Congestive Heart Failure And The Metabolic Syndrome Are Mutually Independent Predictors Of Non-Alcoholic Fatty Liver Disease

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BACKGROUND AND AIM

Non-alcoholic fatty liver disease (NAFLD) is associated with both the metabolic syndrome (MetS) and congestive heart failure (CHF). The MetS is highly prevalent in CHF patients; however, the single and joint associations of the MetS and CHF with NAFLD have not been investigated yet. This issue therefore is addressed in the present study.

PATIENTS & METHODS

We investigated 202 patients with CHF and 670 controls who did not have signs or symptoms of CHF and in whom significant coronary artery disease was ruled out angiographically. The presence of NAFLD was determined using the validated fatty liver index (FLI).

Fatty liver index (FLI)

The FLI is an algorithm devolped by Bedogni et al. based on BMI, waist circumference, triglycerides and GGT. It has an accuracy of 84% in detecting fatty liver disease. The FLI varies between 0 and 100, whereas a FLI < 30 rules out and a FLI ≥ 60 rules in fatty liver disease.

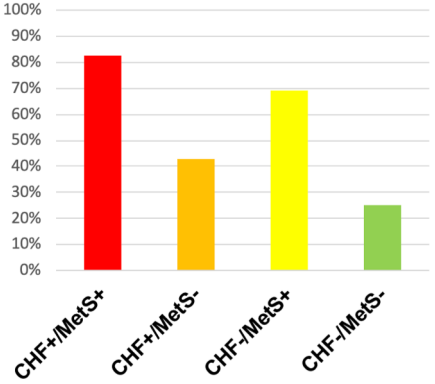
BACKGROUND AND AIM

The prevalence of the MetS was 61.9% in CHF patients and 45.7% in controls (p<0.001). FLI values and prevalence rates of NAFLD (FLI≥60) in non-CHF subjects without MetS were 40±25 and 25.0%, respectively. They were significantly higher in non-CHF, but MetS patients (71±22, p<0.001 and 69.3%, p<0.001, respectively), in CHF patients without MetS (54±24, p<0.001 and 42.9%, p=0.002, respectively) and in CHF patients with MetS (76±20, p<0.001 and 82.4%, p<0.001, respectively). In multivariate analysis of covariance, the MetS and CHF proved to be mutually independent predictors of FLI after adjustment for age, sex, BMI, LDL-C, history of smoking and hypertension (F=296.94; p<0.001 and F=21.68; p<0.001, respectively); concordantly, the MetS and CHF independently predicted the presence of NAFLD in logistic regression analyses, with adjusted odds ratios of 6.67 [4.83-9.21]; p<0.001 and 2.52 [1.67-3.79]; p<0.001, respectively.

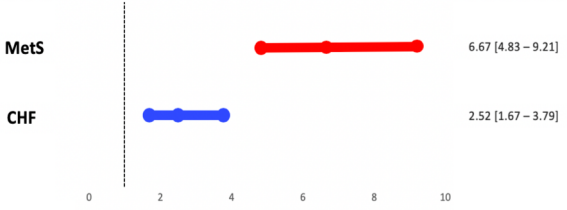
CONCLUSION

We conclude that CHF and the MetS are mutually independent predictors of NAFLD.

PREVALENCE OF NAFLD



LOG. REGREGRESSION ANALYSIS: PREVALENCE OF NAFLD



Odds ratios and range (95% CI) of logistic regression analysis are given for prevalence of NAFLD after adjustment for age, sex, BMI, LDL-C, history of smoking and hypertension

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