

Cristina Cojocaru<sup>1</sup>, E. Circo<sup>2</sup>

## The Incidence Of Hepatic Steatosis Recently Found In Patients With Diabetes Mellitus Type 2 Newly Discovered

<sup>1</sup>Section of Diabets Nutrition of the County Hospital of Constanța<sup>2</sup>Department of Endocrinology, Faculty of Medicine, "Ovidius" University, Constanta

**ABSTRACT.** The nonalcoholic hepatic steatosis is represents one of the most frequent disorders in patients with diabetes mellitus type 2.

The obesity and especially the abdominal adipose tissue distribution represent factors of higher risk for nonalcoholic hepatic steatosis. The echographic examination and FibroScan are very important in identification of this disorder. The study consisted in analysis of the clinical and paraclinical results in order to identify the SHNA (The nonalcoholic hepatic steatosis) incidence.

It must be mentioned the fact that the absence of the abdominal obesity and increased transaminases do not exclude SHNA(The nonalcoholic hepatic steatosis).

**Key words:** nonalcoholic hepatic steatosis, incidence, patients with diabetes mellitus type 2discovered

### Introduction

The nonalcoholic hepatic steatosis is represented by the accumulation of fats in proportion of 5-10% of the liver weight (regularly, predominantly with triglycerides). The assessment of the fat is made by determination of the percentage of lipid-loaded hepatocytes. Considering a simple minimal steatosis like a disease is still a subject of dispute, but it is admitted unanimously that its presence makes the liver more sensitive to other noxes[1].

Another term that shall be defined is that of nonalcoholic. Many medical centers consider that an alcohol consumption of 20-40g/day for men and 20 g/day for women, is the significance level. Some of centers decreased the significance level till 10-20g/day (2 wine glasses/day)[2].

### Material and Methods

This study consisted of a number of 84 of patients with SHNA(The nonalcoholic hepatic steatosis) and diabetes mellitus type 2 newly discovered, that had more parameters such as: biological parameters, abdominal echography, FibroScan and anthropometric measurements in the SECTION of DIABETES NUTRITION OF THE COUNTY HOSPITAL OF CONSTANTA during 2010-2011.

All patients that were included in this study have had AgHBs(the surface antigen of the hepatitis B virus) and Ac anti HCV in order to exclude other types of hepaticsteatosis. Also from their

---

**Cojocaru Cristina MD**

Section of Diabets Nutrition of the County Hospital of Constanța  
145 Tomis Blv., County Hospital of Constanța  
Tel.: +40-722-407-075  
E-mail: cristyna\_cojocaru@yahoo.com

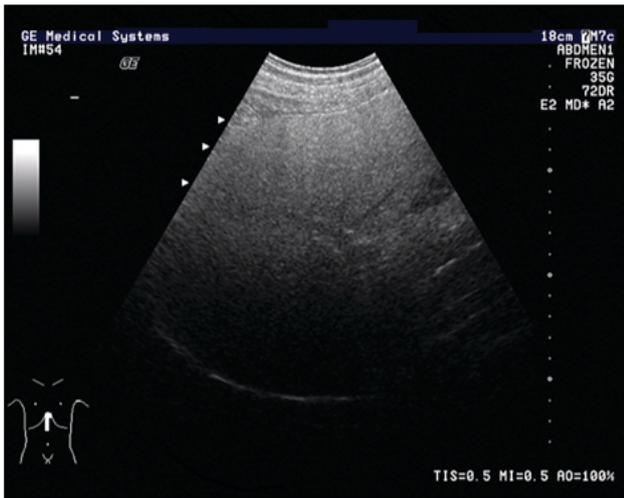


Figure 1 - White large liver back attenuation

anamnesis were excluded other treatments (estrogen, corticosteroids, amiodarone, methotrexate) which induce the hepatitissteatosis. Another questionnaire contained the acohol consumption, which excluded an alcoholic hepatic steatosis. All patients were examined for Gamma-glutamyltranspeptidase (GGT), alanin aminotransferase, total bilirubine, alcalin phosphatase, total cholesterol, HDL-cholesterol(high density lipoproteine), LDL-cholesterol(low density lipoproteine), seric triglyceride, jeuneglycemia and postprandial glycemia. Also, all pateints were measured for height,body weight, abdominal circumference, body mass index(BMI) and report of waist/hips.

## Results

Patients of this study were between 48-65 years old, with a mean of 55 years. The females were predominant. 84 patients of those included in the study were 52 (61,90%)females and 32 (38,10%) were males (Figure 2).

Regarding their age, 42(50%) patients were 48-50 years old, 28(33,33%) patients were 51-60 year old and 14(16,66%) patients were over 60 years old (Figure 3).

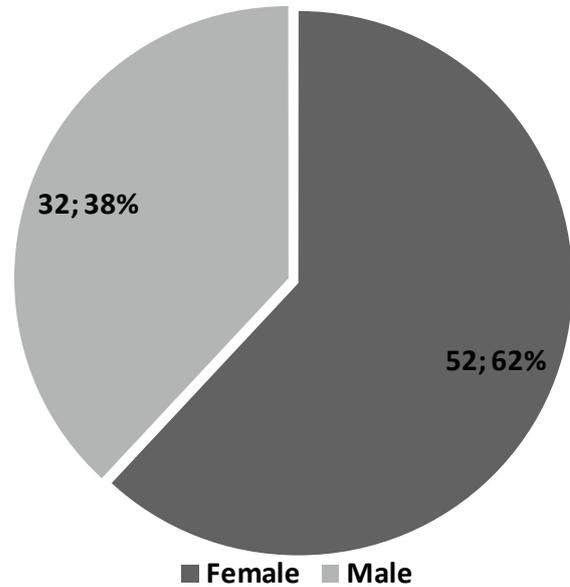


Figure 2 - Age distribution of the patients

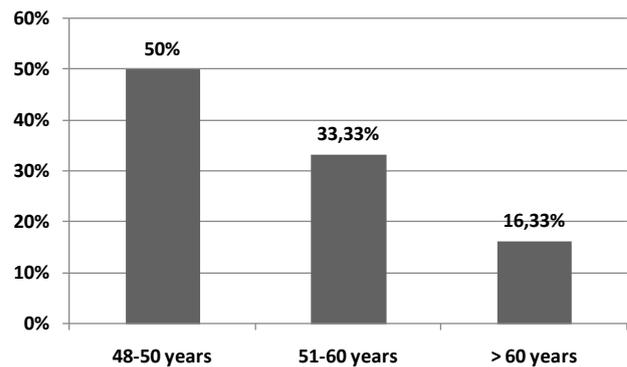


Figure 3 - Age group distribution of the patients

The results of the biological analysis showed: jeuneglycemia and postprandial glycemia in most patients were increased. Triglyceride: a moderately increase in 65(77,38%) patients and an important increase in 19(22,61%) patients. Total cholesterol: a moderately increase in 55(65,47%) patients and

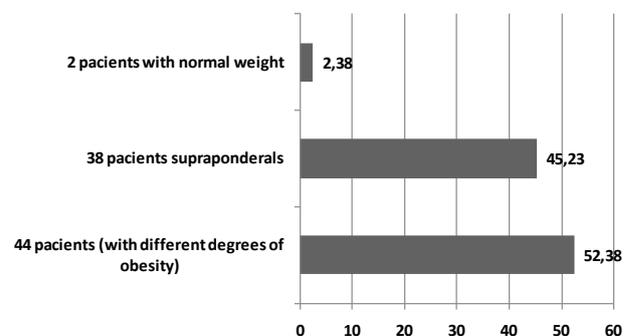


Figure 4 - Group body mass index distribution

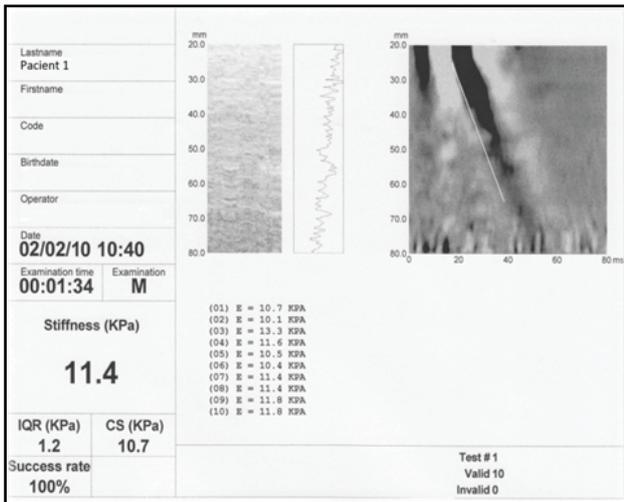


Figure 5 - The initial level of fibrosis

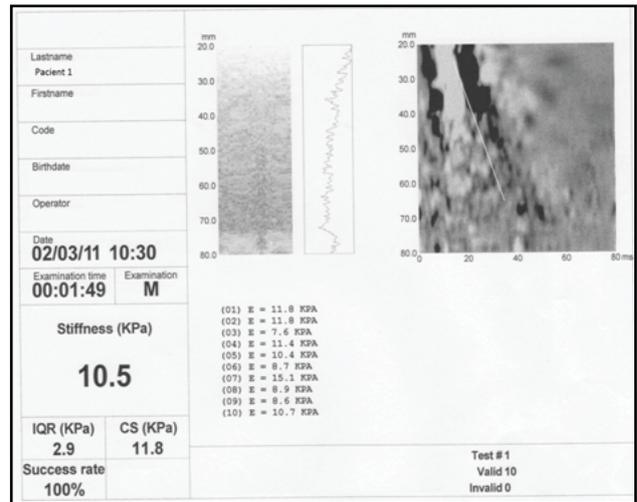


Figure 6 - The level of fibrose after one year

an important increase in 29(34,52%) patients. GGT(Gamma-glutamyltransferase or gamma-glutamyltranspeptidase) in all patients was in normal parameters. TGP and TGO were moderately increased in 52(61,90%) patients and normally in 32(38,09%) patients.

BMI(body mass index) showed 2(2,38%) patients in normal weight, 38(45,23%) patients supraponderals, 44(52,38%) patients with obesity of different levels.

The abdominal circumference presented a big, white liver with posterior attenuation. Fibroscan showed different levels of fibrosis in majority of patients (Figure 5).

## Conclusion

The prevalence of nonalcoholic hepatic steatosis is more increased in patients with diabetes mellitus type 2 newly discovered.

The incidence of nonalcoholic hepatic steatosis is increased in supraponderal and obese patients, especially abdominal obesity. This study underlines a high prevalence of nonalcoholic hepatic steatosis that was biologically and clinically diagnosed. The identification of the risk factors, such as weight, were necessary in order to reduce the hepatic steatosis.

## References

1. REAVEN GM - Insulin resistance and its consequences, type 2 Diabetes Mellitus and Coronary Heart Disease In:
2. LE ROITH D, TAYLOR SI, OLEFSKY JM – Diabetes Mellitus, a Fundamental and Clinical text. 2ND Ed, Lippincot, Williams and Wilkins, 2000.
3. LICHARDOPOL R - Secretia de insulina si insulinorezistenta in etiopatogenia diabetului zaharat tip 2, Ed . Scaiu, 1999.