

ASSOCIATION OF THE CC16 A38G POLYMORPHISM WITH PC40 AND IGE IN A LONGITUDINAL COHORT; 1 MONTH TO 12 YEARS

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The CC16 A38G polymorphism has previously been associated with asthma in a case-control study. AIM: To investigate associations between CC16 A38G and the development of asthma and atopy in a longitudinal cohort study. METHODS: A birth cohort of 166 infants from Perth was assessed at ages 1 month and 6 & 12 years. Phenotype assessment included questionnaire, lung function, histamine challenge and skin prick testing. Blood was collected at age 6 for IgE levels, and at ages 6 and 12 for DNA extraction. CC16 A38G genotype was analysed by restriction digestion of exon 1 PCR products with *Sau* 96 I. RESULTS: The frequencies of 38AA, 38AG and 38GG were 10.8%, 41% and 48.2%, respectively. At age 1 month, subjects with the 38GG genotype had lower airway responsiveness (AR) with a higher mean PC40 of 1.06mg/ml (95%CI=0.881–1.28) compared with 0.852mg/ml (95%CI=0.714–1.02) for those with the 38AG and 38AA genotypes (n=131, p=0.026). At age 6, 38GG subjects were less atopic with: (1) 0.4 lower odds of having a SPT of 3mm or more, compared to those with 38AG and 38AA (95%CI=0.16–0.98, n=95, p=0.045); (2) a lower mean total IgE of 64.9 kU/l (95%CI=30.8–137) compared to 38AG and 38AA subjects with 152 kU/l (95%CI=79.5–292), (n=57, p=0.021); and (3) lower specific IgE to D.pteronysinus (0.157 kU/l vs 0.608 kU/l, n=57, p=0.038) and mixed grass (0.161 kU/l vs 0.374 kU/l, n=57, p=0.042). At 12yrs, CC16 A38G did not correlate with phenotype. CONCLUSION: The CC16 A38G allele may help determine the initial levels of AR and the levels of IgE in early childhood.

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Key words: CC16, polymorphism, PC40, IgE, longitudinal study.

Nomination for Prizes: nil