nefrologia
Revista de la Sociedad Española de Nefrología
www.revistanefrologia.com

Original article

How should we analyze and present mortality in our patients?: a multicentre GCDP experience☆

Darío Janeiro[a,], José Portolés[a], Paula Lopez-Sanchez[a], Fernando Tornero[b], Carmen Felipe[c], Inés Castellano[d], Maite Rivera[e], Jeanette Fernandez-Cusicanqui[a], Antonio Cirugeda[f], María José Fernandez-Reyes[g], José Ramón Rodriguez-Palomares[h], María Auxiliadora Bajo[i], Guadalupe Caparrós[j], Alberto Ortiz[k], con la participación del Grupo Centro de Diálisis Peritoneal (GCDP) RedinRen*

[a] *Servicio de Nefrología, Hospital Universitario Puerta de Hierro-Majadahonda, Majadahonda (Madrid), Spain*
[b] *Servicio de Nefrología, Hospital Universitario Clínico San Carlos, Madrid, Spain*
[c] *Servicio de Nefrología, Hospital Nuestra Señora de Sonsoles, Ávila, Spain*
[d] *Servicio de Nefrología, Hospital San Pedro de Alcántara, Cáceres, Spain*
[e] *Servicio de Nefrología, Hospital Ramón y Cajal, Madrid, Spain*
[f] *Servicio de Nefrología, Hospital Universitario Infanta Sofía, Madrid, Spain*
[g] *Servicio de Nefrología, Hospital General de Segovia, Segovia, Spain*
[h] *Servicio de Nefrología, Hospital Universitario de Guadalajara, Guadalajara, Spain*
[i] *Servicio de Nefrología, Hospital Universitario La Paz, Madrid, Spain*
[j] *Servicio de Nefrología, Hospital General de Ciudad Real, Ciudad Real, Spain*
[k] *Servicio de Nefrología, Fundación Jiménez Díaz, Madrid, Spain*

ARTICLE INFO

Article history:
Received 2 June 2015
Accepted 1 September 2015
Available online 6 April 2016

Keywords:
Peritoneal dialysis
Mortality
Survival

ABSTRACT

Introduction: There are different strategies to analyze mortality in peritoneal dialysis (PD) with different definitions for case, event, time at risk, and statistical tests. A common method for the different registries would enable proper comparison to better understand the actual differences in mortality of our patients.

Methods: We review and describe the analysis strategies of regional, national and international registries. We include actuarial survival, Kaplan–Meier (KM) and competitive risk (CR) analyses. We apply different approaches to the same database (GCDP), which show apparent differences with each method.

Results: A total of 1890 incident patients in PD from 2003 to 2013 were included (55 years; men 64.2%), with initial RRF of 7 ml/min; 25% had diabetes and a Charlson index of 3 [2–4];

☆ Please cite this article as: Janeiro D, Portolés J, Lopez-Sanchez P, Tornero F, Felipe C, Castellano I, et al. Cómo debemos analizar y describir la mortalidad de nuestros pacientes: experiencia del Grupo Centro Diálisis Peritoneal. Nefrología. 2016;36:149–155.

* *Corresponding author.*
E-mail address: dxaneiro@hotmail.com (D. Janeiro).

261 patients died, 380 changed to haemodialysis (HD) and 682 received a transplant. Annual mortality rates varied up to 20% in relative numbers (6.4 vs. 5.2%) depending on the system applied. The estimated probability of mortality measured by CR progressively differs from the KM over the years: 3.6 vs. 4.0% the first year, then 9.0 vs. 11.9%, 15.6 vs. 28.3%, and 18.5 vs. 43.3% the following years.

Conclusions: Although each method may be correct in themselves and express different approaches, the final impression left on the reader is a number that under/overestimates mortality. The CR model expresses better the reality of PD, where the number of patients losing follow-up (transplant, transfer to HD) it is 4 times more than deceased patients and only a quarter remain on PD at the end of follow up.

Cómo debemos analizar y describir la mortalidad de nuestros pacientes: experiencia del Grupo Centro Diálisis Peritoneal

Palabras clave:
Diálisis peritoneal
Mortalidad
Supervivencia

RESUMEN

Introducción: Existen distintas estrategias para analizar la mortalidad en diálisis peritoneal (DP), con diferentes definiciones de caso, evento, tiempo en riesgo y análisis estadístico. Un método común entre los distintos registros permitiría compararlos adecuadamente y entender mejor las diferencias reales de mortalidad de nuestros pacientes.

Métodos: Revisamos y describimos las estrategias de análisis de los registros autonómicos, nacional e internacionales. Incluimos análisis de supervivencia actuarial, Kaplan–Meier (KM) y riesgos-competitivos (RC). Aplicamos los diferentes enfoques a la misma base de datos (GCDP), lo que permite mostrar las diferencias aparentes con cada método.

Resultados: Se incluyeron 1.890 pacientes incidentes en DP en el periodo 2003-2013 (55 años; 64,2% varones), con FRR inicial de 7 ml/min; el 25% presentaba diabetes y un índice de Charlson de 3 [2–4]. Fallecieron 261 pacientes, 380 pasaron a hemodiálisis (HD) y 682 recibieron trasplante. Las tasas de mortalidad anual llegan a variar hasta un 20% en números relativos (6,4 vs. 5,2%) según el sistema aplicado. La estimación de probabilidad de mortalidad por RC es inferior a KM en todos los años: 3,6 vs. 4,0% el 1.er año; 9,0 vs. 11,9%; 15,6 vs. 28,3% y 18,5 vs. 43,3% los siguientes.

Conclusiones: Aunque cada método pueda ser correcto en sí mismo y expresar diferentes enfoques, la impresión final que queda en el lector es un número que sobrestima la mortalidad. El modelo de RC expresa mejor la realidad en DP, donde el número de pacientes que pierden seguimiento (trasplante, paso a HD) cuadruplica al de los fallecidos y solo una cuarta parte continúa en DP al final del seguimiento.

Introduction

Mortality is theoretically the simplest and the most important measure to evaluate the effect of our intervention in a patient population with chronic renal disease.[1] There are many publications comparing survival between the different stages of the disease,[2] etiologies, renal replacement therapy (RRT) techniques[3–12] or between groups and countries.[13,14] However, there is some controversy and disparity of results in publications, and this is partly due to the lack of homogeneity in case definitions, statistical analysis approaches, the management of censored patients censored and forms of description and presentation of results.[15,16] Therefore, different records of patients with chronic kidney disease in RRT have tried to define a model that summarizes the various ways of measuring mortality.[17], without having reached a consensus model. It would facilitate the comparison between different working groups on an important subject such as a patient who receives RRT, and more specifically, peritoneal dialysis (PD). Our analysis is intended for that purpose, which applies different methods on the same database (DB), allowing us to compare and establish a methodological discussion on the subject, for the purpose of advancing our knowledge and comprehend the information available in this field.

Material and methods

The Peritoneal Dialysis Center Group (GCDP) presents a descriptive DB analysis that we have generated from a prospective data collection since 2003, as described in