

Screening of MBL and SP-D Genes in Indian Population for SNPs and Their Association with Atopic Asthma

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ABSTRACT Mannan-binding lectin (MBL) an acute phase serum protein and surfactant protein D (SP-D) are the collectins that besides their role as innate immune molecules have been suggested to play an important role in asthma. To screen single nucleotide polymorphisms in the gene encoding MBL and SP-D in patients with atopic asthma. PCR amplification of collagen encoding region for MBL and –NH₂ terminus encoding region of SP-D from DNA samples of asthmatic subjects, followed by their sequencing. In the MBL gene the SNP's were studied in 5 controls and 20 patients in exon 1 and intron 1 of the gene. (Alleles 816 A/G, 868 C/T, 875 G/A, 884 G/A and 1011 G/A) while exon 1 of lung surfactant protein D was studied in 5 patients and 5 normal subjects. Of the five SNPs in MBL, G1011A, a novel SNP at position 1011 in the intron 1 of MBL was observed in 60% of asthma patients, while it was not observed in the controls. In case of SP-D out of the two reported SNPs (T341C and G282A in exon1 of SP-D) only T341C was observed in the present study. Present pilot study shows G allele at G1011A in MBL and C allele at T341C in SP-D to be significantly associated with atopic asthma and may serve as marker to identify individuals at risk to atopic asthma, however a greater sample size is required. Further, the present study shows Indians to be genetically distinct w.r.t. exon 1 of SP-D.