European Respiratory Society
Annual Congress 2012

Abstract Number: 4709

Publication Number: 3122

Abstract Group: 1.13. Clinical Problems - Other

Keyword 1: Lung function testing **Keyword 2:** Apnoea / Hypopnea **Keyword 3:** Comorbidities

Title: Arterial hypoxaemia in morbid obesity

Ms. Ebymar 29090 Arismendi ebymar@gmail.com MD [1,2], Ms. Eva 29091 Rivas erivas@clinic.ub.es MD [3], Ms. Yolanda 29092 Torralba YOTORRA@clinic.ub.es [2], Ms. Concepcion 29093 Gistau cgistau@clinic.ub.es [1], Mr. Felip 29094 Burgos fburgos@clinic.ub.es [1], Prof. Dr Josep 29095 Roca jroca@clinic.ub.es MD [1,2] and Prof. Dr Roberto 29133 Rodriguez-Roisin rororo@clinic.ub.es MD [1,2]. [1] Servei de Pneumologia, Hospital Clinic of Barcelona, Spain, 08036 ; [2] CIBER de Enfermedades Respiratorias, CIBERES, Palma de Mallorca, Islas Baleares, Spain, 07110 and [3] Servei de Anestesiologia, Hospital Clinic of Barcelona, Spain, 08036 .

Body: Introduction: Morbid obesity (MO) can be associated with arterial hypoxaemia, mostly due to a highly prevalent obstructive sleep apnoea (OSA). Objective: To determine the prevalence of hypoxaemia in patients with MO before and one year after bariatric surgery (BS) and its correlation with OSA. Methods: We included 230 patients (44±[SD]12 yrs; 165 females; BMI, 46±7 kg/m2; and, waist-to-hip-ratio, 0.96±0.08). OSA was defined as an apnoea/hypopnoea index (AHI) ≥10. Results: Before BS, all patients (ERV, 33±22%) had spirometry and DLCO within reference values, with normal PaO2 (83±12 mmHg) and PaCO2 (36±3 mmHg) values. One hundred and fifty four (70%) patients had OSA (48%, severe OSA [AHI ≥30]), 66 (43%) with hypoxaemia (PaO2, 70±7 mmHg). Patients with OSA had lower PaO2 and higher PaCO2 than those without OSA ($p < 0.05$ each). Thirty out of 230 patients (13%) without OSA had hypoxaemia (PaO2, 74±4 mmHg), whose FVC, FEV1, VC, IC, ERV and DLCO were lower than those in 36 normoxaemic (PaO2, 93±7 mmHg) patients ($p<0.01$ each). Overall PaO2 was correlated with waist-to-hip-ratio (r, −0.30, $p<0.05$). Before BS, age, sex, FVC, ERV and waist-to-hip-ratio were the independent factors associated with hypoxaemia (r2, 0.28, $p<0.05$) (multiple regression analysis). After BS, patients had a 76±18% of excess weight loss with overall improvement in lung function ($p<0.01$ each) while OSA ameliorated in 65% of them. Post-BS ERV (115±37%) and PaO2 (93±10 mmHg) improvements ($p<0.01$ each) were associated (r, 0.22, $p<0.05$). Conclusions: Hypoxaemia continues to be a common finding in MO, mostly in patients with OSA. However, hypoxaemia can also be present without OSA, possibly related to central obesity.
Supported by FIS PI080311, CIBERES, Almirall and Esteve.