Eficiencia de la diálisis peritoneal frente a hemodiálisis para el tratamiento de la insuficiencia renal

Efficiency of peritoneal dialysis versus hemodialysis for the treatment of renal insufficiency. *Executive summary*

INFORMES DE EVALUACIÓN DE TECNOLOGÍAS SANITARIAS
AETSA

INFORMES, ESTUDIOS E INVESTIGACIÓN

MINISTERIO
DE SANIDAD, SERVICIOS SOCIALES
E IGUALDAD

RED ESPAÑOLA DE AGENCIAS DE EVALUACIÓN
DE TECNOLOGÍAS Y PRESTACIONES DEL SISTEMA NACIONAL DE SALUD

JUNTA DE ANDALUCIA
CONSEJERÍA DE IGUALDAD, SALUD Y POLÍTICAS SOCIALES

Eficiencia de la diálisis peritoneal frente a hemodiálisis para el tratamiento de la insuficiencia renal

Efficiency of peritoneal dialysis *versus* hemodialysis for the treatment of renal insufficiency. *Executive summary*

INFORMES DE EVALUACIÓN DE TECNOLOGÍAS SANITARIAS
AETSA

INFORMES, ESTUDIOS E INVESTIGACIÓN

Márquez Peláez, Sergio

Eficiencia de la diálisis peritoneal frente a hemodiálisis para el tratamiento de la insuficiencia renal. / Sergio Márquez-Peláez, Araceli Caro-Martínez, Daniel Adam-Blanco, Antonio Olry-de-Labry-Lima, José Antonio Navarro-Caballero, Leticia García-Mochón y Jaime Espin-Balbino — Sevilla: Agencia de Evaluación de Tecnologías Sanitarias de Andalucía, 2013.

128 p; 24 cm. (Colección: Informes, estudios e investigación. Ministerio de Sanidad, Servicios Sociales e Igualdad. Serie: Informes de Evaluación de Tecnologías Sanitarias)

1. Diálisis Peritoneal / Terapia 2. Insuficiencia renal / Terapia I. Márquez Peláez, Sergio II. Caro Martínez, Araceli III. Adam Blanco, Daniel IV. Olry-de-Labry Lima, Antonio V. Navarro Caballero, José Antonio VI. García Mochón , Leticia VII. Espin Balbino, Jaime VIII. Andalucía. Agencia de Evaluación de Tecnologías Sanitarias IX. España. Ministerio de Sanidad, Servicios Sociales e Igualdad X. España. Ministerio de Economía y Competitividad

Autores: Sergio Márquez-Peláez[1], Araceli Caro-Martínez[2], Daniel Adam-Blanco[1], Antonio Olry-de-Labry-Lima[2], José Antonio Navarro-Caballero[1], Leticia García-Mochón[2] y Jaime Espin-Balbino[2]

[1]. Agencia de Evaluación de Tecnologías Sanitarias de Andalucía.

[2]. Escuela Andaluza de Salud Pública.

Este documento se ha realizado al amparo del convenio de colaboración suscrito por el Instituto de Salud Carlos III, organismo autónomo del Ministerio de Economía y Competitividad, y la Fundación Progreso y Salud de la Consejería de Igualdad, Salud y Políticas Sociales de la Junta de Andalucía, en el marco del desarrollo de actividades de la Red Española de Agencias de Evaluación de Tecnologías Sanitarias y Prestaciones del SNS, financiadas por el Ministerio de Sanidad, Servicios Sociales e Igualdad

Edita: Agencia de Evaluación de Tecnologías Sanitarias de Andalucía
Consejería de Igualdad, Salud y Políticas Sociales
JUNTA DE ANDALUCÍA
Avda. de la Innovación, s/n. Edificio ARENA 1. Planta baja.
41020 Sevilla
España – Spain

ISBN: 978-84-15600-35-0
NIPO: 680-14-009-8

Este documento puede ser reproducido en todo o en parte, por cualquier medio, siempre que se cite explícitamente su procedencia

Eficiencia de la diálisis peritoneal frente a hemodiálisis para el tratamiento de la insuficiencia renal

Efficiency of peritoneal dialysis *versus* hemodialysis for the treatment of renal insufficiency. *Executive summary*

INFORMES DE EVALUACIÓN DE TECNOLOGÍAS SANITARIAS
AETSA

MINISTERIO
DE SANIDAD, SERVICIOS SOCIALES
E IGUALDAD

RED ESPAÑOLA DE AGENCIAS DE EVALUACIÓN

JUNTA DE ANDALUCÍA

Executive summary

Introduction

Progressive deterioration of renal function can result in a chronic renal failure requiring renal replacement therapy (RRT), being currently the only condition in which it is possible to replace the function of a vital organ in a manner that maintains the patient's life for prolonged periods of time and with a considerable living standard. This treatment can be addressed with dialysis and renal transplantation. The literature shows that the therapeutic option with the best cost effectiveness ratio is renal transplantation, providing that it is possible, although there are major limitations such as the shortage of organs and the recipient contraindications. In the absence of the possibility of transplantation, dialysis is used as a replacement therapy. There are two main types: hemodialysis (HD) and peritoneal dialysis (PD). Spain is one of the countries with the lowest rate of PD patients, although most patients with chronic kidney disease (CKD) may be candidates for PD, which has proven to be as effective as RRT.

Dialysis is the costliest chronic therapy in specialized care, with an average cost per patient six times higher than AIDS treatment, accounting for 2 % of the health budget in developed countries. In a context distinguished by the high cost to the healthcare system of treating chronic renal failure, this study aims to compile published evidence on the costs of the two main alternatives dialysis. Comparison is to be performed in terms of actual costs and citizens preferences. The aim is to facilitate decision-making in relation to the type of procedure that may be more appropriate for the Spanish National Health System (SNHS).

Objectives

Compile the evidence related to the efficiency of the dialysis options considered: hemodialysis and peritoneal dialysis.

Estimate the cost of both options using data from hospitals of the Andalusian Public Health System.

Identify the evidence on the preferences of citizens about hemodialysis and peritoneal dialysis and its determinant factors.

Materials and Methods

Evidence on efficiency among dialysis options considered

We conducted a systematic review of the literature published in major electronic databases up to March 1, 2013. From an initial selection of articles by title and abstract, was subsequently performed full-text reading and excluded all documents that did not meet the inclusion criteria. The quality of the included studies was performed using the specific scale given by the Critical Appraisal Skills Programme adapted to Spain (CASPe) for economic evaluations. We synthesized the results of each included study in tables presenting descriptive characteristics and most relevant data. To allow comparisons between the results of different studies, very heterogeneous, we calculated the percentage of savings among the alternatives considered.

Estimated cost of the options considered

We designed and conducted a survey of costs in a nephrology department, corresponding to two public hospitals from the Andalusian Health Service. We considered total healthcare costs from the payer perspective, the public health system, associated with the dialysis process, standardized according to the Integrated Healthcare Process "Treatment of Chronic Renal Failure: Dialysis and Renal Transplantation." The study had one year time horizon, and the methodology for determining cost was Activity Based Cost (ABC) and is structured in the following stages: (1) Integrated Healthcare process analysis and definition of the activities, (2) establishment standards, and (3) the estimated cost per case.

Identification of the evidence on the preferences of citizens and its determinant factors

A review of the published scientific evidence was performed. The search period was until February 2013, with abstracts in English and French language, and have selected all published document which refer to preferences among patients with CKD and dialysis treatment. The evidence synthesis was conducted in a qualitative way, without a formal assessment of the quality of evidence selected.

Results

Evidence on efficiency among dialysis options considered

We identified 474 references in the databases, finally 23 out of 474 were included in the review: three cost-effectiveness analysis, six cost-utility analysis, three budget impact analysis and eleven cost-analysis. The overall quality of the included studies can be considered as moderate. The most frequent problem was that nine out of 23 analysis did not performed any sensitivity analysis.

To overcome the difficulties of making direct comparisons between very heterogeneous studies (currency, years, etc.), we calculated the percentage of savings between modalities of renal replacement therapy in each study. The average percentage of annual cost savings per patient with PD modality versus HD was 22 %, with a range from -4.7 to 91.8 %. Only four out of the forty comparisons carried out, showed savings in favour of hemodialysis with an average of 2.03 %.

Estimated cost of the considered options

The cost study allowed to calculate the cost of the two alternative treatments: € 44,778.10 for the hemodialysis process and € 34,554.10 for peritoneal dialysis , which is a difference of € 10,224.00 per patient per year.

Identification of the evidence on the preferences of citizens and its determinant factors

The results of the search carried out showed that , although the literature is abundant in comparison of results and quality of life of patients among alternatives dialysis , it is much more limited in terms of preferences patients, and broader related to with the factors that determine the choice of dialysis modality.

While most of the published data suggests a certain equality in the choice between alternatives, slightly greater towards the DP, the latest study showed a clear preference for this modality, with about 70 % of patients in favor to PD.

As for the factors that influence the decision, studies suggested that a group of circumstances that tip the election to PD, as younger age, being married (or living with others), non-sedentary life, lower comorbidity or a greater distance to the health center. Also we identified as relevant variables the existence of a support structure and health, especially the possibility of the maintaining lifestyle with dialysis treatment. The choice of PD was associated with a higher education level of the patient and the existence of an appropriate prior information.

Discussion

The quantitative and quantitative synthesis of the results of the different studies included in the review, using the savings rate, showed that only 4 of them were favorable to hemodialysis. The average savings rate in terms of annual cost per patient of peritoneal dialysis modality versus hemodialysis reached 22 %. This average saving percentage is similar to the range described in the literature and is similar to others studies in the framework of our National Health System. However, the results of the review should be considered with caution, because of the large differences in the percentage of savings with different studies, ranging from -4.7 % to 91.9 %. The studies with budget impact analysis indicated that the change in the use of PD techniques would result in significant savings for health systems, which is especially important in the current economic context.

The results of the cost study performed in a Clinical Management Unit Nephrology of the Andalusian Public Health System confirmed cost differences highlighted by the literature review. Although the onset "unscheduled" or "urgent patient" is important to underline its high clinical and economic impact in the care process. Studies have associated the unscheduled alternative to more hospitalizations, higher number of dialysis sessions, and an increase of mortality. It is estimated that unscheduled patients in Andalusia accounting for 34.7 % of all new cases. Some authors showed that delayed vascular access programming or peritoneal catheter was responsible for 25 % unscheduled of cases, and late referral to nephrology services was responsible of a 15 %. By avoiding them, will allow the Andalusian Public Health System reduces costs between € 970,406.37 and € 1,412,353.75 in one year. Moreover, there is a direct relationship between the scheduled treatment and the patient choice, in favor of DP (an additional 13.20 %).

Regarding the preferences of patients, the latest study shows a clear preference for the DP (almost 70 % of patients). This could be due to many factors, such as increased awareness of alternatives for patients, more training and capability, etc. There is no information from the preferences of the general population, so is unknown the role that the advise of health personnel can have in patient preferences. Related to the factors that could influence the decision, besides the baseline characteristics of the patients, studies suggest that there are relevant variables such as the existence of a support care structure and an appropriate prior information, which should be taken into account by the health system.

Conclusions

- Both the evidence from the literature review and the cost study results confirm that the PD treatment has a better cost-effectiveness ratio than the HD treatment.
- Significant savings for the SNHS can be achieved by encouraging the use of PD versus HD, as well as reducing the percentage of patients with unscheduled dialysis.
- The most recent data show a clear preference (about 70 %) among patients for the PD treatment.
- The higher effectiveness of the PD compared to its low level of implementation, makes it necessary to identify the reasons and possible barriers that explain its lower level of dissemination.

Health managers can enforce a higher implementation of PD by improving the information available for the health personnel, the existence of a supportive healthcare structure and the increase of scheduled treatment.