



REPORT ABOUT THE NUTRITIONAL TREATMENT OF THE CHRONIC RENAL FAILURE AND METABOLIC DISEASES

The Renal Pathology includes a wide range of diseases among them, the Chronic Renal Failure (CRF), which in its final state, the patient needs a Renal Substitutive Treatment -RST- (dialysis or transplant).

The increase of patients with Chronic Renal Failure together with the increase of the average age of these, has converted this illness in a sanitary, social and economic problem for all the sanitary systems of developed countries on the last years and judging by the evolution of the patients number who are incorporated into de Renal Substitutive Treatment each year, it will still be higher in the future. In Spain from 1996, the incidence is increasing in a constant way with a rise during that period of something more 3%, varying from 107 patients per million of population (pmp) in 1996 to 131 pmp in 2002 (Figure 1). The prevalence is also going to increase because of the fact that less patients die than patients begin the treatment. At the end of 2002, there were 34.129 patients in RST, this means a global prevalence of 895 pmp (Fig. 1) (Ceballos et al., 2005).

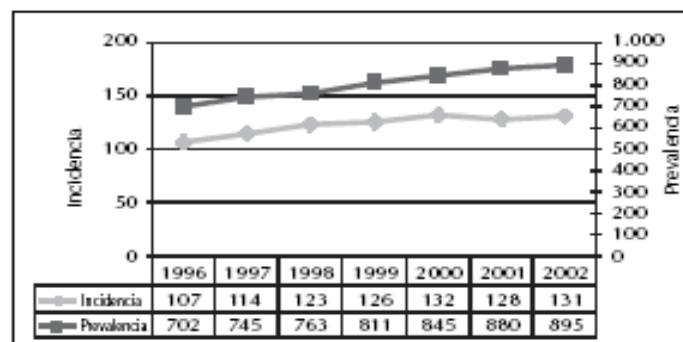


Fig. 1.—Evolución de incidencia y prevalencia pmp años 96-02.



There are several factors that have influence on the progression of the Chronic Renal Failure; one of them is *nutritional factors* (control of intakes of energy, proteins, lipids, carbohydrates, water, Sodium, Potassium and Phosphorus).

Many studies, clinical assays and reviews have revealed the relation between the control of nutritional factors and the decrease of the illness progression. (Mitch WE, 2005).

So, a suitable dietetic intervention (correct and balanced diet according to the nutritional requirements), together with an effective nutritional education which modifies the food habits and makes easier the fulfilment of the diet, could decrease the illness progression, delay the entry in dialysis and increase the health state of the patient.

The evidence for which to establish specific nutritional and food measures can delay the progression of the Chronic Renal Failure in some patients, advises to establish hypoprotean diets with a double purpose:

- decrease the uremic symptomatology, (that is, do not increase the generation of nitrogenous products and metabolites related, improving the symptomatology related to their retention), and
- delay the progression velocity of the CRF.

However, several studies have revealed that the fulfilment of a hypoprotean diet is difficult in patients with CRF and more to keep it a long term. The hypoprotean diet, besides being restricted in protein, must be controlled in Sodium, low Potassium, poor Phosphorus and poor saturated fats and refined sugars, therefore, this a little varied diet, with limits on the consumption of many foods and with insufficient supply of nutrients in spite of doing an adequate nutritional education. Likewise, some studies have described states of caloric malnutrition which joined to the tendency of these patients to consume less calories than the ones advised, in part due to the anorexia, can increase their morbidity and mortality. (Aparicio et al. 2001; Vendrely et al., 2003).



The company Sanaví, S.A has a wide experience about the importance of the malnutrition on the morbimortality of the patients hospitalized and its implications on the total cost and increase of the hospital stay (Pérez de la Cruz et al., 2002; Pérez de la Cruz et al., 2004)

To get a good fulfilment of the diet and avoid the problems described from the hypoprotean diet have been developed specifically a wide range of hypoprotean dietary products which are low Sodium, Potassium and Phosphorus, have similar aspect, texture and taste to the common consumption ones: milk, bread, rice, pasta, assorted biscuits, flour for cooking, crackers and help to prepare diets next to our culinary habits (Mediterranean diet) whose variety and attractiveness for the patients with CRF and other metabolic diseases avoid the problems that lead to giving up this type of diets and avoid the caloric malnutrition.

SANAVÍ, S.A, Spanish company specialized in the production of dietary products for especial medical purposes, has researched and developed a complete line of hypoprotean dietary products (HARIFEN) which comply with the requirements indicated before. Likewise, to check the suitability and tolerance of these foods in patients with CRF, a Research Project called “EVALUATION OF THE NUTRITIONAL STATE IN PATIENTS WITH CHRONIC RENAL FAILURE FACING A DIETETIC SUPERVISION WITH HYPOPROTEAN DIETS” was done. In this project, the Nephrology and Nutrition Services from the Hospital “Virgen de las Nieves”(GRANADA), University of Granada (Institute of Nutrition and Technology of the Foods) and the Department of R+D of SANAVÍ, SA. took part.(Reference of the Project FEDER 1FD97-0642).

Among the most important conclusions of this study, we could check that in more than the middle of the patients with Chronic Renal Failure in predialysis monitored



(patients with Serum creatinine from 2.5 mg/dl, plasmatic clearance of creatinine between 10 and 45 ml/min and stable clinical situation) could be covered the nutritional needs by means of a dietetic supervision with hypoprotean diet, that incorporating dietetic low protein products according to their needs made easier its fulfilment and avoided the caloric malnutrition, which could delay the progression of the disease and improve the quality life of the patient with.

It is necessary to point out the importance of these results, firstly, for the patient of CRF who could delay the arrival to dialysis and/or the possible transplant of kidney (the estimate of patients in Spain is nearby 100.000); secondly, for the Healthy Authorities. The CRF is very expensive for the patients in dialysis and therefore for the Health Services who spend 35.000 € per patient and year approximately, for an annual total of 900 millions of euros in Spain (Rodríguez et al., 1996).

Therefore, we consider that the dietetic treatment of these patients can not be done only modifying the normal diet, nor with other foods aimed at an especial nutrition, or by means of both. To get a suitable treatment, the especial low protein products are essential in the nutrition under medical control of these pathologies and the others like hepatic failure and metabolic disorders (Phenylketonuria, etc).

References:

Aparicio M, Chauveau P, Combe C. Low protein diets and outcome of renal patients. *J Nephrol* 2001; Vol.14 n°6:433-439

Ceballos M., López- Revuelta K, Saracho R. y col. *Informe de diálisis y trasplante correspondiente al año 2002 de la Sociedad española de nefrología y Registros Autonómicos*. Nefrología. Vol. XXV. N° 2. 2005

Mitch WE. *Beneficial responses to modified diets in treating patients with chronic kidney disease*. *Kidney Int Suppl.* 2005 Apr; (94):S133-5.



Pérez de la Cruz y col. *Desnutrición en pacientes hospitalizados: Incidencia, factores de riesgo y costes*. Premio de Investigación en Salud de Andalucía 2001 Consejería de Salud. Junta de Andalucía. Sevilla, 2002 Depósito legal: ISBN 84-8484-085-X)

Pérez de la Cruz y col. *Desnutrición en pacientes hospitalizados: prevalencia e impacto económico*. Med Clin (Barc), 2004; 123 (6) 201-206.

Rodríguez A, Pérez M y Valdés FV. Estudio comparativo de costes de las diferentes modalidades de diálisis. *Nefrología*, XVI (6): 539-548. 1996.

Vendrelly B, Chauveau P, Nicole B, El Haggan W y col. Nutrition in hemodialysis patients previously on a supplemented very low protein diet. *Kidney Int* 2003; 63(4):1491.