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Session PO1-RES-IMM - POSTER SESSION 1: Research and Immunology (Non-CME)

## 0663 / Board #190 - BAL-EVs from Lung Transplanted Patients are of Leukocytic Origin and Activates IL17 Pathway in Respiratory Cells

April 10, 2024, 6:00 PM - 7:00 PM

Poster Hall

### Topic:

LUNG -> LUNG-Basic Science-Immunology, Inflammation, Biomarkers

### Presenter

V. Vaira<sup>1</sup>, A. M. Storaci<sup>1</sup>, N. Mansour<sup>1</sup>, S. Franzì<sup>2</sup>, M. De Filippo<sup>2</sup>, H. Eidgah<sup>2</sup>, V. S. Musso<sup>1</sup>, L. Morlacchi<sup>2</sup>, V. Rossetti<sup>2</sup>, F. Blasi<sup>1</sup>, L. Rosso<sup>3</sup>, M. Nosotti<sup>1</sup>, S. Ferrero<sup>1</sup>, A. Palleschi<sup>4</sup>. <sup>1</sup>University of Milan, Milan, Italy, <sup>2</sup>Fondazione IRCCS Ca' Granda, Milan, Italy, <sup>3</sup>Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy, <sup>4</sup>University of Milan (Italy); Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico of Milan, Milan, Italy,

### Disclosures

**V.Vaira:** None. **F.Biasi:** n/a. **L.Rosso:** None. **M.Nosotti:** n/a. **S.Ferrero:** n/a. **A.Palleschi:** None. **A.M.Storaci:** n/a. **N.Mansour:** n/a. **S.Franzi:** n/a. **M.De filippo:** n/a. **H.Eidgah:** n/a. **V.S.Musso:** n/a. **L.Morlacchi:** None. **V.Rossetti:** n/a.

### Abstract or Presentation Description

**Purpose** We previously isolated BAL-EVs from patients with stable (CTRL), or chronic (CLAD) rejection, co-cultivated with HBEC recipient cells and analyzed secreted cytokines. Now, we characterized the origin of BAL-EV and integrated proteomic and transcriptomic data of HBEC exposed to BAL-EV to preliminary chart the lung microenvironment during early chronic lung allograft rejection (CLAD).

**Methods** BAL-EVs were isolated from patients with stable (CTRL), or chronic (CLAD) rejection at early stage and co-cultured with HBECs cells for 48/72h. Cytokine arrays with bronchial cell culture extracts were performed along with a transcriptomic analysis using the nCounter Human Organ Transplant Panel. BAL-EV origin was phenotyped using the ExoView platform and antibodies against CD45, EpCam and CD68.

**Results** The majority of BAL-EVs express the CD45 antigen on their surface (65%). HBEC cultures exposed to CLAD-EV upregulated the Aryl Hydrocarbon Receptor gene (AHR), a transcription factor involved in Th17 differentiation of T-cells, and cytokines involved in the IL17 pathways both at the intracellular and extracellular level, such as TNF, CCL2, IL4 and IL5 (Figure 1).

**Conclusion** These data together with previous evidence preliminary chart the lung microenvironment during the early phases of chronic dysfunction, showing that leukocytes-derived EVs can activate in respiratory cell the IL17 pathway both at the transcription and protein level, through the upregulation of AHR gene and the upregulation of intra- and extra-cellular IL17-related cytokines.

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