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Impact of Medical Nutrition Therapy on Weight Loss

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- Obesity has become very prevalent and poses a major risk for development of diabetes, cardiovascular diseases, and other life-threatening diseases
- Structured Medical Nutrition Therapy (MNT) can help patients lower risk factors for these diseases.
- Many studies have shown that MNT is an effective tool in lowering HbA1c levels in diabetic and prediabetic patients.
- MNT has also shown to have significant improvement in other metabolic parameters such as weight, BMI, lipids and waist circumference.
- Our study looked at the effect of MNT on weight loss as well maintenance and weight fluctuations in a general population (vs. previous focus on diabetics)

Objectives & Hypothesis

- Research Question
 - We observed the effect of Jefferson's Medical Nutrition Therapy Program metabolic parameters. Variables analyzed were total weight loss, weight change after completion of the program, HbA1c, blood pressure, and lipids
 - Our study population included 29 females and 4 males with BMI>25
- Hypothesis
 - Participation in the MNT program will lead to weight loss and improvement in metabolic parameters including HbA1c, BP, and lipids.

Approach & Results

- These are initial pilot findings from our retrospective chart review
- Our pilot study included 33 patients (29 female, 4 males) with a BMI>25.
 - Subjects with hx of bariatric surgery, heart failure, malignancy, renal failure, uncontrolled disorders such as anemia, hypothyroidism and B12 deficiencies were excluded to control for confounding variables in weight change.
- Intervention: As part of the MNT program subjects attended group nutrition classes with a nutritionist.
- Data was collected from medical charts in EPIC
 - Parameters including weight, BP, lipids, and A1c were collected from the patient top 2 frequented departments to control for variability in measurements among offices.
- Analysis was done using Ttest

Approach & Results

Variable: WTCHANGEYR1

N	Mean	Std Dev	Std Err	Minimum	Maximum
14	23.6250	22.7828	6.0889	-4.6000	67.6700
Mean	95% CL Mean	Std Dev	95% CL Std Dev		
23.6250	10.4706 36.7794	22.7828	16.5165 36.7040		

Variable: WTCHANGEYR2

N	Mean	Std Dev	Std Err	Minimum	Maximum
15	-8.7547	15.5278	4.0093	-48.0000	18.6700
Mean	95% CL Mean	Std Dev	95% CL Std Dev		
-8.7547	-17.3537 -0.1556	15.5278	11.3683 24.4889		

Patients lost mean of 23 pounds in the first year (p 0.0019) = 10% of body weight

In the second year, patients gained back 9 pounds (6% body weight); however still there was an average net loss of 14 pounds (4% body weight)

There was significant variability in weight changes over the first year and not as much variability in the second year □ indicating that weight change stabilized over time

Approach & Results

Variable: A1CDiff

N	Mean	Std Dev	Std Err	Minimum	Maximum
7	0.1929	0.4911	0.1856	-0.4000	1.0500

Mean	95% CL Mean	Std Dev	95% CL Std Dev
0.1929	-0.2613 0.6471	0.4911	0.3165 1.0815

A small decrease in A1c and glucose was noted. This result was not statistically significant although we think it would improve with a larger sample size

Triglycerides decreased slightly

Total cholesterol increased, LDL slightly decreased, and HDL went up

Though not statistically significant these initial findings lead us to believe that with a larger sample size we may see significant changes.

Conclusions

- Patients lost an average of 23 pounds in the first year.
- They gained back an average of 9 pounds over the next year
- There were fluctuations and variability in weight during the first year
 - No as much the second year which indicates stabilization over time
- Other parameters such as HbA1c and lipids did appear to improve as well though the results were not significant
 - A larger sample size could show significant changes
- Our findings do confirm that MNT helps with sustained weight loss. A further analysis with a greater sample size is underway (new Jefferson MS1s) and could help us better understand the variability in weight changes and other metabolic parameters such as HbA1c and lipids.
- Our findings provide support of the effectiveness of MNT for reducing risk factors for diabetes and cardiovascular diseases

Future Directions

- Increase sample size of this study to about 200–300 patients (ongoing)
- Consider addition of control group
- Development of a prospective program that includes nutritional counseling, motivational interviewing, activity tracking watches, MyFitnessPal, and activity tracking apps

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