PrgmNr 3897 - Examining genetic associations with liver steatosis in Mexican-origin adults

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**Background:** Various studies have identified single-nucleotide polymorphisms (SNPs) related to non-alcoholic fatty liver disease (NAFLD), specifically ones located in or near the *LYPLAL1*, *GCKR*, *PPP1R3B*, *TM6SF2*, *MBOAT7*, and *PNPLA3* genes. However, these SNPs were identified primarily in populations of European ancestry. This study examined the associations of these previously identified SNPs with liver steatosis in a sample of Mexican-origin adults living in Southern Arizona. **Methods:** A total of 307 Mexican-origin adults between the ages of 18 and 64 with a body mass index (BMI) of 25 kg/m² or higher were genotyped at the following SNPs: rs12137855 (*LYPLAL1*), rs1260326 (*GCKR*), rs4240624 (*PPP1R3B*), rs58542926 (*TM6SF2*) rs641738 (*MBOAT7*) and rs738409 (*PNPLA3*). All had liver steatosis assessed through transient elastography (FibroScan®). Additive, dominant, and recessive regression models examined the association between the six SNPs and liver steatosis. Age and BMI were examined as potential modifiers of genetic associations. **Results:** Participants were, on average, 45 years old and mostly female (63%) with an overall mean liver steatosis of 288.1 dB/m, indicative of steatosis >5%. Models showed no association between *LYPLAL1*, *GCKR*, *PPP1R3B*, *TM6SF2*, or *MBOAT7* and liver steatosis. Only *PNPLA3* was statistically significantly associated with liver steatosis in both additive and recessive models (pConclusion: SNPs associated with NAFLD in populations of European descent did not strongly contribute to liver steatosis in individuals of Mexican-origin, except for rs738409 (*PNPLA3*). Further efforts are necessary to explore additional SNPs that may be associated with NAFLD in this high-risk population.