Summary

1. Asthma is a heterogeneous heritable complex disease with various associated clinical manifestations such as shortness of breath, chest tightness, wheezing, cough and other allergies. The manifestation of asthma depends on the gender, age, genetic background and also environmental factors of an individual.

2. Many pathological features cause the block in airways and difficulty in breathing. Such pathologic features are airway wall thickening, inflammatory cell infiltration, subepithelial fibrosis, connective tissue deposition, mucus metaplasia, myofibroblast hyperplasia and etc.

3. Genetic factors significantly impacts on asthma throughout the life span. Heritability was found often in the families and the probabilities of asthma increases with the presence of positively affected parents, siblings and other family members.

4. There are several genetic association studies through which the many asthma linked genetic markers have been identified so far. Among them, ADAM33 is one of the positional cloned asthma candidate genes, which found associated repeatedly in several populations with asthma. Such studies are limited in India.

5. ADAM33 is one major gene, which is highly expressed in bronchial and vascular smooth muscle cells signifying any modification from the wild type of ADAM33 might be involved in remodeling process of bronchial structures. The precise pathophysiological basis of bronchial hyperresponsiveness remains unclear and there has been no other ways to identify such patients in their early stages of disease to quantify their future risk of severe disease. If