



The pancreas originates from the foregut, a precursor tube as part of the digestive tract, a dorsal and ventral bud.

As it develops, the ventral bud rotates to the other side and the two buds fuse together

Background and aim: Non-alcoholic fatty pancreatic disease (NAFPD) or fatty pancreas emerged as a health problem parallel to obesity, and have serious complications more than Non-alcoholic fatty liver disease (NAFLD) as both liver and pancreas develop from the same embryological origin. NAFPD can lead to diabetes mellitus, chronic pancreatitis, pancreatic insufficiency and lastly adenocarcinoma of the pancreas. Also there are extrapancreatic complications to the cardio-vascular system is reported too more than expected. The aim of the study is to evaluate the association between both aortic, carotid intima-media thickness abnormalities (AIMT, CIMT) as subclinical atherosclerosis and in NAFPD grading patients.

Methodology : Eighty eight patients with NAFPD recruited from Shib El-Khokh hospital, Menofya governorate were divided into 4 groups, group (1) diabetics with normal Body Mass Index (BMI), group (2) diabetics with BMI over 25 kg/m², group (3) non diabetics with normal BMI, group (4) non diabetics with BMI over 25 kg/m². All routine investigations were done. NAFPD (grades from 0-3) and AIMT were evaluated using transabdominal ultrasonography (TUS). If the thickness > 0.5 mm is abnormal for both AIMT and CIMT. CIMT was evaluated with neck ultrasonography.

Results: The mean age of the studied subjects was 44.08±12.41 years. The average body mass index (BMI) was 29.73±8.15 kg/m². Males made up 73 percent of the patients, while females made up 27 percent. The mean of AIMT is increased in diabetic groups and non diabetics obese group with highly statistically significant difference, while the mean of CIMT is increased in diabetics only with statistically significant difference, also the grade of fatty pancreas increased in obese and diabetics either obese or not with highly statistically significant difference. The more increasing of fatty pancreas grading, the more increasing of AIMT and CIMT. At cut-off, 1.15 mm the

sensitivity of AIMT in the prediction of the fatty pancreas was (86.4%), specificity (72.7%) and area under the curve was 0.896 in non-diabetics with normal BMI and diabetics with BMI >25 while, At cut-off , 0.75 mm the sensitivity of CIMT in the prediction of the fatty pancreas was (95.5%), specificity (86.4%) and area under the curve was 0.94 in non-diabetics with normal BMI and diabetics with BMI >25.

Conclusions: Fatty pancreas is significantly associated with obesity and diabetes. CIMT and AIMT are significantly higher among patients with higher grade of NAFLD indicating that atherosclerosis is significantly associated with high grade of fatty pancreas.

Key Words: Atherosclerosis , carotid and aortic Intima-media thickness , Non-alcoholic fatty pancreatic disease