

POSTER PRESENTATION

Open Access

# Poly I:C causes exacerbation in a murine allergic inflammation model driven by house dust mite in Freund's complete adjuvant

Jorge De Alba<sup>1\*</sup>, Raquel Ota<sup>1</sup>, Elena Calama<sup>1</sup>, Félix Gil<sup>1</sup>, Neil Gozzard<sup>2</sup>, Montserrat Miralpeix<sup>1</sup>

From 2nd Cross Company Respiratory Symposium  
Horsham, UK. 6-7 September 2012

## Background

RNA viruses are major causes of respiratory infections and known to exacerbate asthma and other respiratory diseases. The objective of the study was to use poly I:C, a synthetic analogue dsRNA, to elicit exacerbation in a model of allergic inflammation driven by house dust mite (HDM) in Freund's Complete Adjuvant (FCA). This model is characterized by airway hyperresponsiveness (AHR) and a mixed T-helper phenotype [1].

## Materials and methods

BALB/c mice were sensitised subcutaneously on day 0 with HDM (100µg) in FCA as previously described [1]. On day 14, mice were exposed to saline or HDM (25µg) via intranasal instillation (i.n.). Poly I:C (30 µg) was administered i.n. 24hrs before (-24hr), at the same time (0hrs) or after (+6hours,+24hours) HDM challenge. 24 hours post-challenge, non-invasive whole-body plethysmography was used to assess AHR stimulated by aerosolised methacholine (MCh, 0-16mg/ml). 48 hours after HDM challenge, the bronchoalveolar lavage fluid (BALF) was collected to measure inflammatory cells.

## Results

Poly I:C exacerbated BALF neutrophils (-24, 0,+6), macrophages (-24, 0,+6) and lymphocytes (-24, 0) in the HDM challenged animals. At -24hrs or +6hrs, the AHR associated to MCh was also significantly exacerbated.

## Conclusions

Poly I:C exacerbates the inflammation and AHR in a murine model that mimics certain aspects of persistent asthma. This model could be used to investigate new mechanisms of action underlying viral exacerbation in persistent asthma and for the assessment and evaluation of novel therapies for such condition.

## Acknowledgements

This model was developed in partnership with UCB on behalf of the U-BIOPRED BIOPRED Study Group with input from the U-BIOPRED Patient Input Platform, Ethics Board and Safety Management Board. The research leading to these results has received support from the Innovative Medicines Initiative Joint Undertaking under grant agreement no. 115010, resources of which are composed of financial contribution from the European Union's Seventh Framework Programme (FP7/2007-2013) and EFPIA companies' in kind contribution.

## Authors' details

<sup>1</sup>Respiratory Therapeutic Area, Discovery, Almirall R&D Centre, 08980 Barcelona, Spain. <sup>2</sup>Immunology, UCB, Slough, Berkshire, SL1 3WE, UK.

Published: 14 August 2013

## Reference

1. Nasra J, Tomlinson K, Catley M, Palframan R, Watt G, Shaw S, Gozzard : Development Of a Murine Model Of Lung Inflammation And Airway Hyperresponsiveness Driven By House Dust Mite In Complete Freund's Adjuvant. *Am J Respir Crit Care Med* 2010, **181**:A2842.

doi:10.1186/1476-9255-10-S1-P21

Cite this article as: De Alba et al.: Poly I:C causes exacerbation in a murine allergic inflammation model driven by house dust mite in Freund's complete adjuvant. *Journal of Inflammation* 2013 **10**(Suppl 1): P21.

\* Correspondence: jorge.dealba.gonzalez@almirall.com

<sup>1</sup>Respiratory Therapeutic Area, Discovery, Almirall R&D Centre, 08980 Barcelona, Spain

Full list of author information is available at the end of the article