

## 18 months Follow up of 60 Patients with Non-Alcoholic Fatty Liver Disease (NAFLD) after Pharmacological Treatment

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## Abstract

Non-Alcoholic Fatty Liver Disease (NAFLD) as the most prevalent liver disease, can be simple steatosis as non-progressive subdivision of NAFLD, or non-alcoholic steatohepatitis (NASH) that may progress to cirrhosis and its complications. Also, NAFLD is closely correlated with diabetes mellitus, cardiovascular and chronic kidney diseases. Ultrasonography is the first line modality to detect this asymptomatic disease. As well, it is used for screening NAFLD patients. Weight loss increased physical activity and changing diet are still the main treatment of the choice for NAFLD which cause reducing hepatic fat. As there is no approved pharmacotherapy for NAFLD, this study aimed to investigate the effect of some specific medications in decreasing liver steatosis. As the outcomes of this study represented, 91% of NAFLD patients with pharmaceutical therapy optimized for each patient, regardless of other treatment modality, showed improvement in the extent of steatosis.

## Introduction

Non-Alcoholic Fatty Liver Disease (NAFLD), is defined by fat accumulation which is one of the most common chronic liver diseases with increased prevalence and incidence worldwide [1]. However, it is normal to exist tiny amount of fat in liver cells, when more than 5% of liver weight is build up with triglycerides and free fatty acids, it is considered as fatty liver [2]. There are some metabolic risk factors associated with NAFLD. Obesity, type 2 diabetes mellitus (T2DM), as well as dyslipidemia are closely related to NAFLD [3]. NAFLD patients may develop progressive fibrosis which yields eventually to progressive steatosis with associated hepatitis, fibrosis, cirrhosis, and in some cases hepatocellular carcinoma (HCC) [4]. Clinical outcomes are consonant with fibrosis stage and is the strongest predictor for overall and liver-related mortality [5]. NAFLD as a multifaceted disease, imposes health and economic burden in the community as well as patient's family. Since prospective view of NAFLD from recent studies represented, increasingly high prevalence of obesity correlated with increased risk of NAFLD as well as cardiovascular events, and all-cause mortality [6]. Lifestyle modification while sedentary behavior, dietary fat and increased BMI are main risk factors for NAFLD, detection of NAFLD in early stages and management of it can greatly decrease this burden [7].

## Methods

There were 60 patients included in these 18 months follow up. Each individual was assessed for laboratory features of blood glucose and triglyceride. Ultrasonography as routine method of detection and grading of steatosis was performed for everyone as well, so NAFLD was diagnosed based on ultrasonography [8]. Patients included in this study,

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**Table 1:** Characteristics of study participants

		All individuals (n=60)
Sex, n (%)	Male	23 (38.3)
	Female	37 (61.7)
Age (years),	median (IQR)	39 (46)
	range (min-max)	18-71
FBS,	median (IQR)	138 (6)
	range (min-max)	90-314
Triglyceride, n (%)	median (IQR)	216 (5)
	range (min-max)	146-318
NAFLD grade, n (%) before treatment	Grade 1	10 (16.7)
	Grade 2	36 (60)
NAFLD grade, n (%) after treatment	Grade 3	14 (23.3)
	Normal	11 (18.3)
	Grade 1	37 (61.7)
	Grade 2	12 (20)

n: number; IQR: interquartile range; FBS: Fasting Blood Glucose; NAFLD: non-alcoholic fatty liver disease.

were followed up for 18 months. Pharmacological treatment was performed for individuals based on patients' weight, high blood glucose, triglyceride and grading of steatosis. Milk thistle 2-4 mg/kg, vitamin E 100 mg, daily, with or without Metformin (5 mg Bib) were prescribed for patients within 18 months. patients' prescribed lifestyle modification including diet and physical activity was not considered in result of this study.

## Results

This study included 60 NAFLD patients diagnosed with ultrasonography. Patients' age ranged from 18 to 71 years old. 23 (38.3%) of individuals were men and 37 (61.7%) of them were women. The prevalence of different grades of fatty liver were 10 (16.7%) with grade 1 fatty liver, 36 (60%) with grade 2 fatty liver and 14 (23.3%) with grade 3 fatty liver.

Data on patients' characteristics is summarized in table 1. As data summarized in table below showed, improvement in 91% of patients were seen. Since pharmacological therapy was only considered, further follow up correlates with lifestyle modification could affect the outcome.

## Conclusion

My clinical practice within years besides, following up of 60 patients within 18 months in this study, indicated that combination therapy of Vitamin E, Metformin and Milk Thistle found to be effective in decreasing liver steatosis.

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