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Hepatic Fibrosis and Race/Ethnicity in Adult US Population: Data from NHANES 2017-18

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Non Alcoholic Fatty Liver Disease (NAFLD) is a public health concern, especially given its increasing prevalence. The spectrum of NAFLD ranges from simple NAFLD to nonalcoholic steatohepatitis (NASH), followed by fibrosis and cirrhosis. There is a known health disparity for NAFLD with Mexican-Americans having a higher prevalence and Blacks having a lower prevalence compared to Non-Hispanic Whites. The objective of this study is to examine the association between race/ethnicity and hepatic fibrosis. Data from the National Health and Nutrition Examination Survey (2017-2018) was used for the analysis. The analytic sample was restricted to participants who were at least 18 vears of age (N=5492). Hepatic fibrosis was diagnosed by FibroScan®. Fibrosis stages were F0-F1 (<=7 kPa), F2 (7-<10 kPa), F3 (10-<14 kPa) and F4 (=>14 kPa). Data were analyzed using Chi square and multinomial regression to determine the association between race/ethnicity and hepatic fibrosis adjusting for the other independent variables [demographics (age, gender, education, poverty), physical activity, smoking, waist-hip ratio, body mass index, triglycerides, cholesterol, glucose, HbA1c, C-reactive protein (hsCRP), alanine aminotransferase (ALT), aspartate aminotransferase (AST) and healthy eating index (HEI) using SAS (Release V.9.1.3, 2002; SAS) and including sample weights and design. The overall prevalence of hepatic fibrosis was 20.8% (F2=12.7%, F3=4.6%, F4=3.5%). There was no statistically significant difference in hepatic fibrosis prevalence by race/ethnicity (p=0.817). F2 stage was highest among Blacks (14.9%) and other Hispanics (14.8%) and 13.0% in Non-Hispanic Whites. F3 stage was highest among Blacks (5.3%) and Whites (4.9%). F4 was highest among "other Hispanics (4.7%) but none of the differences was statistically significant. In the multinomial adjusted model, race/ethnicity was not associated with having F2 or F3 stages, but it was associated with F4 stage where "other race/ethnic" group were 3 times more likely than Non-Hispanic Whites to have F4 stage (adjusted odds ratio=3.2, 95% confidence interval=1.1-9.4, p=0.03). In the adjusted model, factors associated with high adjusted odds of F4 stage were high waist to hip ratio, low HDL (<40 mg/dL), hsCRP>1 mg/dL, high AST (>40 U/L), HbA1c=>6.5% (diabetes mellitus) (p<0.05). Factors associated with high odds of F3 stage were age 65 years and older, high BMI (obese), and high cholesterol (200-239 mg/dL) (p<0.05). We concluded that there is no racial/ethnic difference in the prevalence of fibrosis stages in our population, but those "other race/ethnic" group (mixed race/ethnicity) had higher likelihood of severe fibrosis (F4) than Non-Hispanic Whites. The finding that the health disparity of hepatic steatosis found in Mexican Americans was not found for fibrosis is an important negative finding and suggests that although Mexican Americans have higher rate of hepatic steatosis, it does not progress to fibrosis.

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