

Study of the Therapeutic Effect of Oral Nutritional Supplements During Hemodialysis: Physician's Experience



Medical Science

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ABSTRACT

Poor Nutritional Status is a well documented consequence of chronic kidney disease (CKD). It is an Important Prognostic Predictor for patients Starting Dialysis (1,2). In fact, the so-called uremic malnutrition is recognized to be the strongest risk factor for adverse outcomes and death in patients suffering from CKD(3). Further protein energy malnutrition (PEM) is also commonly observed in (CKD) patients undergoing hemodialysis and has been associated with increased morbidity and mortality among these patients(4). Life-Threatening undernutrition was detected in 20-36% of French patients undergoing dialysis in a study report in 1999 the major determinants efficacy(5)

Introduction:-

Poor Nutritional Status is a Well documented consequence of chronic kidney disease (CKD) It. Is an Important Prognostic Predictor for patients Starting Dialysis(1,2) . In fact , the so-called uremic malnutrition is recognized to be the strongest risk factor for adverse outcomes and death in patients suffering from CKD(3) . Further protein energy malnutrition (PEM) is also commonly observed in (CKD) patients undergoing hemodialysis and has been associated with increased morbidity and mortality among these patients(4). Life-Threatening undernutrition was detected in 20-36% of French patients undergoing dialysis in a study report in 1999 the major determinants efficacy(5).

We report the physician's experience concerning the effect of predialytic oral supplements on nutritional markers nutritional status in patients receiving maintenance haemodialysis (MHD).

Objective:- To evaluate the effect of predialytic oral nutritional Supplementation in chronic kidney disease (CKD) Patient on maintenance hemodialysis (MHD) Over 3 Months . Efficacy parameters were Improvement in albumin levels, weight and haemoglobin levels ; other parameter were SGA and MIS Scores

Material and Methods:-

Data was collected over a period of 3 months from patients of outpatient haemodialysis unit located in KMCH,KATI HAR , IN-DIA. All consenting patients with CKD , Above 18 years of age and receiving twice or thrice weekly maintenance at the outpatient haemodialysis centre were included , and those with inter-current acute illnesses, body weight less than 40Kg Documented History of dialysis noncompliance documented malabsorption syndromes, and contraindication to any of the ingredients of the nutritional supplement were excluded. The supplement given was Protein, Fat mainly monounsaturated fatty acids and no trans fatty acids. Carbohydrate, carnitine and taurine , Vitamins A, D2 ,E, K1, C, B6, B12, beta - carotene thiamine riboflavin niacin and minerals Including Sodium Potassium Chloride, Calcium, Phosphorus, Magnesium, Iron Zinc, Copper, Manganese, Selenium, Chromium, Molybdenum And iodine . The Change In Serum Albumin Concentration over the study period was the primary efficacy parameter secondary efficacy parameter was the effect on the body weight and hemoglobin of the patients. The Key safety parameters were change in serum potassium and phosphorus levels. To Analyse the effect on nutritional status Of patients,subjective global assessment(SGA) and malnutrition inflammation scores (MIS) were Collected and analysed. Data

was collected from the patients before enrolment (baseline) The Patients were Followed up after 1 ,2,and 3 months of study initiation when the same parameters were again recorded (SGA) Scores and MIS Scores were collected with respect to the impact on Nutrition were Collected from the Follow up visit on wards . SGA Score Interpretation was done as 5 to 14- severe malnutrition 15 to 29-mild malnutrition and > 30 adequate nutritional status MIS Interpretation was done as 0 to 10-Normal 11 to 20-malnourished and 21to 30-severely malnourished.SGA and MIS interpretation was depicted as number of patients falling into each category.

Discussion:-

A Total of 77 eligible patients were enrolled for the study . during the three months of the study , two patients expired both at the time of the second follow-up visit(at month 2.) the baseline demographic data is summarized in table1.

Table 1 : Baseline Characteristics of patients enrolled in study

Characteristic	Value
Age (years)	18-25
	25-45
	45-65
	65
Male	39
Gender Female	38
Serum Albumin(gm/dl;Mean +SD	3.01+0.44
Body weight (kg;Mean+SD	58.78+11.20
Serum Hemoglobin(gm/dl;Mean +SD	9.23+1.88
Serum potassium(mg/dl;Mean + SD	5.22+0.79
Serum phosphorus(mg/dl;Mean +SD	6.65+1.86

Table 2 : Efficacy and Safety Parameters

Parameters	Baseline	Month1	Month2	Month3
Albumin (g/dl)	3.01±0.44	3.24±0.42	3.50±0.37	3.85±0.32
Body Weight (kg)	58.78±11.20	59.07±10.94	59.19±10.83	59.41±10.60
Serum Hemoglobin (g/dl)	9.23±1.88	9.46±1.96	9.96±1.64	10.16±1.82
Serum Potassium(mg/dl)	5.22±1.07	5.08±0.79	5.12±0.79	6.66±1.25
Serum Phosphorus(mg/dl)	6.65±1.86	5.12±1.54	6.39±1.76	6.66±1.25

All values are mean +-SD P<0.05,P<0.0001,Comparisons are versus baseline.

Discussion:- Patients Undergoing Dialysis Frequently Suffer From Both Malnutrition (Characterized by insufficient Protein Intake) And Cahexia(Characterised by defective food assimilation of utilization in the presence of hyper catabolism and systemic inflam-

mation) It is therefore imperative that patients in MHD receive adequate nutrition. The Suggested mean dietary protein intake (DPI) is 1.2/ kg per day in patients on haemodialysis and 1.3 /kg per day in patients on peritoneal dialysis . most patients on dialysis however have a lower DEI and DPI than the recommended intake. The SGA is a well validated tool for screening fro malnutrition . SGA is the only screening tool recommended by the American society for parenteral and enteral nutrition(ASPEN). The MIS is a quantitative assessment tool based on SGA and predicts mortality and morbidity in MHD patients. To Conclude, we found that predialytic oral supplementation of CKD Patients on MHD with supplementation of CKD patients on MHD for duration of 3 Months resulted In statistically significant improvements in serum albumin , body weight, hemoglobin, and nourishment status as depicted by SGA and MIS Scoring Systems.

Conclusion: -

Mean serum Albumin value Showed a statistically significant increase . There was a statistically significant improvement in the meant body weight and hemoglobin of the patients in the second and third months of treatment.Serum phosphorus and potassium levels did not change in a statistically significant manner . there was improvement in nourishment status as detected by MIS and SGA SCORES Two patients expired during the course of the study. Predialytic ORAL Supplementary improves Nutritional Status of CKD Patients on MHD

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