

Seminar Series 2012-2013

Southern Ontario Centre for Atmospheric Aerosol Research
University of Toronto

Pollution induced airway inflammation and dysfunction - what studies in lung transplantation can teach us



Dr. Yasushi Matsuda
*Research Fellow and
Lung Transplant Clinical Fellow,
Latner Thoracic Surgery,
University Health Network*



Dr. Chung-Wai Chow
*Assistant Professor,
Division of Respiratory and Multi-
Organ Transplant Programme,
Toronto General Hospital*

Lung transplantation is the only viable option for end stage lung diseases. However, chronic rejection is more common in lung transplant patients than most other types of solid organ transplantation. It is the main obstacle to long term survival. Manifesting as bronchiolitis obliterans syndrome with obliteration of the airway lumen, it occurs in 50% of patients by year 5 and in 75% by year 10. Susceptibility of lung transplant patients to rejection has been associated with exposure to traffic related air pollution.

Chronic inflammation and abnormal tissue repair are thought to be the common underlying processes that lead to airway injury observed in chronic rejection. Similar mechanisms have been identified in the pathogenesis of another chronic airway disease that is adversely affected by pollution, namely asthma.

Recent work by Dr. Chung-Wai Chow's group has identified an enzyme, spleen tyrosine kinase (Syk), which is critical for regulation of the immune system, to play a key role in modulating airway inflammation and division/growth of cells. Her group has shown that inhibition of Syk can abrogate airway hyper-responsiveness to air pollutants in a mouse model of asthma. This seminar will show results from animal studies that demonstrate how this enzyme is involved in the rejection of transplanted lung tissue. We will further discuss a novel potential strategy to control chronic rejection using drug treatment that inhibits Syk.

December 5, 2012, 3 - 4 pm

Wallberg Building, 200 College Street, Room 407

