

A Study on Assessment of Degree of Percentage of Weight Loss in Post Bariatric Surgery Patients after 2 Years of Surgery

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Abstract: *Bariatric surgery is a surgical procedure that involves either reducing the stomach size or reducing the absorptive surface and hence results in weight reduction. The concept of bariatric surgery is becoming popular among obese population for reducing weight although in India it is still in up growing concept. The present investigation was focused on assessment of degree of percentage of weight loss in Post bariatric surgery patients after 2 years of surgery. This present investigation mainly carried out with 16 samples collected through telephonic follow up based on secondary data (previously collected data) and objective were to assess weight change, to assess calorie and protein intake, complications, Micronutrients deficiency after 2 years of post surgery. Results showed Mean weight loss was 22 and 35 kgs followed by mean BMI was $35.46 \pm 7.69 \text{ kg/m}^2$ after 2 years of post surgery while before surgery BMI was $43.62 \pm 8.6 \text{ kg/m}^2$. Different complications encountered mostly were hair fall (37.5%), vomiting (18.5%), abdominal pain (12.5%) and neurological symptoms (6.25%). Average calorie and protein consumed were 1450 kcal and 44.61g respectively. It was evident from study that weight loss percentage among exercising group ($19 \pm 9\%$) were than non exercising group ($13 \pm 11\%$). Among this sample few develop some deficiency like iron, calcium, vitamin D and started taking supplements advised by doctors.*

Keywords: bariatric surgery, supplement, hair fall, weight loss, nutrition

1. Introduction

Bariatric surgery is a surgery that gives an opportunity to people who wish to reduce their weight in course of months. As comparing to dieting, it is very easy process to lose weight for whom dieting is difficult to follow or already tired of following special diet but not getting sufficient results. This surgery gives result just in few months after surgery and continues showing result till years if followed with proper diet restriction. Percentage of weight loss is different for different individuals. According to NICE guidelines 2006, surgery should offered to those whose all no surgical measure were unsuccessful, except in adult having BMI more than 50 kg/m^2 . Bariatric surgery cause drastic weight inpatients till one month of surgery but after few months this weight loss may be stopped due to change in eating habit or due to other medical reasons. A study showed there was excess weight loss of 61.2% and on other hand, this surgery also have any side effects. One of few studies showed 26% of patients had anaemia, 9% of them had vitamin B₁₂ and also 39% of patients were diagnosed with vitamin D deficiency (Edo O. Aarts, 2011). Few factors affects it weight process viz Exercise, Special Diet Chart, Life style modification. As per studies patient might lose 60 percent of excessive weight in course of six months and 77 percent of excessive weight loss till 1 year of time and on average patients maintain lose of excessive weight as much as 50 percent after five years of post bariatric surgery. Besides weight loss, this surgery creates wonder in prevention and remission of type 2 diabetes mellitus, hypertension, hyperlipidemia (Adams *et.al*, 2017). These benefits attract many patients to opt this surgery.

This over all study has following purposes

- To know the degree of weight loss even after 2 years of Bariatric surgery.
- To know impact of Diabetes mellitus after 2 years of this surgery
- Other side effects

Study methods

Telephonic interview of patients from precollected data

Study site

Hyderabad city

Study Sample

Out of 50 precollected samples data 16 samples were able to contact as others didn't respond to calls

Various criteria

It involved inclusion and exclusion criteria. These are as follows

Inclusion criteria

It includes following conditions

- Willingness to participate in the study.
- Willingness to participate in the study.
- All subjects that had get done their bariatric surgery two years back at Apollo Health City, Jubilee hills, Hyderabad
- Both the genders are included.
- Only Indian patients

Exclusion criteria

- Subjects not willing to participate in the study.
- Patient who do not opted for bariatric surgery in the particular hospital
- Foreign country patients.

Study tool

It included a pre structured questionnaires and precollected data (secondary data)

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2. Findings

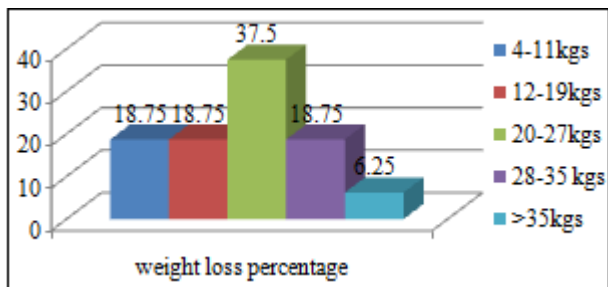


Figure 1.1: Weight loss among bariatric patients after 2 years of post bariatric surgery

Above figure shows maximum weight loss attained was 20-27kgs with a percentage of 37.5 of project samples followed by minimum of more than 35 kgs in 6.25percent of samples population

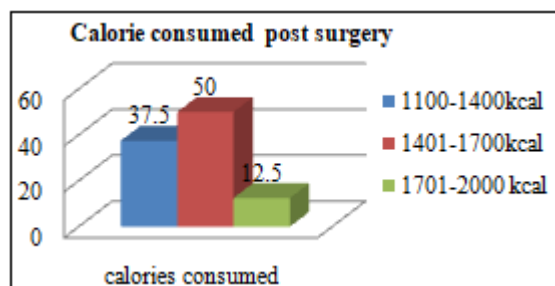


Figure 1.2: Calories consumed after 2 years of post surgery

This figures shows maximum calories attained by respondents were 1401-1700kcal with 50 percent while 12.5 percent of respondents were consuming more calories (1701-2000kcal).Calories are the major concern of persistent weight loss if intake of calories is high degree of weight loss decreases.

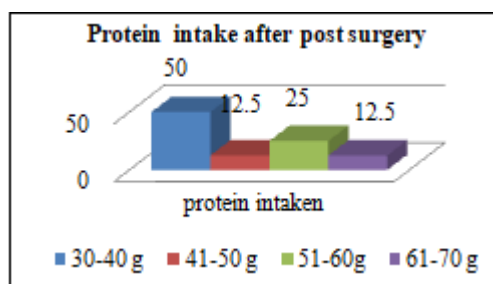


Figure 1.3: Protein intake after 2 years of post bariatric surgery

Maximum protein consumed by respondents was 30-40g with percentage of 50 of respondents even after 2 years of post bariatric surgery while only few percent (12.5%) consumed 61-70g of protein. Proteins are vital for metabolic functions if it is consumed in fewer amounts it causes other complication like hair fall, neurological problem etc

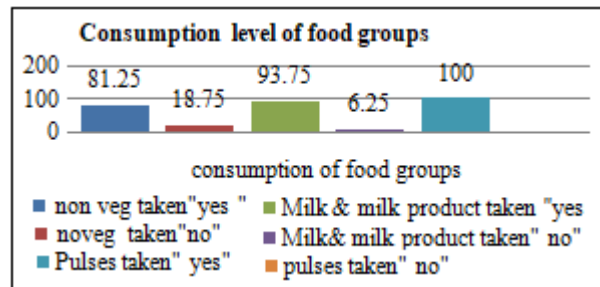


Figure 1.4: Consumption of food groups after 2 years of post surgery among post bariatric patients

Acceptance of pulse protein among respondent were more followed by milk and milk product and then non veg items.

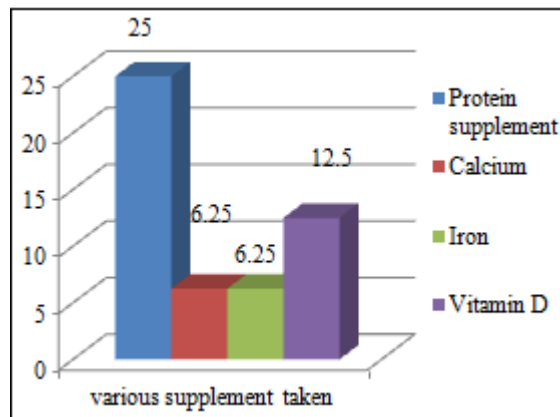


Figure 1.5: Consumption of different supplement after 2 years of post surgery

As from figure 1.3 maximum protein consumed was only30-40g which was very less to maintain body homeostasis hence 1.5 shows 25 percent of respondent were advised to take protein supplements followed by 6.25 percent of respondent for calcium and iron. Deficiency of protein, also effects calcium and iron status of body. Hence supplementation is very important. According to guidelines 500-600 micro gram citrate is essential twice daily to meet the requirement and added if iron is needed, it should be to supplemented and keep in mind the keep a gap of two or long hours from taken of calcium or iron supplement to avoid interaction (Richardson *et.al*, 2009)

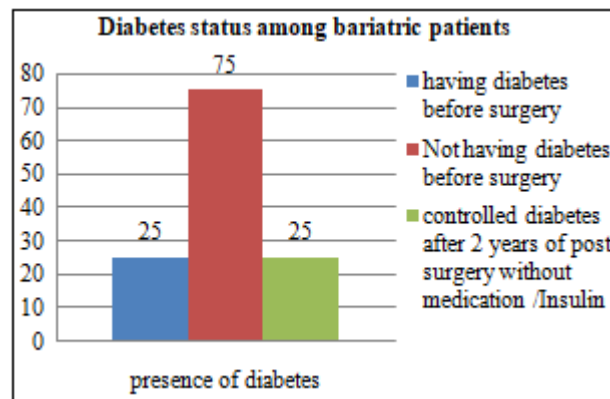


Figure 1.6: Comparison of Presence of diabetes among bariatric patients before surgery and under controlled after 2 years of surgery without medicine or insulin

This above shows among all respondents who had diabetes mellitus in uncontrolled state became controlled after 2 years of surgery. Cutting down of calories and reducing the absorptive site due to surgery cause control over Type

2Diabetes mellitus. A study showed in 10 years of follow of post bariatric surgery that there is great control in Diabetes (Leconelli, *et.al*, 2011). Besides weight loss benefit and better glycemic control, it has some long term side effects.

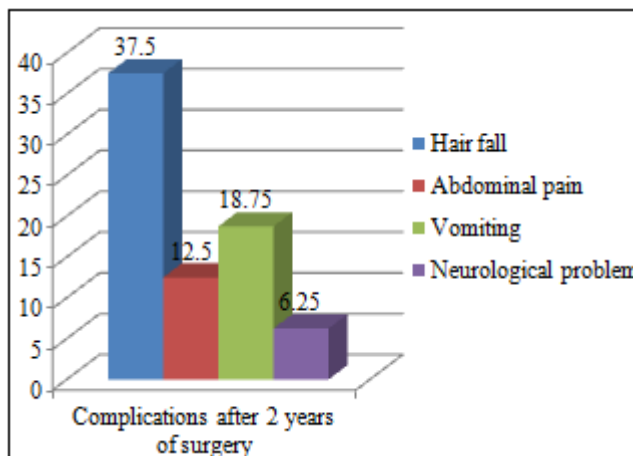


Figure 1.7: Complications encountered by patients after 2 years of post bariatric surgery

Chronic deficiency of vitamin and minerals and special protein cause Hair fall, Neurological symptoms. Due to small stomach size, over eating cause vomiting and pain abdomen. Vitamin Deficiency, protein deficiency causes neurological complications like central demyelination, axonal polyneuropathy, optical neuritis, radiculitis etc in a Brazilian studies(Fragoso, *et.al*, 2012)

Study also shows that exercise group had greater weight loss than non exercise group of respondents that is 35kgs and average calories consume by exercise group was 1400kcal and 50g of protein while non exercise group consumed average of 1500 kcal and 44 g of protein.

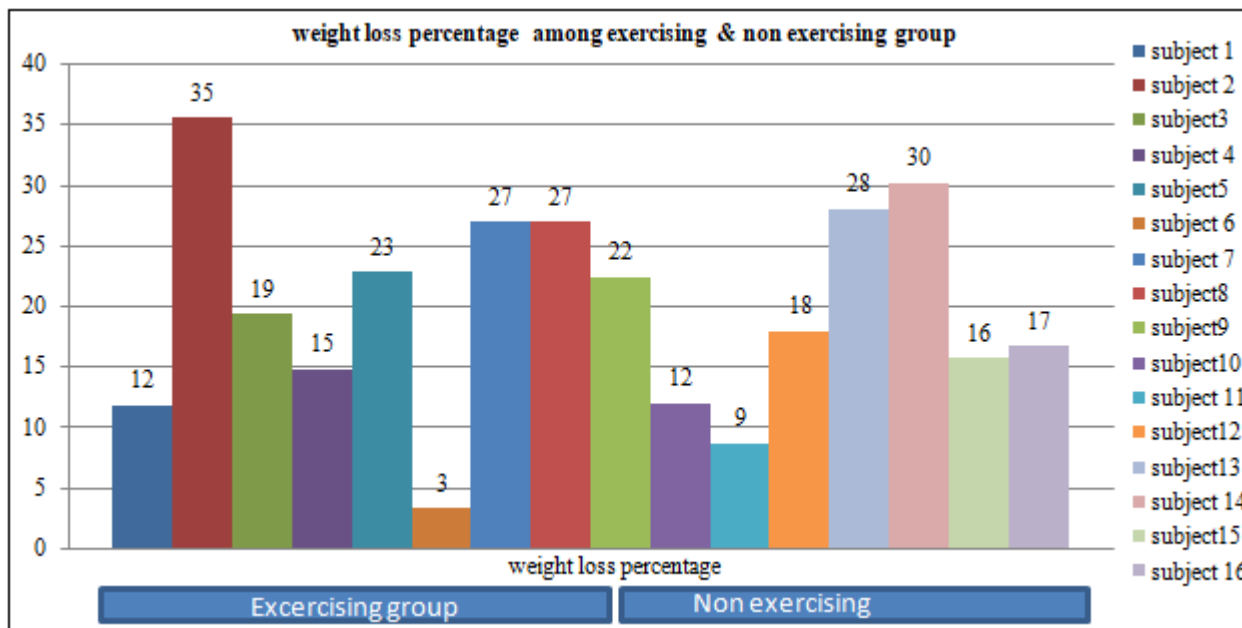


Figure 1.8: Weight loss % among exercising and non exercising group

Study shows that exercise is very beneficial in terms of maintenance of weight loss trend in post bariatric surgery patients, doing even low level physical activity(less than 7500steps/day) was also seemed to be helpful in patients who are inactive prior to surgery (Carnero, *et.al*, 2018)

who were patients in trends of ingesting low calorie and normal protein to high protein with exercise seemed to loss more weight loss trends during these period, although some complications were also remain predominant like hair fall, Neurological symptoms, vomiting if over ingested etc.It showed great control in blood sugar in post bariatric patient who had uncontrolled blood sugar due to sedentary life style / over eating behavior.

3. Conclusion

The study dealt with follow up of post bariatric surgery patients after 2 years of surgery. It shows great weight loss up to 35kgs in two years of post bariatric surgery. It shows

4. Acknowledgements

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