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# Study of the Prevalence of Nonalcoholic Fatty Liver Disease (NAFLD) in Hail Region

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**Abstract:** ***The study aimed to determine the prevalence of nonalcoholic fatty liver disease and its sonographic appearance for population in Hail region. The design was descriptive non-interventional analytical done by using ultrasound investigation to scan the liver. The study was carried out on 80 patients at King Khalid Hospital came to the radiology department for abdominal ultrasound. The study conducted from 1.10.2014 to 28.2.2015. The study revealed that 52.5% of patients were suffering from nonalcoholic fatty liver disease, 90.48% of them were with diffuse highly echogenic sonographic appearance.***

**Keywords:** Prevalence, Fatty infiltration, liver, Hail

## 1. Introduction

With the increasing prevalence of obesity and diabetes mellitus (DM) worldwide, there is a significant increase in the incidence and prevalence of NAFLD [1, 2].

### 1.1 Nonalcoholic fatty liver disease (NAFLD)

Nonalcoholic Fatty Liver Disease (NAFLD) is characterized by accumulation of fat, mostly in the form of triglycerides, in the cytoplasm of hepatocytes, exceeding 5% to 10% by weight, as demonstrated by histology or imaging. It requires exclusion of other causes of steatosis, such as excessive alcohol consumption, drugs, or genetic diseases [3, 4].

#### 1.1.1 Types of nonalcoholic fatty liver disease

- Nonalcoholic fatty liver (NAFL) is a generally benign condition in which the fatty infiltration is simple and there is no inflammation [5].
- Nonalcoholic steatohepatitis (NASH) in which there is fatty infiltration along with liver inflammation (steatohepatitis) [5].

#### 1.1.2 Clinical features

Most patients with NAFLD are asymptomatic [6], yet some may experience nonspecific fatigue and malaise, nausea and right upper abdominal pain or discomfort [7].

### 1.2 Prevalence of NAFLD

In the United State, according to study conducted from 1988 to 2008, the prevalence of nonalcoholic fatty liver disease (NAFLD) increased from 5.51% (1988-1994) to 9.84% (1999-2004) to 11.01% (2005-2008) [8].

### 1.3 Sonographic appearance of NAFLD

#### 1.3.1 Diffuse fatty liver

Marked increase in hepatic echogenicity with poor or no visualization of the hepatic vessels [9].

**Figure 1:** Diffuse fatty liver
*(From the researchers)*

#### 1.3.2 Focal fatty liver

Regions of increased echogenicity in a background of normal liver parenchyma [9].

#### 1.3.3 Focal fatty sparing

Islands of normal tissue within a fatty infiltrated liver [9].

### 1.4 NAFLD riskiness

Most people with NAFLD do not develop serious liver disease. However, because NAFLD has become very common in recent years (probably because of the epidemic in obesity), NAFLD has become a common cause of cirrhosis. Also, cardiovascular disease is the most common cause of illness and death in people with NAFLD [10].

## 2. Results

**Table 1:** prevalence of NAFLD

| *Liver* | *Frequency* | *%* |
|---|---|---|
| Normal | 38 | 47.5 |
| Abnormal(fatty) | 42 | 52.5 |
| ***Total*** | ***80*** | ***100*** |

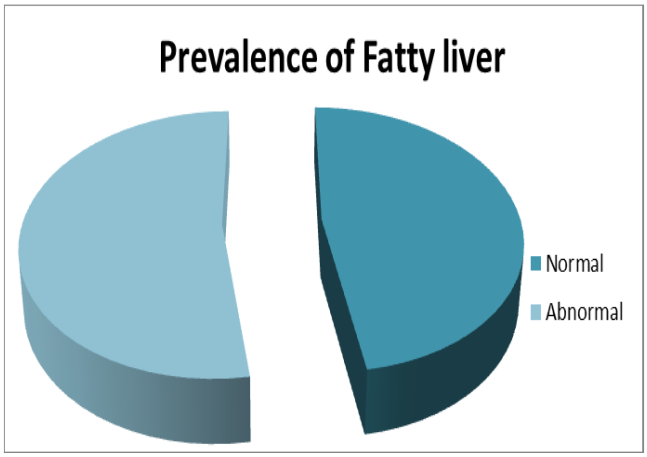


**Figure 2:** prevalence of NAFLD

The prevalence of NAFLD during the period from September, 2014 to March, 2015 was 52.5% (42 cases), that was among the patients who came to the ultrasound department for abdominal Ultrasound.

**Table 2:** fatty liver sonographic appearance

| *Infiltration* | *Frequency* | *%* |
|---|---|---|
| Diffuse | 38 | 90.48 |
| Focal fatty infiltration | 3 | 7.14 |
| Focal fatty sparing | 1 | 2.38 |
| ***Total*** | ***42*** | ***100*** |

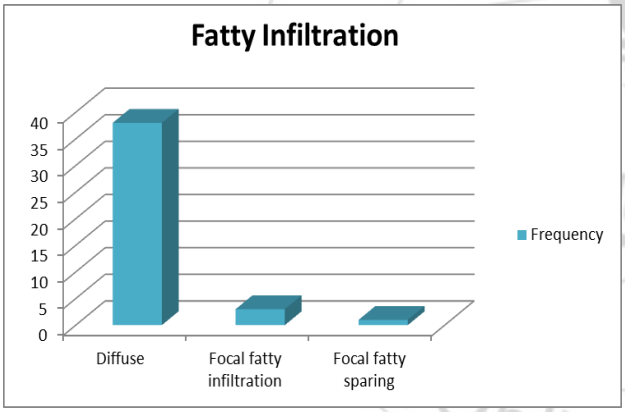


**Figure 3:** fatty liver sonogrphic appearance

90.48% (38 cases) of the fatty liver patients were diffuse fatty infiltration, 7.14% were focal fatty infiltration and 2.38% were focal fatty sparing.

## 3. Conclusion

- The prevalence of nonalcoholic fatty liver disease (from 1.10.2014 to 28.2.2015) was 52.5%.
- 90.48% of the fatty infiltrations were diffuse.

## 4. Recommendation

Abdominal Ultrasound Periodic inspection is very important to detect fatty liver disease and accordingly avoid the disease riskiness.

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