Conference Abstract Free

TSLP blocking modifies cross-talk between airway epithelium and macrophages reducing macrophage activation

Serena Di Vincenzo | Maria Ferraro | Valentina Lazzara | Paola Pinto | Bernardo Patella | Rosalinda Inguanta | Elisabetta Pace See Less

European Respiratory Journal 2024 64(suppl 68): OA1968; DOI: https://doi.org/10.1183/13993003.congress-2024.OA1968

This article appears in:

European Respiratory Journal

Vol 64 Issue suppl 68

Permissions Add to Favourites

Labels Cite Share Alerts

Focus Previous Next

Article Info & Metrics

Abstract

TSLP, an alarmin released by airway epithelium injured by several insults, exerts immunoregulatory activities. Tezepelumab, a human monoclonal antibody blocking fr TSLP, licensed for the treatment of severe uncontrolled asthma, could be a targeted

therapy also for chronic obstructive pulmonary disease (COPD). This study investigated: a) the injury processes leading to TSLP release; b) the relevance of TSLP release in the cross-talk between airway epithelium and macrophages and c) the impact of TSLP blocking using tezepelumab. Primary bronchial epithelial cells (PBEC) cultured at the air-liquid interface (ALI) was exposed to cigarette smoke extract (CSE) and Poly I:C. Intracellular and extracellular oxidative stress were evaluated by flow cytometry and by an innovative electrochemical sensor, respectively. TSLP release was assessed by ELISA. THP1 derived macrophages were exposed to the medium coming from treated ALI-PBEC with or without tezepelumab. The obtained results showed that CSE and Poly I:C. simultaneously increased oxidative stress and TSLP in ALI-PBEC and that the medium of ALI-PBEC treated with CSE and Poly I:C on macrophages increased IL-8 release and tezepelumab counteracted this effect. In conclusion, TSLP release and oxidative stress can be two associated events reflecting the damage of airway epithelium. TSLP release following the injury of the epithelium activates the macrophages to release IL-8, a potent pro-inflammatory cytokine. Tezepelumab interferes with this activation. The detection of oxidative stress by electrochemical sensors can open new avenues for evaluating epithelial damage and to identify patients eligible to alarmin targeted biologics.