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Review on non-alcoholic fatty liver disease and its management with Homoeopathic mother tinctures

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Abstract
Non-alcoholic fatty liver disease (NAFLD) is the commonest liver disorder in western industrialized countries (prevalence≈20%), NAFLD represents increasefat in hepatocytes (steatosis) visualized, e.g. on ultrasound that cannot beattributed to other causes (most commonly alcohol so consider NAFLD if Drinkmale <18u/wk, female <9u). If inflammation is also present (increase LFT, typically increase ALT) = non-alcoholic steatohepatitis (NASH). Rule out othercauses of liver disease and check for associated metabolic disorders (obesity, dyslipidemia, diabetes and hypertension). Progression to cirrhosis may occur biopsy or elastography may be needed. Risk factors for progression are older age; obesity; DM; NASH. Control risk factors; including obesity (bariatric surgeryhelps). Address cardiovascular risk (commonest cause of death). Avoid alcoholconsumption. Ultrasound± AFP twice-yearly. There is no standardized treatment for fatty liver. Treating the underlying cause can easily reverse the abnormal changes in theliver, provided, it is early in the disease. Homoeopathic remedies like Arsenic Album, Nux Vomica, Chelidonium, Cardus m, Apocynum, Lycopodium, Sepia, Phosphorous, Digitalis, Bryonia, Helleborus Niger, Ferrum Met, kali Carb, Iris V, Natrum Carb and many other medicines are very helpful in the treatment of fattyliver symptoms.

Keywords: Fatty liver, homoeopathy, mother tincture, podophyllum, chelidonium, carduus marianus

Introduction
Fatty liver is the accumulation of triglycerides and other fats in the liver cells. The amount of fatty acid in the liver depends on the balance between the processes of delivery and removal. In some patients, fatty liver may be accompanied by hepatic inflammation and liver cell death (steatohepatitis) [1].

Potential pathophysiologic mechanisms for fatty liver include Decreased mitochondrial fatty acid betaoxidation and increased endogenous fatty acid synthesis or enhanced delivery of fatty acids to the liver Deficient incorporation or export of triglycerides as very low-density lipoprotein (VLDL). Tripodi *et al*. reported that in nonalcoholic fatty liver disease (NAFLD), a procoagulant imbalance progresses from steatosis to Meta boliccirrhosis, which may be caused by an increase in factor VIII and a reduction of protein C. The investigators speculated that this imbalance could play a role in the risk for cardiovascular disease and liver fibrosis, conditions commonly associated with NAFLD [2].

The condition most commonly associated with fatty liver disease is metabolic syndrome. This includes conditions such as type II diabetes, obesity, and hypertriglyceridemia. Other factors, such as drugs (eg, amiodarone, tamoxifen, methotrexate), alcohol, metabolic abnormalities (eg, galactosemia, glycogenstorage diseases, homocystinuria, and tyrosinemia), nutritional status (eg, over nutrition, severe malnutrition, total parenteral nutrition [TPN], or starvation diet), or other health problems (eg, celiacsprue and Wilson disease) may contribute to fatty liver disease. It has been estimated, as shown in Figure 1, that although 90–100% of heavy drinkers show evidence of fatty liver, only 10–35% develops alcoholic hepatitis and 8–20% develop cirrhosis. [3] Several risk factors may influence the development of advanced ALD, including Minimum amounts of alcohol intake associated with an increased risk of ALD range from 40 to80 g/day for 10-12 years; safe limits for alcohol use are not clearly defined [4].Genetics play a role in alcohol consumption and alcoholism; early data suggested a genetic predisposition to the development of ALD, mostly related to differences in major hepaticenzymes involved in the metabolism of alcohol (e.g., alcohol dehydrogenase [ADH], acetaldehyde dehydrogenase [ALDH], and thecyto chrome P-450 system [CYP4502E1]) [5].

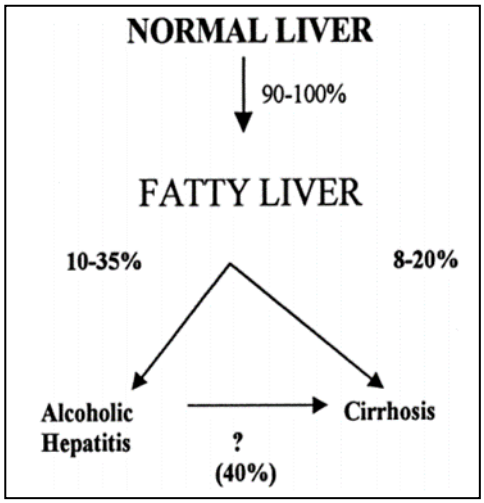

Fig 1: Progression of alcoholic liver disease in heavydrinkers

Stages of Nonalcoholic Fatty Liver Disease (NAFLD) [6].
NAFLD develops in 4 main stages.
Most people will only ever develop the first stage, usually without realizing it. In a small number of cases, it can progress and eventually lead to liver damage if not detected and managed.
The main stages of NAFLD are:
1. Simple Fatty Liver (Steatosis): a largelyharmless build-up of fat in the liver cells thatmay only be diagnosed during tests carried outfor another reason.

2. Non-Alcoholic Steatohepatitis (NASH): amore serious form of NAFLD, where the liver
has become inflamed; this is estimated to affect up to 5% of the UK population.

3. Fibrosis: where persistent inflammation causes scar tissue around the liver and nearby blood vessels, but the liver is still able to function normally.

4. Cirrhosis: the most severe stage, occurring after years of inflammation, where the liver shrinks and becomes scarred and lumpy; this damage is permanent and can lead to liver failure (where your liver stops working properly) and liver cancer.

Clinical Presentation
Fatty liver occurs commonly after the ingestion of a moderate or large amount of alcohol, even for a short period of time. Alcohol-inducedsteatosis usually is asymptomatic. Severe fatty infiltration of the liver can result in symptoms of malaise, weakness, anorexia, nausea, and abdominal discomfort. Jaundice is present in 15%of patients admitted to the hospital.
A thorough clinical history, especially with regard to the amount of alcohol consumption, is essential for determining the role of alcohol in the etiology of abnormal liver test results. History obtained from family members may reveal past alcohol-related problems. No specific test is available to rule out drug-related toxicity, but a good review of all concurrent and recent medications, including over-the-counter medications and alternative treatments, is valuable
in evaluating the possible causes of abnormal liver test results [7].
Most patients with nonalcoholic fatty liver disease (NAFLD) are asymptomatic. However, if, questioned, more than 50% of patients with fattyliver or nonalcoholic steatohepatitis (NASH) report persistent fatigue, malaise, or upper abdominal discomfort. Symptoms of liver disease, such as ascites, edema, and jaundice, may arise in patients with cirrhosis due to progressive NASH. Laboratory abnormalities during blood donations or life insurance physical examinations often reveal elevated alanine aminotransferase (ALT) levels and ultimately lead to the diagnosis of fatty liver disease.

Differential Diagnosis
The differential diagnosis is broad and includes the following conditions:

Alcoholic Hepatitis	Hepatitis E
Alcoholism	Hepatitis, Viral
Alpha1-Antitrypsin Deficiency	Hyperthyroidism
Autoimmune Hepatitis	Hypothyroidism
Celiac Sprue	Isoniazid Hepatotoxicity
Cirrhosis	Malabsorption
Drug-Induced Hepatotoxicity	Primary Biliary Cirrhosis
Hemochromatosis	Primary Sclerosing Cholangitis
Hepatitis A	Protein-Losing Enteropathy
Hepatitis B	Vitamin A Toxicity
Hepatitis C	Wilson Disease
Hepatitis D	

Steatosis can be observed on histology in the following conditions
- Alcohol excess.
- Starvation.
- Total parenteral nutrition (TPN).
- Nonalcoholic steatohepatitis (NASH) – A diagnosis of NASH can be established only when alcohol excess (>10 g/day) can be excluded.
- Drug-induced liver disease (eg, disease caused by valproic acid, tetracycline, antiviral agentssuch as zidovudine, amiodarone, perhexiline maleate, methotrexate, corticosteroids, or estrogens).
- Acute fatty liver of pregnancy [8]. This can occur during pregnancy and likely results from maternal-fetal interactions related to genetic abnormalities in mitochondrial beta-oxidation of fatty acids.
- Metabolic liver disease and other inborn errors of metabolism.
- Reye syndrome.

Laboratory Studies [9].
Blood tests
- Complete blood count
- Liver enzyme and liver function tests
- Tests for chronic viral hepatitis (hepatitis A, hepatitis C and others)
- Celiac disease screening test
- Fasting blood sugar
- Hemoglobin A1C, which shows how stable your blood sugar is
- Lipid profile, which measures blood fats, such as cholesterol and triglycerides

Imaging procedures
Imaging procedures used to diagnose NAFLD include:
- **Abdominal ultrasound,** which is often the initial test

when liver disease is suspected.

- **Computerized tomography (CT) scanning or magnetic resonance imaging (MRI)** of the abdomen. These techniques lack the ability to distinguish NASH from NAFLD, but still may be used.
- **Transient elastography,** an enhanced form of ultrasound that measures the stiffness of your liver. Liver stiffness indicates fibrosis or scarring.
- **Magnetic resonance elastography,** works by combining MRI imaging with sound waves to create a visual map (elastogram) showing the stiffness of body tissues.

Histologic Findings

Histologically, fatty liver is characterized byfat accumulation, which is most prominent in the pericentral (centrilobular) zone. Macrovesicular steatosis is the rule; hepatocytes containing 1 or more large fat droplets displace the nucleus to an eccentric position. Occasional lipid release from rupture of distended hepatocytes may produce amild localized inflammatory response (lipogranulomas) composed predominantly of macrophages and occasional lymphocytes. Although infiltration of liver with inflammatory cells typically is not prominent inpatients with steatosis alone, in some instances, fibrosis around terminal venules (i.e., perivenularfibrosis) or hepatocytes (ie, pericellular fibrosis) has been noted. Early changes observed with the electron microscope include accumulation of membrane-bound fat droplets, proliferation ofsmooth endoplasmic reticulum, and gradual distortion of mitochondria. Micro vesicular steatosis also is being recognized with increasing frequency.Alcoholic foamy degeneration (micro vesicular fatty change) was the term used by Uchida *et al*. to describe a clinical syndrome inpeople with chronic alcoholism. [10] The syndrome is characterized by jaundice and hyperlipidemia andis associated with striking microvesicular steatosisand abundant giant mitochondria observed on liverbiopsy.

Specific histologic findings in NAFLD orNASH include the following

- Steatosis, which usually is macrovesicular butmay be microvesicular or mixed.
- Inflammatory infiltrates consisting of mixedneutrophilic and mononuclear cells, usually without portal infiltrates (in contrast tohepatitis C)
- Ballooning degeneration
- Fibrosis

The first 3 findings are used to calculate the NAFLD activity score, which is determined on a scale of 0 to 8. The stage of disease is determined by the NAFLD activity score and the amount of fibrosis present.

Homoeopathic mother tinctures for fatty liver treatment

Bryonia Alba

Liver region swollen, sore, tensive. Burning pain, stitches; worse pressure, coughing, breathing. Inflammation of the liver. Pains in the live, mostly shooting, tensive or burning. Tractive pains in the hypochondrium, extending to the stomach and the back, in the morning and after dinne, sometimes with vomiting.

Chelidonium Majus

A prominent liver remedy, covering many of the direct reflex symptoms of diseased conditions of that organ. Jaundice due to hepatic and gall bladder obstruction. Liver enlarged [11]. Stitches in liver and spleen. Shooting stitching through liver to back, crampy pain inner angle of scapula. Right (and left) hypochondrium and scrobiculuss cordis leense and painful on pressure [12]. Constant pain under the lower and iner angle of right scapula. Hepatic diseases; jaundice, pain in right shoulder [13].

Carduus marianus

The action of this drug is centered in the liver and portal system causing soreness, pain, jaundice. Hemorrhages, especially connected with hepatic disease. Dropsical conditions depending on liver disease and when due to pelvic congestion and hepatic disease. Gallstone disease with enlarged liver. Pain in region of liver. Left lobe very sensitive. Hyperaemia of liver, with jaundice [11]. Liver region sensitive to pressure. Pressure, tension and stitches in liver on lying on left side. Swelling, sensitiveness and induration of left lobe of liver, causing by compression respiratory embrassment and caugh with thick expectoration. Liver disease affecting lungs and causing hemoptysis [12].

Ceanothus Americanus

Aneamic patients where liver and spleen are at fault. Pain in liver and back [11]. Immediately after dinner, dull pain in region of liver. Full feeling in region of liver. Pain in liver worse lying on right side [12].

Chelone Glabra

A remedy in liver affections with pain or soreness of the left lobe of the liver and extending downwards. Dyspepsia with hepatic torpor. Jaundice [11]. Pain or soreness of the left lobe of the liver and extending downwards. Chelone acts in a line between the hilus of the liver and fundus of the uterus. Debility from loss of tone of digestive organs or liver or from exhausting diseases [12].

China officinalis

Pain right hypochondrium. Liver and spleen swollen and enlarged. Jaundice [11]. Shooting and pressive pains in the hepatic region, especially when is touched. Hardness and swelling of the liver [12].

Chionanthus Virginica

A prominent liver remedy. Sore; enlarged liver, jaundice and constipation. Hepatic region tender jaundice with arrest of menses [11]. Uneasy sore feeling in region of right hypochondrium, extending to left iliac region. Uneasy sensations in region of spleen and liver. Hypochondrium of liver. Obstructions of liver in malarious districts. Soreness in region of liver, quick weak pulse, stools undigested and showing entire absence of bile, urine almost black. Chronic cases of jaundice. Jaundice recurring every summer [12].

Podophyllum Peltatum

Is especially adapted to persons of bilious temperament. It affects chiefly the duodenum, small intestines, liver and rectum. Torpidity of the liver; portal engorgement with a tendency to haemorrhoids, hypogastric pain, fullness of superficial veins, jaundice. Liver region painful, better rubbing part [11]. Fulness in right hypochondrium, with flatulence, pain and soreness. Twisting in right

hypochondrium with burning. Stitches in hypochondria, worse while eating. Pain region of liver with inclination to rub the part with the. Excessive secretion of bile, great irritability of liver. Hepatitis with costiveness, tenderness and pain in region of liver [12].

Conclusion

Homeopathy is one of the most popularholistic systems of medicine. The selection ofremedy is based upon the theory of individualization and symptoms similarity by using holistic approach. This is the only way through which a state of complete health can be regained by removing all the sign and symptoms from which the patient is suffering. The aim of homeopathy is not only to treat fatty liver symptoms but to address its underlying cause and individual susceptibility. Asfar as therapeutic medication is concerned, several remedies are available to treat fatty liver symptoms that can be selected on the basis of cause, sensations and modalities of the complaints.

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