

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 2398

**Publication Number:** P3931

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

**Keyword 1:** Asthma - mechanism **Keyword 2:** Anti-inflammatory **Keyword 3:** Exercise

**Title:** IL-10 and IL-1ra mediates OVA-induced Th2 airway allergic response at short and long-term

Dr. Ronaldo Aparecido 507 Silva spfc\_ronaldo@yahoo.com.br <sup>1</sup>, Ms. Francine Maria 508 Almeida faninhbio@hotmail.com <sup>1</sup>, Ms. Clarice Rosa 509 Olivo claricero@hotmail.com <sup>1</sup>, Dr. Beatriz Manguiera 510 Saraiva beatriz@experimental.fm.usp.br <sup>1</sup>, Prof. Dr Adenir 511 Perini adenir@experimental.fm.usp.br <sup>1</sup>, Prof. Dr Milton Arruda 512 Martins mmartins@usp.br MD <sup>1</sup> and Prof. Dr Celso Ricardo Fernandes 513 Carvalho cscarval@usp.br <sup>2</sup>. <sup>1</sup> School of Medicine, University of Sao Paulo, Sao Paulo, Brazil, 04417010 ; <sup>2</sup> School of Medicine, University of Sao Paulo, Sao Paulo, Brazil, 01246903 and <sup>3</sup> Physiotherapy, University of Sao Paulo, Sao Paulo, Brazil, 01246903 .

**Body:** Aerobic training (AT) decreases airway allergic inflammation in sensitized mice; however the anti-inflammatory mechanisms are poorly known. Aim: Evaluate the mechanisms involved during an AT in asthma animal model. Method: 160 Balb/c mice were divided in 4 groups (n=24 each): Control (CT), AT, Ovalbumin (OVA), OVA+AT. OVA groups were sensitized with i.p. OVA+Al(OH)-3 and OVA-inhalations that continued during AT. AT begun after chronic airway inflammation, and it was performed at 50% maximal exercise capacity (60 min/session; 5xweek) and it was performed for 1, 3, 7, 15 or 30 days. After those periods, mice were euthanized and then analyzed the eosinophil counting (BALF), expression of IL-4, IL-5, NF-kB, IL-10, IL-1ra, Eotaxin, RANTES and ICAM-1 by immunohistochemistry in tissue lung slices. Results: OVA-induced an increase in eosinophil migration and the expression of Th2 cytokines, NF-kB, Eotaxin, RANTES and ICAM-1 over time (\*p<0.05). After 7 days, AT reduced the eosinophil migration and the expression of Th2 cytokines, NF-kB, RANTES, Eotaxin and ICAM-1 simultaneously with the increase in the expression of IL-10 and IL-1ra (#p<0.05). These effects remained until 30 days of AT. Conclusion: Aerobic Training reversed the inflammation by increasing the expression of IL-10 and IL-1ra effect that started after 7 days.