Evaluation of the relationship between fatty liver grading and subcutaneous fat thickness of the anterior abdominal wall, demographic factors and the presence of underlying disease in patients referred to the ultrasound ward of Alavi Hospital in Ardabil from beginning to end of 1400.

Abstract

Background: Non-alcoholic fatty liver is the most common cause of fat accumulation in the liver, which causes liver damage. The prevalence of this disease is increasing all over the world. Considering that the pathogenesis of the disease is not known correctly, it is important to know the causes of the disease in order to prevent and reduce the exacerbation of the disease. In most cases, the etiology of non-alcoholic fatty liver is insulin resistance and metabolic syndrome, and it is also related to obesity. The symptoms of the disease vary from a slight increase in liver enzymes to cirrhosis and hepatocellular carcinoma of the liver. Ultrasonography method is used as the first step in investigating liver diseases and is an accurate method for measuring subcutaneous fat. Considering that there is no evidence of a direct relationship between the thickness of subcutaneous fat and the amount and severity of fatty liver in previous studies, there is a need for more research.

Aim: To investigate the relationship between fatty liver grading and the thickness of the subcutaneous fat of the anterior abdominal wall and demographic factors.

Materials and methods: During this cross-sectional-analytical study, outpatients who referred for ultrasound due to causes other than liver problems were included in the study. Informed consent was obtained from the patients to participate in the study. These patients were measured by the radiologist for ultrasound and grading of liver fat and the thickness of the subcutaneous fat in the front of the abdomen in the RUQ region. The liver was graded from 0 to 3, which were considered normal, mild fatty liver, moderate fatty liver, and severe fatty liver, respectively. Subcutaneous fat thickness was measured in millimeters. Patient information including height, weight, age, gender, liver fat grading, subcutaneous fat thickness and underlying diseases were entered into the questionnaire.

Results: 47% of patients had normal liver (grade 0). 42.5% had mild fatty liver (grade 1), 9.4% had moderate fatty liver (grade 2) and 1.1% had severe fatty liver (grade 3). The average thickness of the subcutaneous fat of the anterior abdominal wall was 16.31 mm. In this study, a significant correlation was found between the thickness of the subcutaneous fat of the anterior abdominal wall and the degree of fatty liver in the study subjects (P<0.001). Also, a significant correlation was

found between BMI and fatty liver grading in the study subjects (P=0.001). So that with the increase in the severity of fatty liver, the BMI of people increased.

Conclusion: Increased morbidity and mortality due to cardiovascular diseases and diabetes is probably one of the most important clinical features associated with non-alcoholic fatty liver disease. This disease may predict some diseases such as metabolic disorders, diabetes and cardiovascular diseases. The cornerstones of nonalcoholic fatty liver disease management are modification of the body's metabolic environment (such as treatment of concurrent metabolic disorders such as hypertension, dyslipidemia, and glucose intolerance/diabetes) and encouraging an active lifestyle (such as dietary management and moderate daily physical activity) to Combat weight gain and improve insulin sensitivity. Adherence to moderate caloric restriction and increased physical activity lead to a decrease in liver fat.