. 1.63±0.56 Lit L, p=0.89); FVC (2.58±0.73 Lit vs. 2.47±0.82 Lit, p=0.25); and FEF25-75% (1.04±0.55 ml/sec vs. 1.05±0.50 ml/sec, p=0.47) respectively. Compared with non-overweight subjects, obese subjects with asthma were less responded to treatment than non obese asthmatic subjects. Percentage changes of FEV1, FVC, FEF25-75%, and FEV1/FVC in non-obese versus obese patients were: 79.57±55.14 % vs. 62.13±41.72%, p= 0.005; 47.71±33.76% vs. 39.93±28.30%, p= 0.036; 151.98±127.82% vs. 123±91.12%, p= 0.041; 20.54±15.63% vs. 15.63±11.32%, p=0.005; respectively. Conclusion: Percentage changes of spirometric values to treatment in over weight/obese asthmatic patient were lesser in compared with non-overweight subjects.