Is Overweight or Obesity Associated with Advanced Liver Disease among Hispanics with Chronic HCV?

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Introduction

❖ A systematic review has reported that Hispanics have a more aggressive course for all types of chronic liver disease[1]

❖ Chronic Hepatitis C virus (HCV) infection may be more advanced at diagnosis in Hispanics

❖ A convenience sample of chronic HCV patients in Los Angeles found that Hispanics were more likely to have a higher fibrosis stage and faster progression that may have been due to a higher prevalence of steatosis compared with non-Hispanic whites [2]

1 Carrion AF et al. Clin Gastroenterol Hepatol. 2011 October ; 9(10): 834–e110.
2 Verma S et al. Am J Gastroenterol 2006;101:1817–1823

Objectives

❖ To examine the association of Hispanic ethnicity with significant fibrosis on non-invasive staging of a cohort of baby boomers who have been newly diagnosed with chronic HCV infection

❖ To examine the effect of adjusting for BMI, diabetes, and alcohol use on the association of Hispanic ethnicity with significant fibrosis

Materials and Methods

Data sources
•Never screened baby boomers admitted to a San Antonio safety-net hospital from 12/1/2012 to 9/30/2014 and screened with anti-HCV antibody (anti-HCV) and reflex HCV RNA.
•Persons with newly diagnosed chronic HCV infection (HCV RNA positive) were followed through 12/10/2014 for evaluation of liver disease including laboratory tests and imaging (liver ultrasound and/or CT scan)
•Reports were independently reviewed by 2 clinicians for evidence of likely cirrhosis or hepatocellular carcinoma (HCC).

Outcome variable
•Significant fibrosis: based on Fib 4 index (≥1.45) plus imaging studies showing cirrhosis or HCC

Independent Variables
•BMI (<25 vs. ≥25), age, gender, self-reported race-ethnicity (categorized as Hispanic vs NHW/black/other), alcohol use (heavy use vs. not), insurance status (yes/no) and dx of diabetes mellitus.

Analysis: Multiple logistic regression was used to examine the associations of Hispanic ethnicity adjusted for the above variables

Results

Adjusted Odds of Significant Fibrosis for Combinations of Risk Factors
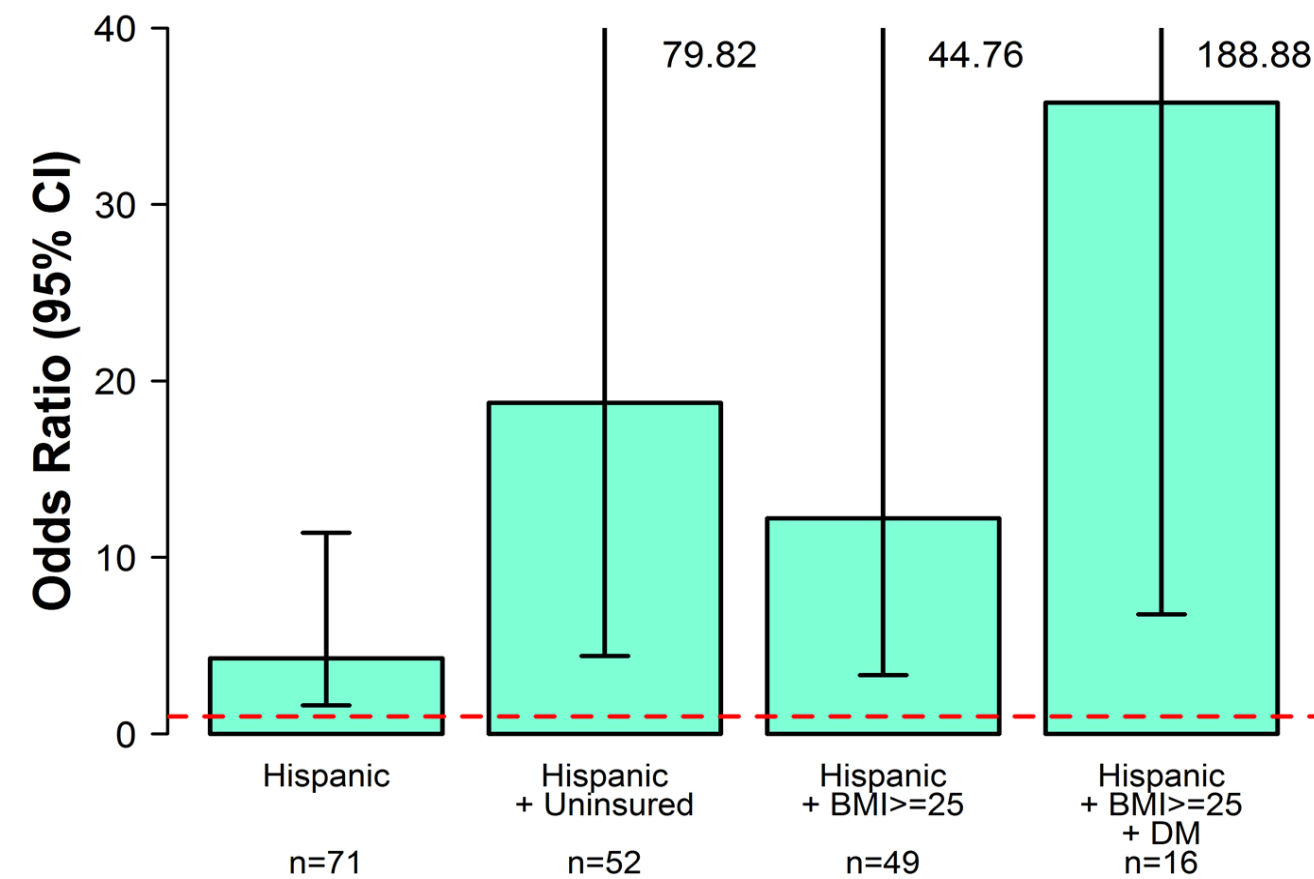
Conclusions

❖Hispanics in this cohort had four times greater odds of having significant fibrosis on non-invasive testing than non-Hispanics

❖This strong association was not changed with adjustment for other risk factors that may be in the causal pathway of liver fibrosis such as heavy BMI, DM, and alcohol use.

❖These factors have multiplicative effects on the odds of significant fibrosis such that a Hispanic patient with a BMI of 30 and diabetes has adjusted odds of significant fibrosis that are over 35 times greater than a non-Hispanic white with a BMI of 24 and no diabetes

Associations of Demographic and Clinical Factors with Significant Fibrosis (SF)

Characteristics	All Patients N (%)¥	Patients with SF N (%)†	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)‡	Adjusted P value‡
	125 (100)	51 (40.8)			
Age, mean (SD)	54.50 (4.67)	55.16 (5.70)	1.05 (0.97, 1.14)	1.16 (1.04, 1.29)	0.008
Gender					
Women	21 (16.8)	6 (28.57)	1	1	
Men	104 (83.2)	45 (43.27)	1.91 (0.69, 5.3)	1.37 (0.39, 4.88)	0.623
Ethnicity					
Non-Hispanic	54 (43.2)	12 (22.22)	1	1	
Hispanic	71 (56.8)	39 (54.93)	4.27 (1.93, 9.43)***	4.28 (1.61, 11.4)	0.004
Insurance					
Insured	44 (35.2)	10 (22.73)	1	1	
Uninsured	81 (64.8)	41 (50.62)	3.49 (1.52, 7.98)**	4.38 (1.61, 11.93)	0.004
BMI					
<25	51 (40.8)	14 (27.45)	1	1	
≥25	74 (59.2)	37 (50)	2.64 (1.23, 5.68)*	2.85 (1.14, 7.16)	0.026
Alcohol use					
Non-heavy drinking	75 (60.48)	25 (33.33)	1	1	
Heavy drinking	49 (39.52)	26 (53.06)	2.26 (1.08, 4.73)*	1.64 (0.68, 3.98)	0.274
Diabetes					
No diabetes	92 (73.6)	33 (35.87)	1	1	
Diabetes	33 (26.4)	18 (54.55)	2.15 (0.96, 4.81)	2.93 (1.08, 7.96)*	0.035

* p<0.05; ** p<0.01; *** p <0.001; ¥ Column percent except for age; † Row percent except for age; ‡ Adjusted for all covariates listed