

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 1731

**Publication Number:** P3927

**Abstract Group:** 3.3. Mechanisms of Lung Injury and Repair

**Keyword 1:** Animal models **Keyword 2:** Experimental approaches **Keyword 3:** Interstitial lung disease

**Title:** The attenuating effect of erythropoietin (EPO) on the expression of myeloperoxidase (MPO) in bleomycin-induced pulmonary fibrosis in rats

Dr. Drosos 10494 Tsavlis dr.tsavlis@yahoo.com MD <sup>1</sup>, Dr. Anna 10495 Tzoumaka atzoumaka@yahoo.com <sup>1</sup>, Dr. Georgia 10496 Kokaraki gkokaraki@yahoo.com <sup>1</sup>, Prof. Dr Kokona 10497 Koliakos-Kouzi kkoliakos@yahoo.com <sup>1</sup>, Dr. Afroditi 10498 Papadopoulou apapadopoulou@yahoo.com <sup>1</sup>, Prof. Dr Dimitrios 10504 Koutsonikolas dkoutsonikolas@yahoo.com <sup>1</sup> and Prof. Dr Evangelia 10517 Spandou spandou@auth.gr <sup>1</sup>. <sup>1</sup> Department of Experimental Physiology, School of Medicine, Aristotle University of Thessaloniki, Thessaloniki, Makedonia, Greece, 55132 .

**Body:** Purpose: The enzyme MPO is well known to participate in the fibrotic pathway with inflammatory and apoptotic actions. EPO is a multiple functional cytokine with anti-inflammatory and anti-apoptotic properties. Aim of this study was to investigate the role of EPO on the expression of MPO in bleomycin (BLM)-induced pulmonary fibrosis (PF) in rats. Methods: Fifty Wistar rats (300gr) were divided into five groups of 10 animals each: 1) control animals, 2) intratracheal (i.t) and intraperitoneal (i.p) injection of saline (0.5ml/kg), 3) BLM hydrochloride (7.5mg/kg) i.t injection, 4) BLM hydrochloride (7.5mg/kg) i.t injection followed by EPO i.p injection (2000 iu/kg), 5) saline (0.5ml/kg) i.t injection followed by EPO i.p injection (2000 iu/kg). All rats were sacrificed after 14 days. The expression of MPO was immunohistochemically measured and a scale of 4 grades (A:0-25%, B:25-50%, C:50-75%, D:75-100%) was used to evaluate it. Results: In groups 1, 2 and 5 (control groups), MPO was expressed in the low grades A (80%) and B (20%). In group 3, MPO was expressed in the high grades C (20%) and D (80%). Finally, in group 4, MPO was expressed only in the low grades A (70%) and B (30%). The expression of the enzyme took place in the high grades for group 3 (BLM group) and in the lower grades for group 4 (BLM+EPO group) ( $p < 0.001$  and  $p < 0.005$  respectively). Conclusions: Administration of EPO after the BLM i.t injection (group 4) resulted in significant lower expression of MPO in comparison with the BLM group (group 3). More studies are required to clarify the mechanisms of the protective action of EPO on PF. Maybe it is a new potential target for the therapeutic treatment of PF.