

Differential effect of the allele G ADRB2 (rs1042714) and allele C ADRB3 (rs4994) and its association with metabolic-associated steatotic liver disease (MASLD) risk factors in Mexican population.

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Introduction and Objectives: Adrenergic receptors (ADR) regulate adipocyte energy expenditure. G ADRB2 and C ADRB3 alleles are associated with fat deposition and metabolic alterations. The distribution of these polymorphisms and their influence on liver disease in Western Mexico are unknown.

Materials and Patients: In this cross-sectional study, we evaluated 919 unrelated adults with Caucasian ancestry (Villa Purificación, Los Altos, Cuquio), Native population (Nahuas, Huicholes), and Mestizo (admixed) (Guadalajara, Nayarit). Genomic ADN was extracted from leukocytes using the salting out method. ADRB2 and ADRB3 genotyping was performed using a Real-Time PCR system (TaqMan, Applied Biosystems, rs1042714 and rs4994). Body composition was assessed by bioelectrical impedance with an InBody analyzer (Inbody Co, Seoul, Korea). Biochemical tests included glucose, total cholesterol (TC), triglycerides (TG), high-density cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), and very low-density lipoprotein cholesterol (C-VLDL). Insulin resistance (IR) was calculated as fasting plasma glucose (mg/dL) $\times$ fasting serum insulin (μ U/mL)/405 and defined as HOMA-IR $\geq$ 2.5. Statistical differences for quantitative and qualitative variables were analyzed using Student's t-test and Chi-square, respectively, with R study software. Hardy-Weinberg equilibrium (HWE) was obtained using Arlequin software (version 3.01).

Results: The Natives had the lowest frequency of the G ADRB2 allele (2.9%), while the Caucasians showed the highest frequency (21.2%). In the general population, the CG/GG genotypes were associated with a higher risk for increased VLDL [OR 1.98 (1.25-3.09 $p=0.003$)] and hyperglycemia [OR 1.91 (1.19-3.04 $p=0.007$)] than CC genotype carriers. Among the Caucasians, the CG/GG genotype was protective against increased LDL [OR 0.22 (0.05-0.81 $p=0.023$)]. The C ADRB3 allele was highest in native populations (23.7%), while the Caucasians showed the lowest frequencies (12.8%). In Natives, the C ADRB2 allele and C ADRB3 allele were associated with a higher risk of hypertriglyceridemia [OR 2.99 (1.16-9.37 $p=0.036$)] and hyperinsulinemia [OR 9.93 (1.68-189 $p=0.035$)] respectively. In the mestizo population, TC/CC genotype patients showed a higher risk of body fat [OR 2.26 (1.4-3.7 $p=0.001$)].

Conclusions: The frequency of allele G ADRB2 is higher than in those with Caucasian ancestry, while allele C ADRB3 is higher in the Native population. The G ADRB2 and allele C ADRB3 confer the risk of having higher body fat without metabolic alterations in Caucasian populations. The C ADRB2 allele and C ADRB3 allele confer risk for hyperinsulinemia and hypertriglyceridemia in Native populations, metabolic alterations that have been associated with MASLD.

Ethical statement: The Institutional Review Board approved this study, and participants signed a written informed consent before entry.

Declaration of interests: None.

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Assessment of MELD Scores as Predictors of Mortality in Patients with Decompensated Chronic Liver Disease with Variceal Hemorrhage at a third-level care center.

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Introduction and Objectives: The variceal hemorrhage is the most common cause of decompensation in patients with chronic liver disease. Hemoglobin level has been used to classify severity; however, it is unreliable. This study aims to evaluate MELD scores as predictors of mortality in patients with variceal hemorrhage.

Materials and Patients: An observational, retrospective, comparative, and longitudinal study was conducted on patients hospitalized in the Gastroenterology department for one year, who were admitted with a diagnosis of variceal hemorrhage and met the criteria for applying the MELD score within the first 48 hours of hospitalization. Descriptive and inferential statistics were performed using ROC curves. Demographic variables, MELD, MELD Na, and MELD Lactate scores were evaluated. The initial and follow-up hemoglobin levels were assessed. Additionally, hospitalization days and discharge reasons were considered.

Results: A total of 96 patients were analyzed (60 women and 36 men) with an average age of 62 ± 8 years. Regarding the etiology of cirrhosis, Alcohol: 48, MASLD: 18, METALD: 8, Viral: 4, Unspecified: 6, Autoimmune: 16. In the analysis of ROC curves, it was found that there was a significant mortality prediction for the MELD, MELD Na, and MELD Lactate models. The MELD cutoff of 21.5 points presented an AUROC of 0.866 (95% CI: 0.71-1.00, $p < 0.001$), MELD Na of 20.5 had an AUROC of 0.848 (95% CI: 0.67-1.00, $p < 0.001$), and the MELD Lactate cutoff of 20.5 had an AUROC of 0.791 (95% CI: 0.644-0.939, $p = 0.003$).

Conclusions: In the analysis of ROC curves, the MELD, MELD Na, and MELD Lactate models demonstrated a significant predictive capacity for mortality. The AUROC values were 0.866, 0.848, and 0.791 respectively, confirming their utility in clinical practice for patients with chronic liver disease admitted in the context of decompensation due to variceal bleeding.

Ethical statement: Data confidentiality and participant protection are guaranteed.

Declaration of interests: None.

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Characteristics of overlap syndrome in Mexican patients.

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Introduction and Objectives: The overlap syndrome combines two or more autoimmune liver diseases such as: autoimmune hepatitis, primary biliary cholangitis and primary sclerosing cholangitis, in Mexico there is little information about this disease. Objective: To