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Title: Does severity of obesity effect intensive care outcome of patients with obesity hypoventilation syndrome?

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Body: Aim: Aim of study is to investigate the effect of severity of obesity on intensive care(IC) outcome of obesity hypoventilation syndrome(OHS) patients admitted to ICU with acute respiratory failure(ARF). Method: Study is designed as retrospective cohort study between June 2009-2011 at ICU of teaching hospital. Patients with hypercapnia (PaCO₂<45mmHg) and body mass index(BMI) > 30 kg/m² were grouped according to BMI 30-39 as group 1; and ≥40 as group 2 (morbid obesity). Demographic characteristics, comorbid diseases, blood gasses(ABG), invasive and noninvasive mechanical ventilation, ICU length of stay(LOS), mortality of groups are compared. Results are recorded as median and interquartile ratio(IQR, 25-75%). Results: 149 OHS patients were included; 86 patients in Group 1, 66 patients in group 2. Respectively, patients median age was 66 (55-71), 61 (55-70) years; admission APACHE II score 16 (15-20), 18 (16-23); admission PaCO₂: 75 (69-86), 78 (67-85); PaO₂/FiO₂: 173 (149-216), 180 (155-230) were similar. IMV application was %30 and %29, NIV application was 99% and 97%, respectively. The falling rate of PaCO₂ below 45 mmHg was 55% and 75%, respectively and difference was significant (p<0.015). LOS and mortality rates were similar between groups. Device reporting for home ventilation was 40% for group1 and 64% for group 2 (p<0.026). COPD/asthma coexistence was 40.7% at group 1 and 1.6% at group2 (p<0.001). Conclusion: Obesity and morbid obesity don't alter ICU outcome of patients with OHS and ARF. COPD and asthma comorbidity cause persistent hypercapnia independent of BMI. Improvement in hypercapnia in morbid obesity without comorbidity is better.