**Obesity hypoventilation syndrome and positive airway pressure treatment**

Obesity hypoventilation syndrome (OHS) is defined by the presence of daytime hypercapnia (PaCO2 ≥ 45 mm Hg) in an obese individual (body mass index ≥30 kg/m2) in the absence of another cause of hypoventilation. Ninety percent of patients with OHS have concomitant OSA,  
and up to 70% with severe OSA. OHS is accompanied with increased risk of cardiovascular complications, so the treatment of hypoventilation with positive airway pressure (PAP) seems necessary. Based on the Pickwick trial and several RCTs, in the context of OHS with severe OSA, CPAP and NIV are not significantly different in their impact on resolution of hypercapnia, mortality, and other clinically relevant outcomes. Therefore, it is recommended that CPAP rather than NIV be offered as the first-line treatment to stable ambulatory patients with OHS and coexistent severe OSA. However, CPAP failure rate and need to convert to NIV has  
been reported at 20% to 40%. Risk factors for CPAP failure are advanced age, more significant impairment in lung function, and greater degree of hypercapnia and/or hypoxemia.   
NIV remains the first-line therapy for OHS in patients without severe OSA. NIV is also recommended for home use on leaving the hospital in cases of acute-on-chronic hypercapnic respiratory failure. In these patients, sleep study and PAP titration within 3 months are recommended. In conclusion, CPAP is considered the first line treatment in OHS with coexistant severe OSA. In OHS patients without OSA and in acute on chronic respiratory failure, NIV is still considered the treatment of choice.