



## 16. NONALCOHOLIC FATTY LIVER DISEASE PATHOGENIC MECHANISMS AND NON-INVASIVE DIAGNOSIS

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**Introduction.** Non-alcoholic fatty liver disease (NAFLD) affects a quarter of the world's population and is one of the most common liver diseases. It can progress to liver cirrhosis and hepatocellular carcinoma (HCC). Clinical scoring systems that can be used in general practice as initial screening tools may also be useful in diagnosing NAFLD.

**Aim of study.** To identify the pathogenic mechanisms of NAFLD and non-invasive diagnostic methods.

**Methods and materials.** Was conducted the analysis of the open access scientific publications from PubMed, Google Scholar, NCBI, ScienceDirect databases published between 2018-2023 using the keywords NAFLD, pathogenic mechanisms, and non-invasive diagnosis.

**Results.** NAFLD is considered to be the hepatic manifestation of metabolic syndrome, thus directly associated with insulin resistance, obesity, hypertension and dyslipidemia. NAFLD is often undiagnosed, and patients present to the doctor in late stages, when treatment options are limited. The gold standard for detecting steatosis/fibrosis is liver biopsy, but the method has limitations that include risks to the patient's life. Therefore, new non-invasive strategies are needed. Modern medicine presents a spectrum of informative non-invasive methods that allow timely diagnosis of NAFLD. Among such methods advanced imaging techniques to quantify steatosis (transient elastography and magnetic resonance imaging) and scores calculated from haematological indices and biochemical markers discriminating between different disease stages (fibrosis index-4 (FIB-4), NAFLD fibrosis score (NFS), BARD score, FibroTest, Steatotest, ActiTest, AshTest, NASH Test, HepatoScore, hepamet fibrosis score (HFS), APRI, Fibromax) may be mentioned.

**Conclusion.** Knowledge of the pathogenic mechanisms of development and of the non-invasive NAFLD diagnostic methods is essential for prevention of disease progression.. Early identification of high-risk patients by measuring a number of NAFLD-specific biomarkers is the main goal in preventing complications of hepatic steatosis. **Keywords:** hepatic steatosis, non-alcoholic fatty liver disease, pathogenic mechanisms, non-invasive diagnosis.