

J.S. Department of Veterans Affairs

Introduction

- The prevalence of non-alcoholic fatty liver disease (NAFLD) in the general population undergoing bariatric surgery is reported at 84% -95%.
- Sleeve gastrectomy is the most common bariatric surgery performed in the US and leads to significant weight loss and improvement in metabolic syndrome.
- Based on manufacture's recommendations, accuracy of vibration controlled transient elastography (VCTE) with ECHOSENS Fibroscan results are not confirmed in patients with body mass index (BMI) greater than 30 kg/m². • We evaluated the accuracy of Fibroscan results in individuals with obesity compared to the gold standard liver biopsy performed at time of sleeve
- gastrectomy.

Methods and Materials

- Retrospective study of 90 patients who underwent sleeve gastrectomy between January 1, 2018- September 19, 2021 at a VA Hospital.
- Patients with known alcohol use or without a fibroscan prior to the procedure were excluded.
- A single pathologist reviewed the liver biopsies and provided a NASH Activity Score (NAS) for each sample.
- A single fibroscan technician performed fibroscan assessments with interpretation.
- Summary statistics were used to determine the prevalence of NAFLD at time of surgery and sensitivity and specificity for Fibroscan testing compared to liver biopsy.

Utility of Transient Elastography in Fibrosis Assessment in Veterans Undergoing Sleeve Gastrectomy: A Cross-Sectional Study

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Results

- 34% of patients had an abnormal ALT at baseline.
- There was no evidence of hepatic synthetic dysfunction. Pre-op median liver stiffness measurement was 5.2 kPa.
- Fibroscan revealed 93% with mild fibrosis (F0-F1) and 7% showed F2 fibrosis
- Pathology showed less than 90% mild fibrosis and 10% fibrosis stage F2.
- Fibroscan results had a negative predictive value of 92%
- Fibroscan nor pathology revealed F4 (cirrhosis) fibrosis stage.

Table 1. Baseline Characteristics. 54% female. 50% AA, 31% white, 2% Asian/PI					
Variable	Mean	Unit			
Age	47.6	Years			
Weight	114.8	Kilogram			
BMI	39.7	Kg/m2			
AST/ALT	22.4/31	Units/L			
Albumin	4.4	g/dl			
Platelet	269	K/cm3			
HbA1C	6.2	mmol/mol			
Fasting Blood Sugar	111	mg/dl			
LDL	119.7	mg/dl			
Triglyceride	145.3	Mg/dl			
FIB 4	0.9	mg/dl			

Table 2. Pathologic characteristics of liver biopsy during sleeve and pre-procedure fibroscan assessment

Variable	0	1	2	3
Fibroscan fibrosis		93%	7%	0%
Biopsy fibrosis	18%	71%	11%	0%
Fibroscan steatosis	4%	8%	8%	80%
Biopsy Steatosis	14%	43%	39%	3%

References

- sleeve gastrectomy.
- kg/m^2.



Non-invasive testing utilizing Fibroscan predicted the lack of advanced fibrosis and may be useful for risk stratification prior to bariatric surgery. Possible future research into post bariatric surgery fibroscan assessment to evaluate if changes in steatosis or fibrosis based on amount of weight loss.

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Discussion

• There is a high prevalence of fatty liver disease without fibrosis in the veteran patients undergoing

Fibrosis staging is nearly 94% accurate in our patient population with high negative predictive value in patients with a BMI greater than 35

• As there were no patients in this time period with cirrhosis via fibroscan nor biopsy, we were unable to determine the positive predictive value and accuracy of fibroscan among this population.

in Veterans Undergoing Sleeve Gasterectomy
≥F2 Fibrosis
n Pathology

Conclusions