Fondazione Ri.MED

Ri.MED RESEARCH SEMINARS 2023

The role of aging and extracellular matrix changes in the pathology of COPD, in particular severe-early onset COPD

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MONDAY
DECEMBER 11th
h.10:30 am

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CNR
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ABSTRACT

COPD is a devastating lung disease, caused by toxic exposure, including cigarette smoke, with a high prevalence among elderly. Worldwide more than 250 million patients suffer from COPD and this number is rising due to high smoking prevalence and increasing age of the population.
COPD is characterized by airflow obstruction and categorized into different disease severities based on the level of airflow obstruction and symptoms. The pathology of COPD consists of chronic inflammation of the lungs, which results in abnormal tissue repair and remodeling with alterations in the airways (airway wall remodeling), and the peripheral lung tissue (tissue destruction and emphysema).
Hallmarks of aging, including cellular senescence and extracellular matrix (ECM) dysregulation, are prominent features of COPD. Improved understanding of the main differences and similarities between normal lung aging and the pathology of COPD may provide novel insights in the mechanisms driving COPD pathology, in particular in those patients that develop the most severe form of COPD at a relatively young age, i.e. severe early onset COPD patients.
This presentation will focus on ECM changes with normal lung aging and the differences and overlap with COPD on protein and transcript level as well as the relationship between cellular senescence and ECM dysregulation in COPD pathology based on in vitro and ex vivo data.

BIOSKETCH

Dr. Brandsma was trained as a medical biologist at the University of Groningen and obtained her PhD degree in Medical Sciences in 2008 on a thesis focused on the inflammatory response in COPD. After obtaining her PhD, Dr. Brandsma continued as a postdoctoral researcher at the Department of Pathology and Medical Biology of the UMCG on a project focusing on the role of B-cells and autoimmune phenotype in COPD. This was followed by projects focusing on abnormal tissue repair and remodeling in COPD. In 2010, Dr Brandsma obtained international research fellowships to visit the labs of Dr. Spira (Boston) and Dr. Hogg (Vancouver). During these projects she got introduced in transcriptomics and miRNA analyses in lung tissue and cells and worked on the translation of these omics discoveries towards functional studies in the lab. These studies provided the groundwork for two research grants that she obtained from the Dutch Lung Foundation that formed the basis for her current research line on the abnormal tissue repair and remodeling response in COPD, with a specific focus on accelerated aging and senescence.
Dr. Brandsma is currently leading a research group focused on translational research in COPD trying to bridge the gap between patient-derived clinical data, omics discoveries and functional and pathological changes in the lung and patient-derived cells.

Attendance is free, but registration is required.
Please confirm your attendance by **December 10th**, 2023, filling out the registration form on the **Ri.MED web site** (N.B.: in the section "Other" please select the date and then select **how you want to participate - in presence or on remote**).

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