



Motivational Factors of Weight Loss in NAFLD Patients: Data From University Hospital in WV



John Kinney BA¹, Xiaoliang Wang, M.D, Ph.D¹, Zachary Wright, BA¹, Shima Ghavimi M.D¹, Wesam Frandah, M.D¹, Todd Gress, M.D¹, Ahmed Sherif, M.D¹, Tejas Joshi M.D¹, Fredy Nehme, M.D²;

¹Marshall University, Joan C. Edwards School of Medicine, Internal Medicine; ²University of Texas MD Anderson Cancer Center

Introduction

The obesity epidemic affects 69% of the US adult population. We investigated variables that motivate weight loss (WL) in obese patients. One study found that adults diagnosed with an illness linked to obesity had a goal towards reducing risks from excess weight OR (1.45 [1.22-1.73]) (1). The severity of liver disease in patients with NAFLD is directly linked to weight and concomitant metabolic disorders. Multiple studies have shown that WL is effective at altering the natural history of NAFLD. Our study investigates these motivations of WL and looked to ascertain a correlation between learning the diagnosis of severe fibrosis via transient elastography (TE) and lifestyle modification.

Results

17 of 24 patients had lost weight (reducers) when they returned for LB. Average BMI in these patients was reduced by 0.52. At the time of TE, 9 of 17 reducers had elevated AST and/or ALT. Of those that lost weight 6 were male and 11 were female. 14 reducers met the criteria for Metabolic Syndrome. 13 reducers had a sufficient decrease in liver fat percentage to be classified into a lower stage of liver steatosis. Statistical analysis via t-test revealed Female patients had a greater mean WL in comparison to men. Patients with cirrhosis achieved greater WL than those with severe fibrosis.

Patients, n	24
Men, n (%)	9 (37.5%)
Women, n (%)	15 (62.5%)
Age, mean in years (std dev)	53 (+/- 12.05)
Hyperlipidemia, n (%)	17 (70.83%)
HTN, n (%)	16 (66.67%)
EtOH users, n (%)	13 (54.17%)
Stage 0-2 fibrosis, n (%)	6 (25%)
Stage 3 Fibrosis, n (%)	3 (12.5%)
Stage 4 Fibrosis, n (%)	15 (62.5%)
Initial BMI, mean (std dev)	35.7 (+/- 9.9)
Second BMI, mean (std dev)	34.7 (+/- 9.33)
Fibroscan CAP score, mean (std dev)	286 dB/m (+/- 63.6)

Id	Frequency	Percent	Valid Percent	Cumulative Percent
0	1	4.0	4.0	4.0
1	1	4.0	4.0	8.0
2	4	16.0	16.0	24.0
3	3	12.0	12.0	36.0
4	16	64.0	64.0	100.0
Total	25	100.0	100.0	

Id	Frequency	Percent	Valid Percent	Cumulative Percent
0	3	12.0	12.0	12.0
1	3	12.0	12.0	24.0
2	2	8.0	8.0	32.0
3	8	32.0	32.0	64.0
4	9	36.0	36.0	100.0
Total	25	100.0	100.0	

	Cirrhosis	N	Mean	Std. Deviation	Std. Error Mean
Weight_difference	Yes	15	1.0733333	1.06198377	.274203030
	No	9	.96666667	1.76351921	.587839736

t-test for Equality of Means					
Significance	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	Lower	Upper
.427	.854	1.0666667	-5.7927254	-1.082272	1.29554098

	Sex	N	Mean	Std. Deviation	Std. Error Mean
Weight_difference	M	9	.76666667	1.32947358	.443157860
	F	15	1.1933333	1.35143663	.348939436

t-test for Equality of Means					
Significance	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	Lower	Upper
.230	.439	1.4266667	-3.6465799	-1.4014448	7.48111498
.230	.460	1.4266667	-3.6465799	-1.4155798	7.62240311

Methods

In this IRB approved retrospective analysis, 24 patients with chronic liver disease (CLD) diagnosed with severe fibrosis on TE had undergone an indicated liver biopsy (LB). Upon diagnosis, patients were educated about their disease process, severity of disease, and the role WL has in amelioration of NAFLD. Weight loss goal of 5% was recommended to reduce steatosis (2). We recommended the Mediterranean diet. Each patient returned for a liver biopsy an average of 58 days later, and no later than 6 months. BMI, liver fibrosis, liver steatosis, and aminotransferase levels were measured at date of TE. BMI and percent steatosis on LB were recorded. Patients without TE diagnosing fibrosis and being prior to LB were excluded.

Discussion

Our study supports the hypothesis that patient's diagnosis of severe liver damage served as a catalyst for weight loss. 71% of our study population lost weight. The psychology of weight loss is still not well understood, but the level of danger perceived by our patients appeared to be a factor in their modification of lifestyle behaviors. Different weight loss results may be based on a patient's individual perception of their risk for complications