

Association of Serum Surfactant Protein D and SFTPD gene variants with asthma in Danish children, adolescents and young adults

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Abstract

Background: Surfactant Protein D (SP-D) is a pattern recognition molecule belonging to the collectin family expressed in multiple human organ systems including the lungs. Previous studies have shown that SP-D concentrations in bronchoalveolar lavage samples decreases and serum concentrations increases in patients with asthma possibly attributable to a combination of induced SP-D synthesis and decreased air-blood barrier integrity. The aims of this study were to investigate if the serum level of SP-D and common variations in the SP-D gene were associated to asthma in adolescents and young adults. Methods: Prospective observational study including 449 adolescents and young adults (age 11-27 years) previously diagnosed with asthma during a two-year period from 2003 to 2005 (0-16 years). At follow-up from 2016 to 2017 314 healthy controls with no medical history of asthma were recruited. Serum SP-D was analyzed on samples obtained at baseline as well as samples obtained at follow-up. SP-D genotyping was performed for rs721917, rs2243639 and rs3088308. Results: No differences were found in mean levels of sSP-D and SFTPD genotype among subjects with current asthma, no current asthma and controls. Serum SP-D and SFTPD genotype were not associated to any clinical parameters of asthma. Furthermore, baseline sSP-D was not associated to asthma at follow-up. Conclusion: Serum surfactant protein D and common SP-D gene variants were not associated with asthma in Danish adolescents and young adults with mild to moderate asthma. Serum surfactant protein D did not demonstrate any value as a clinical biomarker of asthma.

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