EC7_8

NAFLD (Non-Alcoholic Fatty Liver Disease) is Associated with Lower Diastolic Function and Greater Left Ventricular Hypertrophy also in Lean Non-Diabetic Patients

Guglielmo M. Trovato[1], Daniela Catalano[1], G. Fabio Martines[2], Francesca M. Trovato[1], Clara Pirri[1]

[1]*Internal Medicine and Cardiology, University of Catania, Italy*

[2]*Emergency Medicine, AOU Policlinico-VE, Italy*

Background:

NAFLD is a condition not directly attributable to specific factors. Unhealthy lifestyle and obesity in non-diabetics and without alcohol abuse are commonly considered the most probable causes, even if also lean individuals can be involved. An association of NAFLD with coronary artery disease is currently recognized, but the relationship, if any, with the severity of steatosis and the features of heart function impairment is not yet defined.

Aim:

We aim to challenge if severity of liver steatosis can predict the impairment of heart function.

Patients and methods:

660 NAFLD and 791 non-NAFLD subjects were studied, excluding diabetics, age range 30-65 years old, in a period of observation of 10 years (2002-2011). The severity of liver steatosis is assessed by UltraSound Bright Liver Score (BLS); heart function is assessed by echocardiography as Ejection Fraction (EF), diastolic relaxation, as transmitral E/A Doppler ratio and left ventricular hypertrophy by myocardial mass (LVMM); EKG Sokolow-Lyon index (SL) and T wave shifting (TW_s) on the frontal plane were assessed as well. Age, obesity, dietary profile (assessed as Adherence to Mediterranean Diet Score, i.e. AMDS) and Insulin resistance (assessed by HOMA) were all taken into account for their confounding and synergic effect.

Results:

By Multiple Linear Regression Models, gender balanced , NAFLD severity, assessed by BLS, with BMI, HOMA and SL, explains EF% lower values, ($p<0.0001$);BLS, with age and SL, explains lower E/A ratio ($p<0.0001$) and explains also, with age, HOMA, SLand TW_s, severity of Left Ventricular Hypertrophy, ($p<0.0001$).

Conclusion:

Lower diastolic heart function and left ventricular hypertrophy assessed by echocardiography are strongly associated with the severity of NAFLD also in lean non-diabetic subjects.