Polymorphisms in NF-kappa B, PXR, LXR, PPAR gamma and risk of inflammatory bowel disease - DTU Orbit (18/02/2019)

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AIM: To investigate the contribution of polymorphisms in nuclear receptors to risk of inflammatory bowel disease (IBD).

METHODS: Genotypes of nuclear factor (NF)-kappa B (NFKB1) NF kappa B -94ins/del (rs28362491); peroxisome proliferator-activated receptor (PPAR)-gamma (PPAR gamma) PPAR gamma Pro12Ala (rs 1801282) and C1431T (rs3856806); pregnane X receptor (PXR) (NR1I2) PXR A-24381C (rs1523127), C8055T (2276707), and A7635G (rs6785049); and liver X receptor (LXR) (NR1H2) LXR T-rs1405655-C and T-rs2695121-C were assessed in a Danish case-control study of 327 Crohn's disease patients, 495 ulcerative colitis (UC) patients, and 779 healthy controls. Odds ratio (OR) and 95% CI were estimated by logistic regression models. RESULTS: The PXR A7635G variant, the PPAR gamma Pro12Ala and LXR T-rs2695121-C homozygous variant genotypes were associated with risk of UC (OR: 1.31, 95% CI: 1.03-1.66, P = 0.03, OR: 2.30, 95% CI: 1.04-5.08, P = 0.04, and OR: 1.41, 95% CI: 1.00-1.98, P = 0.05, respectively) compared to the corresponding homozygous wild-type genotypes. Among never smokers, PXR A7635G and the LXR T-rs1405655-C and T-rs2695121-C variant genotypes were associated with risk of IBD (OR: 1.41, 95% CI: 1.05-1.91, P = 0.02, OR: 1.63, 95% CI: 1.21-2.20, P = 0.001, and OR: 2.02, 95% CI: 1.36-2.99, P = 0.0005, respectively) compared to the respective homozygous variant genotypes. PXR A7635G (rs6785049) variant genotype was associated with a higher risk of UC diagnosis before the age of 40 years and with a higher risk of extensive disease (OR: 1.34, 95% CI: 1.24-5.03, respectively). CONCLUSION: Common PXR and LXR polymorphisms may contribute to risk of IBD, especially among never smokers. (C) 2011 Baishideng. All rights reserved.