2509 Meta-analysis of the long-term effects of inhaled corticosteroids in chronic obstructive pulmonary disease (COPD)
P.M. van Grunsven, C.P. van Schayck, J.P. Derenne 1, H.A.M. Kerstjens 2, T.E.J. Renkerma 2, D.S. Postma 2, T. Similowski 1, R.P. Akkermans, R.C.M. Pauwels-de Jong 3, P.N.R. Dekhuijzen 4, C.L.A. van Haurwerden 4, C. van Weel, Dept. of General Practice and Social Medicine, University of Nijmegen, The Netherlands, 1Dept. of Pulmonology, University of Nijmegen, The Netherlands, 2Dept. of Pulmonology, University of Groningen, The Netherlands, 3Dept. of Pulmonology, Hospital Pitié-Salpêtrière, Paris, France

The role of inhaled corticosteroids (ICS) in the long-term management of COPD is still unclear. Therefore, we performed a meta-analysis of the three-two-year studies published on this subject (Kerstjens et al: N Engl J Med 1992; 327: 1413-9, Derenne et al: Am J Respir Crit Care 1995; 151: A463, Renkerma et al: Chest 1996; 109: 1556-62). Patients with "asthmatic features" were excluded by analyzing the original data. The effect on FEVI was assessed by a multiple repeated measurement technique in which time and drug effects were investigated. 95 (of the original number of 140) Patients treated with ICS (81 with 1500 µg beclomethasone, 6 with 1560 µg budesonide, and 8 with 800 µg budesonide) were included. 88 Patients treated with placebo were included (of the initially 144 patients). No baseline differences were observed (mean age 61 years, mean FEV1 = 45%pred). Worrisome of the disease was the drop-out reason in 4 patients of the ICS group vs. 9 of the placebo group (p = 0.11). The estimated two-year difference in the prebronchodilator FEVI was +0.0003L (95% confidence interval (c.i.) +0.010L to -0.017L) in the ICS group versus placebo, the postbronchodilator FEVI showed a difference of +0.083L (95% c.i. +0.003L to +0.163L). In conclusion, this meta-analysis showed beneficial long-term effects of ICS on the FEV1 in patients with a clear diagnosis of COPD.

2510 When to perform arterial blood gases (ABG) in stable chronic obstructive pulmonary disease (COPD)?
N. Roche, B. Herer, T.C. Chinet, G.J. Huchon, Service de Pneumologie, Hôpital Ambroise Pare, F-92104 Boulogne, France

In patients with stable COPD, there is no agreement on the FEV1 threshold above which ABG are unnecessary to identify patients who would require supplemental O2 therapy. The American Thoracic Society and French guidelines recommend to perform ABG when FEV1 is less than 50% predicted, whereas the European Respiratory Society recommends to perform ABG when FEV1 is less than 70% predicted. Several studies have shown a poor correlation between spirometry and ABG which ABG are unnecessary to identify patients who would require supplemental O2 therapy. The insufficient oxygen flow by MODS, IOD, PM or MR produce ABG failure. In 54/55 concentrators deliver oxygen with a PaO2 > 60 mm Hg, were NOD often occurs among COPD patients with daytime PaO2 < 60 mmHg, and our aim was to evaluate the outcome of these subjects.

Methods: 210 COPD were observed from January 1991 to December 1995: 176 with chronic severe hypoxemia (PaO2 50.8 ± 6.5 mmHg) treated with LTOT (LTOT subjects) and 34 with NOD, assessed by 15% of the recorded time with PaO2 < 90 and dismal PaO2 64 ±7 mmHg (NOD subjects).

Results: We compared age and FEV1 of LTOT subjects and NOD subjects (Student's t-test, level of significance p < 0.05). NOD subjects compared to LTOT subjects were younger (64 ± 3 vs 70 ± 4 yrs; p = 0.005), had FEV1 higher (50 ± 2.7 vs 36.9 ± 2.7% predicted; p < 0.0001). During follow-up, daytime PaO2 in 103/4 NOD subjects fall to values that required LTOT: these patients showed, compared to other 24 NOD subjects, PaO2 significantly reduced (42 ± 7 versus 56.6 ± 2%; p < 0.0001) and greater Pack Years (35 ± 13 vs 13 ± 13, p < 0.0001) while by the patient or "family" were only chosen 40 times. Conclusions: We speculate that our 34 NOD patients are a subgroup, with an earlier stage of their disease, leading progressively to chronic hypoxemia: bronchial obstruction and Pack Years are the risk factors for the worsening diurnal PaO2.

2511 Assessment of domiciliary oxygen therapy effectiveness by means of arterial blood gas analysis at home and long-term oximetry in patients with COPD
J.A. López, M.C. Vericat, O. Parra, J.M. Guerra, J.E. Boida, I. Hernández, Servi de Pneumología, Hospital Sagrat Cor, Barcelona, Spain

Aim: 1. To assess if domiciliary oxygen therapy (DO) in COPD patients, is effective to reach, breathing oxygen, a resting PaO2 > 60 mm Hg and a CTO2 (percentage of time spent with SpO2 < 90%) while breathing oxygen <15%. 2. To assess the cause of DO failure: Malfunctioning oxygen delivery system (MODS), Insufficient prescribed oxygen dose (IOD), Patient's mistake (PM), or Mixed reasons (MR). 3. To analyse the sensitivity of long-term home oximetry in detecting patients with a resting, breathing oxygen, PaO2 > 60 mm Hg.

Methods: 73 clinically stable COPD patients with chronic respiratory insufficiency, without other heart, pleural, lung or thorax notable pathologies that have been using DO for at least 1 year (55 concentrators, 8 cylinders and a liquid oxygen system) were consecutively recruited from ambulatory control of 5 Hospitals.

Interventions and Measurements: Arterial blood gases determined at rest, breathing oxygen at patients' home and breathing room air in the hospital. Technical check of oxygen sources using a gas analyzer and a precise rotameter. Oximetry recorded during the oxygen therapy time, considering two different periods: "day with oxygen (DOX)" and "sleep with oxygen (SOX).

Results: (1) 9 patients (12,3%) of 73 studied were excluded because they had a resting room air PaO2 > 60 mm Hg. (2) 29 patients (45.3%) with 64 with a resting room air PaO2 < 60 mm Hg, were poorly controlled with their DO: 13 (20.3%) showed a resting, breathing oxygen, PaO2 > 60 mm (16% (25%) had a CTO2 > 15% during DOX and/or SOX. (3) 26/73 (36%) oxygen delivery systems supplies flows lower or 75% of flow indicated on their caudalimeter. 54/55 concentrators deliver oxygen with concentration error ± 2%. (4) The causes of DO failure were: MODS 6/29, IOD 14/29, PM 2/29 and MR 7/29.

Conclusions: (1) The insufficient oxygen flow by MODS, IOD, PM or MR produce unsatisfactory control of hypoxemia in 45% of COPD patients with DO studied. (2) The long-term oximetry is an adequate method to evaluate the effectiveness of DO. It should be used systematically, Supported by Fissas 95/1152.