Peritoneal dialysis or haemodialysis in end-stage renal disease: do registry data matter?

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The ERA-EDTA Registry has been established since the very beginnings of the Society as one of its main objectives; it is a source of information of major importance, such as in the paper by van de Luijtgaarden et al. [1], published in the present issue of Nephrology Dialysis Transplantation. Data from 14 registries over a 20-year period have been used to analyse dialysis modality choice and survival in a cohort of >190 000 patients. With sophisticated methods that take into account the effects of changing outcomes over time, the authors show that the decreasing use of peritoneal dialysis (PD) is not justified by case-mix or by more access to transplantation and that haemodialysis (HD) use is also decreasing, in part because of the rise of transplantation. They also show that patient survival has improved over these two decades, both for PD and HD. This is a very important study for the European nephrology community, and also for public health policy.

The first important result of this study is that we are making significant progress over time, since mortality is decreasing, with a risk reduction of 36% in PD and 18% in HD, when the periods 2003–07 and 1993–97 are compared, with adjustments for age, sex, primary renal disease and country [1]. Although absolute mortality is higher for patients treated by dialysis in the USA, similar trends have been shown by the United States Renal Data System (USRDS), with a decrease of mortality more pronounced for patients treated by PD than for those on HD [2]. As in the USRDS data, it is noteworthy that the risk reduction in the present report is twice as important in PD as that in HD [1], probably because patients are more selected, since patients who were treated by PD were younger and, as such, were in better health and had more often glomerulonephritis as a cause of renal failure, these findings being comparable to those of the USRDS [2]. Nevertheless, the improvement is there and significant, even if it results from a better selection of patients, i.e. a better indication of PD.

The second major piece of information provided by this study is that PD use has decreased over time in the 14 countries and regions included in this study, from 22% of incident patients in 1993–97 to 18% during the period 2008–12, i.e. an 18% absolute decrease [1]. This trend is not observed in all European countries and over the world [3]: recent increases have been seen in PD in countries such as Hungary and Portugal, and in the USA, but in most countries, an overall decline in the percentage of PD use during the time period 2006–12 has been observed. From one country to another, the percentage of patients treated by PD is highly variable within Europe, from 6.6% of prevalent patients in Greece to 19.8% in Denmark, the proportion being 8.9% in the USA [3]. These variations may be observed even within countries: for instance, in mainland France, the use of PD varies between regions from 2.3 to 29.1% for incident patients and from 2.1 to 10.0% for prevalent patients [4].

The third result provided by van de Luijtgaarden et al. is that outcomes are not equivalent for PD and HD: although survival was rather equivalent with the two techniques in the periods 1993–97 and 1998–2002, a small (9%) but significant advantage for PD has been observed during the most recent 2003–07 period [1]. This survival advantage is mainly observed for patients younger than 65 years, and in those without diabetes. It is noteworthy that propensity scores give results that are even more in favour of PD. Another important outcome is that patients treated by PD have better access to transplantation than those on HD, potentially because of the selection criteria mentioned earlier.

Overall, the strengths of this study are its duration, with nearly 20 years of data collection, the nearly 200 000 patients included in the analyses and the quality of the statistical techniques used to analyse outcomes and trends over time. Despite its importance, the study has some limitations that are inherent to registry data: (i) mortality has been evaluated with censorship of the first 90 days after the initiation of dialysis, although the first months on dialysis are associated with the mortality rates that are several-fold higher than after 6 months of treatment [5]. A selection bias cannot be ruled...
out in the differences between PD and HD for early mortality. (ii) No information is provided on home HD, which is potentially better matched to PD, at least from a social aspect, but this practice, while in progress, is still rather marginal in Europe in terms of the number of patients treated. (iii) No information could be obtained on the actual number of preemptive transplantations, a surrogate had to be used, but it is very likely that the number of patients concerned was relatively small. (iv) Numerous studies have questioned the level of glomerular filtration rate for dialysis initiation; the study cannot give this information, although it is of crucial importance when HD and PD are compared. (v) The Registry cannot explain why mortality is decreasing: as stated by the authors [1], many factors may influence survival, whether related to patients’ case-mix, pre-dialysis care or dialysis technique per se. Cohort studies that collect more detailed data on all these aspects may give appropriate answers; the EuroDOPPS study supported by the ERA-EDTA might be very important in this respect in the future [6].

In summary, PD is associated with better outcomes in younger and non-diabetic patients [1, 2], and with better access to kidney transplantation [1], and it is the dialysis technique that a majority of nephrologists would chose for themselves [7]. Therefore, one may ask why is PD use decreasing over time? As proposed by van de Luijtgaarden et al. [1], patient preferences [8], nephrologists choices [7] and other factors related to the nephrology unit itself might be factors that explain why PD is underused in Europe. Our American colleagues have questioned the impact of the type of dialysis unit, whether for-profit or non-profit, on various outcomes of patients treated by dialysis [9, 10]. They have obtained contradictory results, but at least they have asked the question of the impact of economy on practice patterns. A next step in the comparisons within Europe could be to evaluate the influence of the type of reimbursement of dialysis on the use of PD or HD: for instance, PD use is increasing in the USA [3], maybe as one of the results of the bundling system initiated in 2011 [11]. More detailed economic analyses might give clues to the implementation of incentives that could favour the use of PD, i.e. better outcomes for lesser costs.

CONFLICT OF INTEREST STATEMENT

None declared.

(See related article by van de Luijtgaarden et al. Trends in dialysis modality choice and related patient survival in the ERA-EDTA Registry over a 20-year period. Nephrol Dial Transplant 2016; 31: 120–128.)

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