Eosinophils were obtained from healthy volunteers, and their adhesion to transfected HeLa cells was measured using eosinophil peroxidase assays.

2. IL-5 enhances eosinophil-induced adhesion

3. 3. Anti α5β1 or β2 integrin Ab suppresses CDHR3-induced eosinophil adhesion

4. CDHR3 induces eosinophil O2- generation and degranulation

5. Transfection with CDHR3 Y529 increases eosinophil O2- generation

6. Transfection with CDHR3 Y529 increases eosinophil adhesion

Discussion

1. We found that transfection with CDHR3 variants up-regulated eosinophil functions. Genetic variation in CDHR3 could enhance airway inflammation and perhaps modify the risk for developing asthma through effects on eosinophil activation, as well as by increasing the risk of RV-C induced Th2 responses.

2. Whether CDHR3 expression is increased in the airway of patients with asthma is incompletely understood. Everman et al. reported that CDHR3 is exclusively expressed on ciliated cells, and that expression is greatest in cells undergoing ciliation as compared to mature ciliated cells, suggesting that eosinophil adhesion to ciliated cells could be greatest in airways with active cell differentiation or regeneration.

3. CDHR3 upregulates eosinophil adhesion, O2− generation and degranulation through α5β1 integrin.

4. Transfection with CDHR3 variants up-regulated eosinophil functions.

5. These effects may contribute to the development of eosinophilic airway inflammation during exacerbations of childhood asthma, especially with the presence of the CDHR3 variant.

Reference