

Immuno-Jaipur Highlight: Clinical viral immunity



The theme of the last day of Immuno-Jaipur was Clinical Immunology, in this article we shall focus on talks by Professor Clive Gray and Dr Joanna Groom, who both presented their research on viral immune responses.



Prof. Clive Gray, University of Cape Town, South Africa, provided a new perspective on T cell function within the placenta in his talk titled "*A natural transplantation model: the placenta*". He shed light on how a placenta is a form of transplant, originating from the fetus that the mother does not mount an immune response to. He

also then showed data generated on immune infiltrate analysis in the placenta of HIV exposed but not infected children (of HIV positive mother). This research is very important because children born from HIV positive mothers have increased morbidities compared to children from HIV-negative mothers. These children although exposed to the virus were not infected, however, the immune status of these infants mimicked the status of their mothers i.e the mother had a low CD4+ count which was seen even in the infants. As the viral load in mother rises, CD8+ cells increases in the placenta as well as in the infant. At birth, the depressed Treg cells in the HIV exposed infant expresses high levels of Alpha-4 Beta-7, a gut homing receptor, and indicates that birth Treg cells home towards the infant's gut where they are needed to quell

chronic inflammation and gut damage in these infants.

Dr. Joanna Groom, Walter and Eliza Hall Institute of Medical Research, Australia, delivered a talk on *“Imaging inflammatory cues in viral infection”* and demonstrated how advanced microscopy improves the understanding of complex interaction of immune system and microbes. She showed that factors such as sample health, temporal resolution, spatial resolution, signal to noise ratio, and imaging depth determine the quality of the microscopic image. She showed beautiful images of lymph node and immune cells captured by multiphoton microscope underscored the importance of microscopy in understanding the cross talk of cells in three dimensional reconstruction models.



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