

ORIGINAL RESEARCH

ASSESSMENT OF EFFECT OF DIETARY ADVICE ALONG WITH NEW COMPLETE DENTURES ON NUTRITIONAL STATUS IN EDENTULOUS PATIENTS

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ABSTRACT

Background:Edentulous individuals consume significantly lower amounts of protein and multiple other nutrients, including fiber, calcium, and some vitamins. The present study was conducted to assess effect of dietary advice along with new complete dentures on nutritional status in edentulous patients.

Materials & Methods:48completely edentulous patients of both genders were divided into 2 groups. Group I received dietary advice and group II received both dietary advice and denture care advice. Denture fabrication was done following all standardized method in both groups. Mini nutritional assessment test and serum ferritin levels was measured at follow up at 6 and 12 months of denture insertion.

Results: Out of 48 patients, males were 22 and females were 26. The mean serum ferritin level at 6 months in group I was 140.6 ng/ml and in group II was 156.2 ng/ml. At 12 months, it was 190.2 ng/ml in group I and 246.8 ng/ml in group II. The difference was significant ($P < 0.05$). The mean MNA-SF value at 6 months was 8.4 and 12.2 and at 12 months was 11.2 and 13.6 in group I and II respectively. The difference was significant ($P < 0.05$).

Conclusion: Denture care along with dietary advice proved to be beneficial in improving nutritional status in edentulous patients.

Key words:Denture care, nutritional status, serum ferritin

Introduction

Edentulous individuals consume significantly lower amounts of protein and multiple other nutrients, including fiber, calcium, and some vitamins, because they avoid a number of food types, particularly fresh fruit and raw vegetables and other hard and tough foods, when compared with dentate individuals.¹ Several lines of evidence show a relationship between increased intake of some macronutrients and micronutrients and a reduced risk of certain illnesses. Most notably, there is strong evidence that a diet high in fruit and vegetables protects against obesity, diabetes, cardiovascular disease, and some cancers.²Calcium is significantly lower in edentulous individuals due to consumption of lower amount of raw fruits and vegetables and also other hard and tough food substance. Several studies have also shown that there is decreased risk of many diseases like cancer, diabetes, cardiovascular diseases with adequate consumption of proper healthy balance diet including raw fruit and vegetables.³

The edentulous patients are already on lesser nutritive diet because of inability to chew. This leads to further deterioration of health. The complete denture treatment for such patients definitely improves the chewing ability of patients.⁴The instructions for usage of denture are always given to the patients. At the same time, it is also very significant to provide structured dietary advice for better health of such patients.⁵The present study was conducted to assess effect of dietary advice along with new complete dentures on nutritional status in edentulous patients.

Materials & Methods

The present study comprised of 48 completely edentulous patients of both genders. The consent was obtained from all enrolled patients.

Data such as name, age, gender etc. was recorded. 2 groups were formed. Group I received dietary advice and group II received both dietary advice and denture care advice. Denture fabrication was done following all standardized method in both groups. Mini nutritional assessment test and serum ferritin levels was measured at follow up at 6 and 12 months of denture insertion. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I Distribution of patients

Total- 48		
Gender	Males	Females
Number	22	26

Table I shows that out of 48 patients, males were 22 and females were 26.

Table II Assessment of serum ferritin level in both groups

Duration	Group I	Group II	P value
6 months	140.6	156.2	0.09
12 months	190.2	246.8	0.04

Table II, graph I shows that mean serum ferritin level at 6 months in group I was 140.6 ng/ml and in group II was 156.2 ng/ml. At 12 months, it was 190.2 ng/ml in group I and 246.8 ng/ml in group II. The difference was significant (P < 0.05).

Graph I Assessment of serum ferritin level in both groups

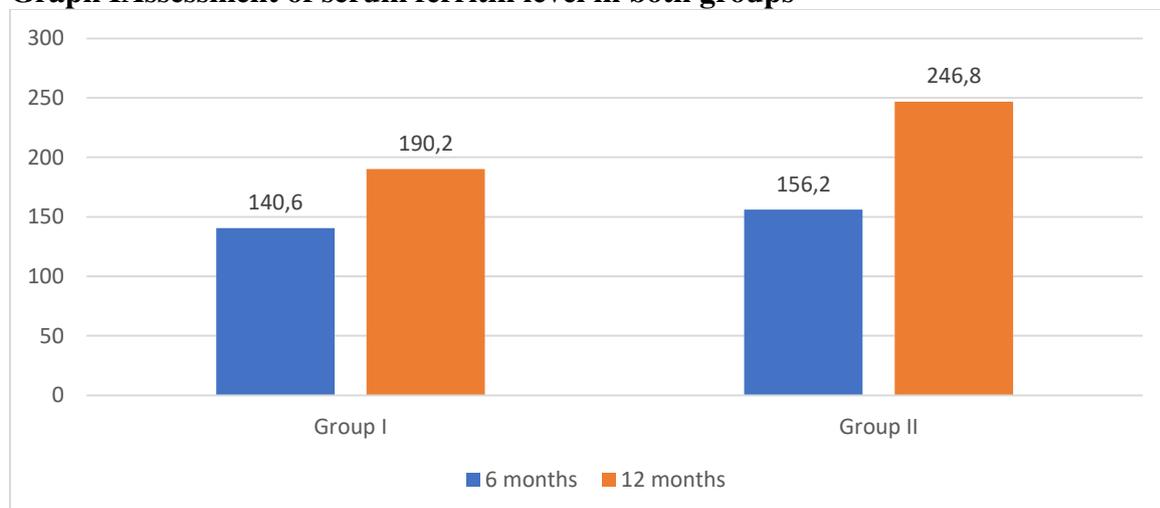
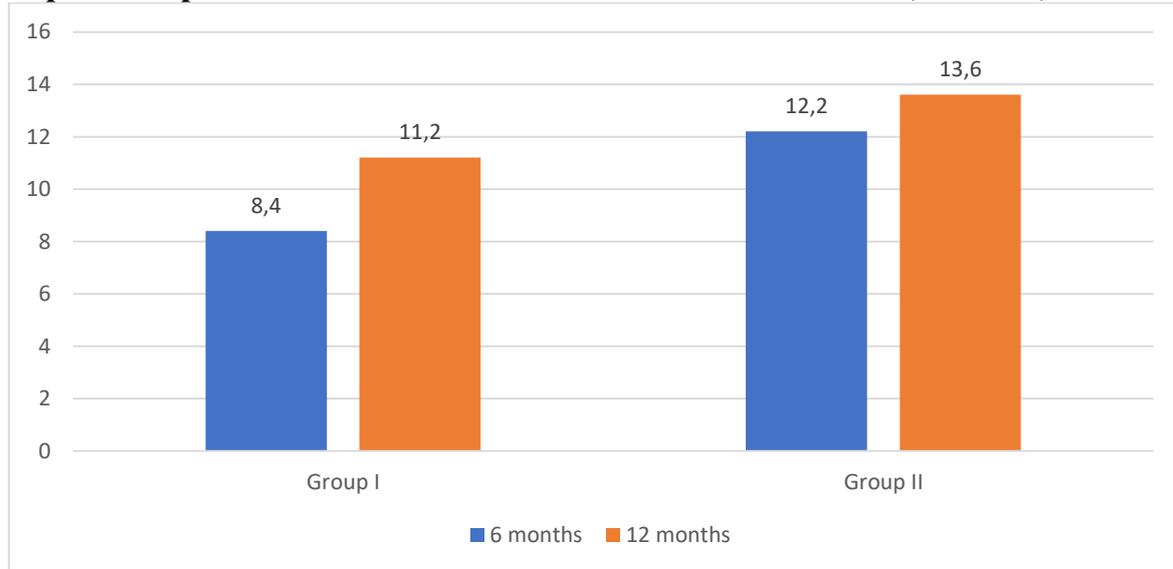


Table III Comparison of Mini-Nutritional Assessment-Short Form (MNA-SF)

MNA-SF	Group I	Group II	P value
6 months	8.4	12.2	0.01
12 months	11.2	13.6	0.02

Table III, graph II shows that mean MNA-SF value at 6 months was 8.4 and 12.2 and at 12 months was 11.2 and 13.6 in group I and II respectively. The difference was significant ($P < 0.05$).

Graph II Comparison of Mini-Nutritional Assessment-Short Form (MNA-SF)

Discussion

Dietary counselling is necessary. There has been little research investigating the impact of providing dietary counselling to edentulous individuals wearing complete dentures.⁶ A combination of use of a denture adhesive and simple dietary advice in the form of government-issued dietary pamphlets issued by dentists produced significant improvement in dietary intake among edentulous individuals wearing current complete dentures for more than one year; there was especially an improvement in the number of portions of fruit and vegetables.^{7,8} The present study was conducted to assess effect of dietary advice along with new complete dentures on nutritional status in edentulous patients.

We found that out of 48 patients, males were 22 and females were 26. Nagarajani Prakash et al⁹ conducted study on 94 completely edentulous patients in between 50-80 years and who were in need of complete denture for the first time. Nutritional status of the patients was assessed by him both before and after the treatment. Authors explained the importance of well-balanced diet and regular nutritional status assessment to the patients during treatment and after 6 and 9 months the nutritional status of the patients was checked by him using MNA form, then he compared the individual score for each question in the form and total score obtained at baseline with those obtained after 6 and 9 months and concluded that 100% patients are well nourished compare to 83.0% at baseline.

We found that mean serum ferritin level at 6 months in group I was 140.6 ng/ml and in group II was 156.2 ng/ml. At 12 months, it was 190.2 ng/ml in group I and 246.8 ng/ml in group II. P.F Allen¹⁰ conducted a study on 35 patients who has requested replacement of existing complete denture. A questionnaire containing number of validated social resources, oral health related quality of life and nutritional assessment measures was completed by all

participants prior and 2 months post treatment. As a result, he concluded in his studies that further efforts are required to promote healthy diet in these individuals and it should not be assumed that this will occur following provision of new denture.

We found that mean MNA-SF value at 6 months was 8.4 and 12.2 and at 12 months was 11.2 and 13.6 in group I and II respectively. Goyalet al¹¹ aimed to give dietary advice along with prosthetic treatment and thought of evaluating their nutritional status. 25 patients were given complete denture prosthesis along with nutritional advice and the outcome will be assessed using OHIP-EDENT, Mini Nutritional Assessment Test and Serum Ferritin levels at baseline six and nine months. Simple dietary advice that can be implemented by a dentist would be more practical in clinical practice than tailored dietary counselling. So, giving simple nutritional advice in combination with new complete denture would improve nutrient intake among edentulous individuals.

Previous research has shown that, in many cases, prosthodontic rehabilitation alone, such as complete dentures, implant overdentures and other prosthetic treatments, for older patients in the absence of tailored dietary counselling is inadequate to attain a significant improvement in nutritional status.^{12,13}

Selection of few patients could lead to variation in findings obtained in this study, hence inclusion of bigger cohort of patient is advisable.

Conclusion

Simple dietary advice that can be executed by a dentist is more practical in daily clinical practice than personalized dietary counseling, which requires the additional services of a nutritionist and a further appointment. Authors found that denture care along with dietary advice proved to be beneficial in improving nutritional status in edentulous patients.

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