

Host immune responses to rhinovirus: Mechanisms in asthma

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Learning objectives: "Host immune responses to rhinovirus: Mechanisms in asthma"

1. To discuss the host immune response to rhinovirus.
 2. To understand the role of rhinovirus in asthma pathogenesis.
 3. To understand the effects of different treatments on virus-provoked asthma.
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CME items

Question 1. Rhinovirus —

- A. infects upper and lower airway epithelium.
- B. is a double-stranded DNA virus.
- C. has 4 different species.
- D. has 2 capsid proteins.

Question 2. The main cell surface receptor for rhinovirus is —

- A. Mac-1.
- B. vascular cell adhesion molecule 1.
- C. intercellular adhesion molecule 1 (ICAM-1).
- D. LFA-1.

Question 3. Macrophages are the most numerous cell type found in the airway lumen. They function to limit the spread of rhinoviral infection by producing —

- A. RANTES.
- B. IL-10.
- C. IFN- α .
- D. G-CSF.

Question 4. Increase in IL-8 and G-CSF levels secondary to rhinovirus infection precedes the migration of —

- A. neutrophils.
- B. eosinophils.
- C. macrophages.
- D. lymphocytes.

Question 5. Some asthma patients are more susceptible to rhinovirus lower respiratory tract infection because of —

- A. decreased production of IgG.
- B. reduction in IFN production.
- C. local immunosuppression by activated neutrophils.
- D. decreased IL-4 and IL-10 production.

Question 6. Pretreatment with corticosteroids reduces rhinovirus-induced production of which of the following?

- A. IFN- γ
- B. IgG
- C. IL-6 and IL-8
- D. TNF- α

Question 7. What is the duration of eosinophilic infiltration in the bronchial airways of asthmatics after rhinovirus infection?

- A. 2 days
- B. 1 week
- C. 2 weeks
- D. 7 weeks

Question 8. What molecule induced by IFN- γ promotes T-cell chemotaxis and can be used to differentiate virus-induced versus non-virus-induced asthma exacerbations?

- A. RANTES
- B. IP-10
- C. IL-10
- D. IL-4

Question 9. Pretreatment with corticosteroids prior to rhinovirus infection —

- A. increases airway eosinophil levels.
- B. does not alter airway hyperresponsiveness.
- C. reduces IL-6 production.
- D. inhibits the recruitment of T cells.

Question 10. Pleconaril —

- A. has been used topically for human papilloma virus.
- B. has been dosed intranasally.
- C. induces CYP3A4.
- D. is a recombinant ICAM-1 molecule.