

ReSViNET RSV WEBINAR SERIES - WEBINAR 3 HIGHLIGHTS

NEUTROPHILIC INFLAMMATION IN THE RESPIRATORY MUCOSA PREDISPOSES TO RSV INFECTION

SUMMARY

On January 27th, 2021 the 3rd ReSViNET webinar was co-hosted by professor Linde Meeyaard from the (University Medical Center Utrecht, The Netherlands) with guest speaker, prof Peter Openshaw (Imperial College London, United Kingdom).

This webinar focused results of an RSV human challenge study showing that the mucosal immune state defines susceptibility to infection.

KEY FINDINGS

- Correlation between neutrophil activation before infection & the risk of common cold symptoms.
- This was shown at a transcriptional level using RNA sequencing as well as protein levels associated with neutrophil activation, including IL17 & MPO.
- Finally, the observation in the human model was confirmed in mice in which chemokine-induced airway neutrophilia at time of infection enhanced disease severity.

INTRODUCTION

- RSV is an important cause of morbidity in adults & an important cause of mortality in vulnerable older adults.
- Human challenge model in which half of the participants will develop “common cold” symptoms with peak viral replication & upper airway symptoms about one week after infection.

DISCUSSION

During the Q & A session there was major interest in understanding the mechanism of airway neutrophil activation, including exposure to other viruses, RSV antibodies or genetic mechanisms.

Some interesting questions posed were:

- Regarding susceptibility & disease severity, how viral, host and environmental factors interact each other to determine the RSV disease outcome?
- Is it possible that prior priming with RSV causes the transient up or down-regulation in this incubation period?

Watch the replay to hear the full responses!

AIMS

- The Imperial College London group, including Chris Chiu and Max Habibi, previously showed that nasal IgA is a mechanism protecting infection.
- Here, the authors intensively studied the airway mucosa, including airway neutrophils, to understand what defines the risk of RSV infection.

TAKE HOME MESSAGE

This RSV human challenge study sheds new light on the role of neutrophil activation as a key mechanisms of susceptibility to RSV infection.

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 **REPLAY AVAILABLE NOW!**

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NEXT WEBINAR

 **NEXT WEBINAR: MARCH 25, 2021**
MORE INFORMATION COMING SOON!



KEY TAKE HOME MESSAGE

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