ALLERGY, GENETICS, VITAMINS

RS4711, UH RS7041

28.04.2010

The first GWAS of human vitamin serum D level finds the most important SNPs:

> In a genome-wide association study (GWAS) of 4,501 persons of European ancestry drawn from five cohorts, we identified single nucleotide polymorphisms (SNPs) in the gene encoding group-specific component (vitamin D binding) protein, GC, on chromosome 4q12-13 that were associated with 25(OH)D concentrations: rs2282679 (P=2.0 x 10â€“30), in LD with rs7041, a nonsynonymous SNP (D432E; P=4.1 x 10-22), and rs1155563 (P = 3.8 x 10â€“25).

Funny, rs7041 is the same variant that we typed earlier with limited success – maybe I should have also tested for FEV1 in adults only?? At least a new COPD study this month in Thorax arrives at this conclusion.

> In patients with COPD, 25-OHD levels correlated significantly with forced expiratory volume in 1 s (FEV1) (r=0.28, p<0.0001) [...] Logistic regression corrected for age, gender and smoking history further revealed that homozygous carriers of the rs7041 T allele exhibited an increased risk for COPD (OR 2.11; 95% CI 1.20 to 3.71; p=0.009).

What really worries me – all these lines are not drawn in the original papers. A most recent review on COPD genetics even fignores GC as a candidate, nay, nay.

Addendum 12-6-2010

The 2nd genome screen confirms GC with GWAS significance at

4p12 (overall p=1Â·9Ã—10^-9 for rs2282679, in GC); 11q12 (p=2Â·1Ã—10^âˆ’27 for rs12785878, near DHCR7); and 11p15 (p=3Â·3Ã—10^âˆ’20 for rs10741657, near CYP2R1). Variants at an additional locus (20q13, CYP24A1) were genome-wide significant in the pooled sample (p=6Â·0Ã—10âˆ’10 for rs6013897).