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Association between non-alcoholic fatty liver disease and obstructive sleep apnea

Umbro I *et al.* NAFLD and obstructive sleep apnea

Ilaria Umbro, Valerio Fabiani, Mario Fabiani, Francesco Angelico, Maria Del Ben

Abstract

BACKGROUND

Non-alcoholic fatty liver disease (NAFLD) is an emerging liver disease and currently the most common cause of incidental abnormal liver tests. The pathogenesis of NAFLD is multifactorial and many mechanisms that cause fatty liver infiltration, inflammation, oxidative stress and progressive fibrosis have been proposed. Obstructive sleep apnea

Match Overview

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Cited by: 16 Author: Shanshan Jin, Suwen Jiang, Airon Hu
Publish Year: 2018

Obstructive sleep apnea syndrome and fatty liver ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2937104>

Sep 14, 2010 · The presence of metabolic syndrome and obesity with obstructive sleep apnea (OSA) can aggravate non-alcoholic fatty... OSA AND INSULIN RESISTANCE There is a strong link between insulin resistance and excessive deposition of triglyceride in hepatocytes, which is the hallmark of NAFLD[26].

Cited by: 68 Author: Mohamed H Ahmed, Christopher D Byrne
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Obstructive Sleep Apnea and Non-Alcoholic Fatty Liver ...

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Oct 17, 2012 · Obstructive sleep apnea (OSA) is recurrent obstruction of the upper airway during sleep leading to intermittent hypoxia (IH). OSA has been associated with all components of the metabolic syndrome as well as with non-alcoholic fatty liver disease (NAFLD).

Cited by: 58 Author: Aibek E. Mirrakhimov, Vsevolod Y. Polotsky
Publish Year: 2012

Obstructive Sleep Apnea Is Associated with Liver Damage ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4682677>

Baseline Demographic, Laboratory, Metabolic, and Histological Features of 50 Italian Patients with biopsy-proven Non-alcoholic Fatty Liver Disease according to presence or absence of obstructive sleep apnea.

Cited by: 13 Author: Salvatore Petta, Oreste Marrone, Daniele T...
Publish Year: 2015

Nonalcoholic fatty liver disease and obstructive sleep apnea

<https://www.sciencedirect.com/science/article/pii/S0026049516300191>

S Petta, O Marrone, D Torres, M Buttacavoli, C Cammà, V Di Marco, et al. Obstructive sleep apnea is associated with liver damage and atherosclerosis in patients with non-alcoholic fatty liver disease PLoS One, 10 (12) (2015), p. e0142210, 10.1371/journal.pone.0142210

Cited by: 33 Author: Judith Aron-Wisniewsky, Judith Aron-Wisne...
Publish Year: 2016

The association between glycometabolism and nonalcoholic ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6418049>

Purpose. Growing evidence has revealed that nonalcoholic fatty liver disease (NAFLD) is associated with type 2 diabetes. This study aimed to assess the association between glycometabolism and NAFLD in patients with obstructive sleep apnea (OSA).

Cited by: 4 Author: Haibo Ding, Jie-feng Huang, Han-Sheng Xie...
Publish Year: 2019

The association between glycometabolism and nonalcoholic ...

<https://link.springer.com/article/10.1007/s11325-018-1744-1>

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Obstructive Sleep Apnea Is Associated with Liver Damage ...

journals.plos.org/plosone/article?id=10.1371/journal.pone.0142210

We assessed whether obstructive sleep apnea (OSA) and nocturnal hypoxemia are associated with severity of liver fibrosis and carotid atherosclerosis in patients with biopsy-proven NAFLD and low prevalence of morbid obesity.

Cited by: 13 Author: Salvatore Petta, Oreste Marrone, Daniele T...
Publish Year: 2015

Sleep Apnea Can Intensify Non-Alcoholic Fatty Liver Disease

<https://www.liversupport.com/sleep-apnea-can...>

Non-alcoholic fatty liver disease and obstructive sleep apnea frequently affect people who are overweight or obese – and often go undiagnosed. Several studies suggest that NAFLD and OSA are linked – and that sleep apnea has a causal relationship to fatty liver disease progression. The Connection Between NAFLD and OSA

Sleep Apnea and Your Liver | LiverSupport.com

<https://www.liversupport.com/sleep-apneas-liver-association>

Researchers at the University of Manitoba investigated the occurrence of obstructive sleep apnea symptoms in people with diagnosed non-alcoholic fatty liver disease (NAFLD). NAFLD describes two conditions that affect people who drink little or no alcohol. The first is a mild condition, while the second is its progression to a more severe disease.

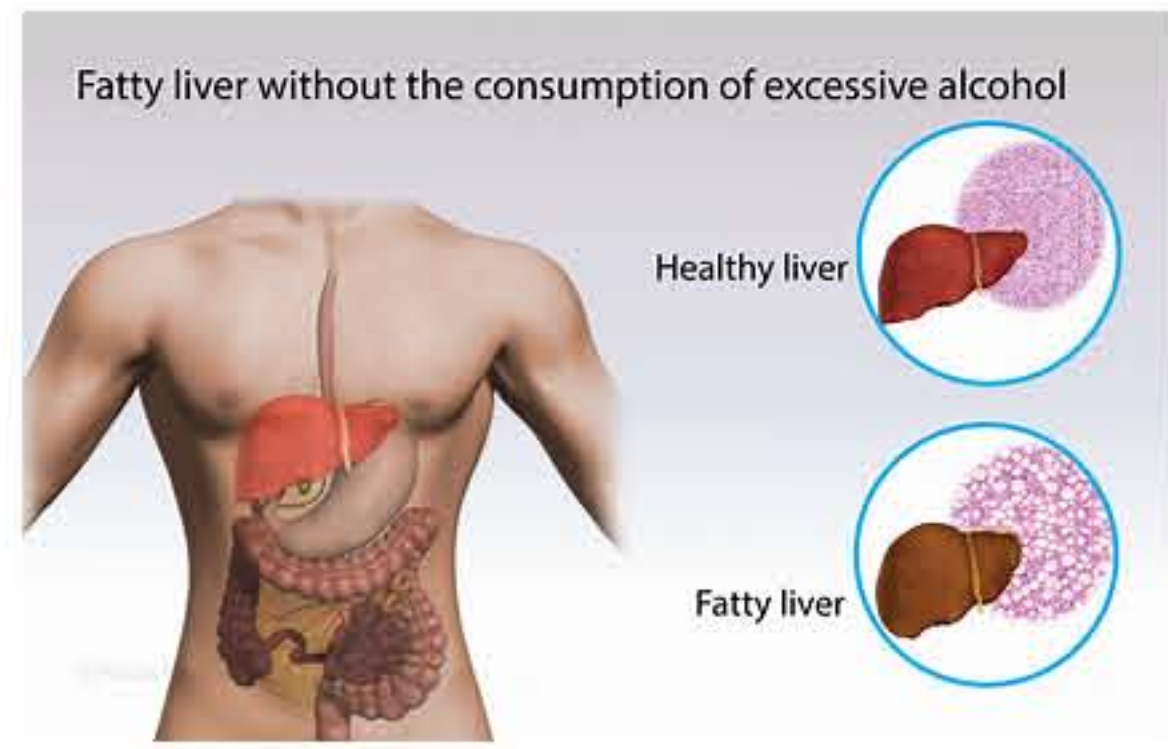
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Non-Alcoholic Fatty Live

Medical Condition

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MAYBE LATER YES



A condition in which fat accumulates in the liver in people who drink little or no alcohol.

- Very common (More than 3 million cases per year in US)
- Requires lab test or imaging
- Treatments can help manage condition, no known cure
- Can last several years or be lifelong

The cause of non-alcoholic fatty liver disease is not clearly understood. It is associated with obesity, insulin resistance, hyperglycemia, and high levels of fat in blood. The condition does not usually cause symptoms. In some cases, fatigue, enlarged liver, and pain in the upper right abdomen is seen. Non-alcoholic fatty liver disease has no specific treatment. It involves treating underlying conditions such as obesity.

Symptoms

Usually asymptomatic. Symptoms may include:

- Fatigue
- Enlarged liver
- Pain the upper right abdomen
- Ascites (swelling in the belly)
- Jaundice
- Enlarged spleen

If it progresses to cirrhosis, the following symptoms are seen:

- Enlarged breasts in men
- Red palms
- Internal bleeding
- Fluid retention

Treatments

Non-alcoholic fatty liver disease has no specific treatment. Treat the underlying conditions and make lifestyle changes.

Medication

- Insulin sensitizers: Controls blood sugar (given to patients of Type 2 diabetes).
Metformin
- Supplements: Improves liver histology in nondiabetic adults.
Vitamin E
- Statins: Lipid-lowering drugs to treat abnormal blood lipids.
Atorvastatin

Self care: Adopting a healthy lifestyle is the main way to manage NAFLD.

- Weight loss: Losing more than 10% of your weight can remove fat from the liver and improve the condition.
- Physical exercise: Exercise for at least 30 minutes every day. It improves symptoms even if you don't lose weight.
- Have a balanced diet including plenty of fruits and vegetables.
- Controlling diabetes and cholesterol levels.
- Avoid alcohol.

Medical procedures: Liver transplantation

Causes

The cause of non-alcoholic fatty liver disease is not clearly understood. It is associated with:

- Obesity
- Insulin resistance
- Hyperglycemia
- High levels of fat in blood

Risk factors include hypothyroidism, hypopituitarism, and polycystic ovary syndrome.

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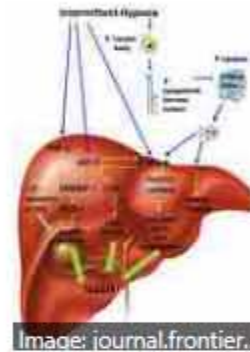


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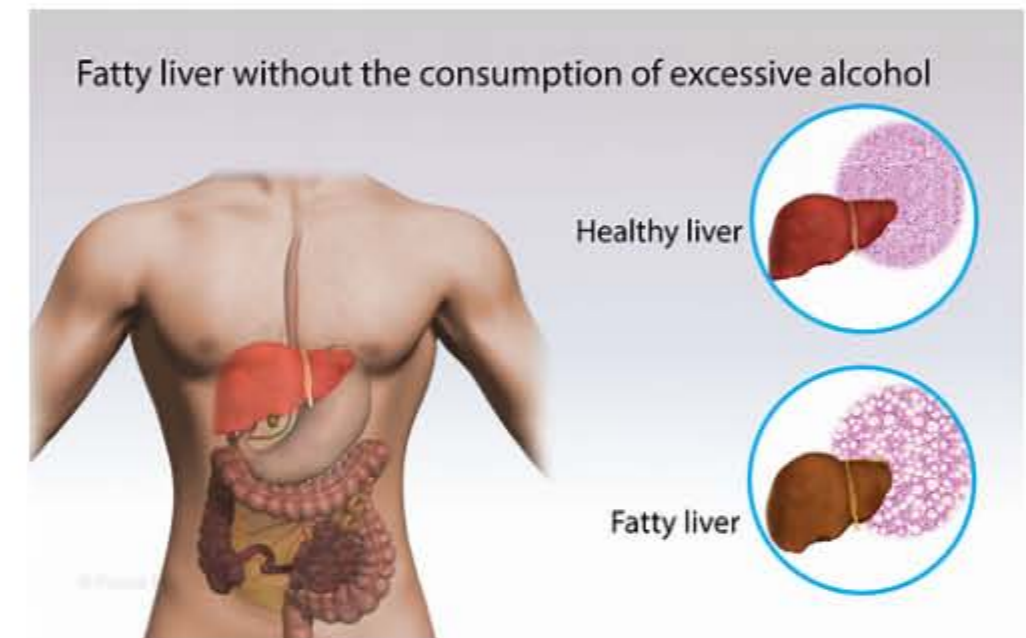
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[Symptoms](#)