

## In Diabetes

### NAFLD AND T2DM

NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) IS CHARACTERIZED BY MORE THAN 5% OF THE ACCUMULATION OF FAT IN THE LIVER AND REFERS TO A SPECTRUM OF DISEASES RANGING FROM PURE STEATOSIS TO NON-ALCOHOLIC STEATOHEPATITIS (NASH) AND CIRRHOSIS, IN THE ABSENCE OF EXCESSIVE OR MODERATE ALCOHOL CONSUMPTION.

NAFLD HAS BECOME THE LEADING CAUSE OF LIVER DISEASE WORLDWIDE. THE PREVALENCE OF NAFLD VARIES DEPENDING ON POPULATION STUDIED AND TYPE OF DIAGNOSTIC TOOLS USED TO SCREEN OR DIAGNOSE THE PATIENTS. THERE IS A STRONG RELATIONSHIP BETWEEN METABOLIC SYNDROME COMPONENTS AND NAFLD PREVALENCE.

OBESITY, TYPE-2 DIABETES, HYPERTENSION, HYPERLIPIDEMIA AND METABOLIC SYNDROME ARE THE MAJOR COMORBIDITIES ASSOCIATED WITH NAFLD. PEOPLE LIVING WITH TYPE 2 DIABETES TEND TO HAVE AN INCREASED RISK OF DEVELOPING NAFLD AND SUBSEQUENT FIBROSIS, CIRRHOSIS AND HEPATOCELLULAR CARCINOMA. THE LINK BETWEEN NAFLD AND DIABETES IS INSULIN RESISTANCE, LEADING TO DEFECTIVE LIPID METABOLISM AND HEPATIC TRIGLYCERIDE (TG) ACCUMULATION IN NAFLD AND COMPENSATORY HYPERINSULINEMIA LEADING TO B-CELL DYSFUNCTION IN TYPE 2 DIABETES. THE PREVALENCE OF NAFLD IS MORE THAN 2 TIMES HIGHER IN TYPE 2 DIABETES MELLITUS POPULATION COMPARED TO THAT IN THE GENERAL POPULATION.

NAFLD IN T2DM IS A RISK FACTOR FOR THE DEVELOPMENT OF CARDIOVASCULAR DISEASE AND OTHER VASCULAR COMPLICATIONS, IRRESPECTIVE OF OTHER KNOWN RISK FACTORS. IN ADDITION TO THE PRESENCE OF DIABETES, AGE (> 45 YEARS), OBESITY (BODY MASS INDEX > 30 KG / M<sup>2</sup>), INSULIN RESISTANCE, ELEVATED LEVELS OF FERRITIN, AND HYPERTENSION ARE OTHER CLINICAL RISK FACTORS THAT CONTRIBUTE TO HIGHER RISK OF NAFLD PROGRESSION. THERE IS A STRONG RELATIONSHIP BETWEEN METABOLIC SYNDROME COMPONENTS AND NAFLD PREVALENCE. EACH NEW METABOLIC SYNDROME COMPONENT CONTRIBUTED SIGNIFICANT TO A RISK OF NAFLD (PREVALENCE OF 4.5 PERCENT IN NON-COMPONENT SUBJECTS TO 80.0 PERCENT IN ALL COMPONENT SUBJECTS). THEREFORE, THE PATIENTS WITH METABOLIC SYNDROME SHOW HIGH PREVALENCE OF NAFLD.

THE NORMAL BIOCHEMICAL TREND FOUND IN HEPATIC STEATOSIS DUE TO NAFLD IS ELEVATED TRANSAMINASE LEVELS, WITH LEVELS OF ALT EXCEEDING ASPARTATE AMINOTRANSFERASE (AST) LEVELS (ALT >AST OR AST: ALT <1). THIS CLASSICAL TREND IS PARTICULARLY USEFUL IN DISTINGUISHING BETWEEN NAFLD, AND ALCOHOLIC LIVER DISEASE, WHICH IS ASSOCIATED WITH A HIGH AST: ALT RATIO. THE MODERATE RISE [50-150 U/L (1 TO 3 TIMES THE UPPER LIMIT OF NORMAL) WITH AST LEVELS LESS THAN THOSE OF ALT] IS ASSOCIATED WITH NAFLD.