17. **COMPARISON OF RISK FACTORS FOR DEVELOPING LIVER FIBROSIS IN SUBJECTS WITH AND WITHOUT METABOLIC SYNDROME: A COHORT STUDY.**

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https://www.youtube.com/watch?v=0JIMP5FyI7s&t=28198s

INTRODUCTION: Metabolic syndrome (MS), a combination of diabetes, high blood pressure and obesity, is a well-known risk factor for developing non-alcoholic fatty liver disease, condition that can lead to serious liver damage such as liver fibrosis (LF), which is characterized by excessive deposition of connective tissue, progressing to cirrhosis and hepatocellular carcinoma. Nevertheless, subjects without MS may also develop LF. Non-invasive LF predictors based upon anthropometric and biochemical data have been reported. **AIM:** To compare anthropometric, genetic, and biochemical parameters in subjects with or without MS, and at risk for developing liver fibrosis. **METHODS:** A randomized sample of 200 individuals was taken from the 2015 Nuevo León State Health Survey. Inclusion criteria were age ≥18 and a previously stored blood sample. According to the parameters obtained, subjects were classified as either with or without MS and their NAFLD fibrosis score was calculated considering variables such as age, BMI, glycemia, albumin, platelets, and AST/ALT ratio, to establish a high or low risk of LF. Comparisons of weight, age, BMI, blood glucose, total cholesterol, triglycerides, platelets, albumin, AST/ALT ratio, and HDL were made between groups. DNA was extracted from stored blood samples and genotyped, using q-PCR, according to variants in four genes related to: fatty acid (FA) metabolism (PNPLA3, rs738409), adipocyte differentiation (PLIN2, rs35568725), glucose metabolism (GCKR, rs1260326 and rs780094), and BMI (UCP2, rs659366). Statistical analysis was performed with SPSS v.22. A p value <0.05 was taken as level of significance **RESULTS:** A total of 134 subjects were included and divided into four groups (n): With MS+ high risk (35), With MS+ low risk (34), Without MS+ high risk (32), Without MS+ low risk (33). Table 1 shows the main significative findings. Higher age, low platelet count, and increased AST/ALT ratio, were significantly different in high risk subjects, independently of the presence of MS. No association between the polymorphisms and risk for fibrosis was found. In subjects at high risk for LF, statistical significance was found for high cholesterol blood levels (OR= 20.0 (95%CI 2.87;139.38) in carriers of the T allele of GCKR rs780094 polymorphism. **CONCLUSION**: Aging, thrombocytopenia, and increased transaminases, the last two indicators of liver disfunction, were found as important risk factors for LF in subjects without metabolic syndrome. None of the genetic variants analyzed resulted associated to risk of LF, although sample size could be a factor. GCKR rs780094 variant was found related with risk for hypercholesterolemia, even though dyslipidemia was not found associated with risk of LF in the present study.

Table. Significant Main Risk Factors for Developing Liver Fibrosis in Subjects with and without Metabolic Syndrome.

	With MS +High risk	Without MS + High risk	With MS + Low risk	Without MS +Low risk	p-value
Age	57.81±14.81	59.88±17.52	42.44±12.18	38.44±11.66	0.0001
BMI	30.75±5.41	28.30±5.04	29.61±4.80	26.75±3.91	0.0001
Glucose	144.06±65.17	108.38±50.53	110.91±53.99	99.36±28.40	0.0001
Platelets	206.83±39.72	198.72±47.90	262.15±56.53	262.12±61.20	0.0001
AST/ALT ratio	1.14±0.38	1.56±1.40	0.85±0.28	1.07±0.40	0.0001

Key words: Fibrosis; Hispanic; Genetics. (Source: MeSH-NLM).