FROM THE EDITORS

Epidemiology, Meta-analysis, and Macro-economics

In this issue of *Peritoneal Dialysis International* (PDI), Jeffrey Perl and colleagues explore the impact of dialysis modality choice on survival after renal graft failure, extending their previous work based on the Canadian Organ Replacement Registry (1) by using the US Renal Data System and demonstrating an early benefit for peritoneal dialysis (PD) over hemodialysis (HD). The statistical methodology in their study is complex because adjustment had to be made for the nonrandom allocation of patients to the modality of dialysis treatment they received. An accompanying commentary by Castledine and Caskey explores epidemiologic aspects of this complex interaction.

It seems intuitive to the professionals responsible for PD programs that there is a close relationship between exit-site infection and the risk of developing peritonitis. The strength of that relationship is examined in a qualitative systematic review by Jassal and van Diepen who assessed selected studies against the Bradford Hill criteria for causation and found that the literature provides only weak evidence of a causal relationship. The implication of their result is that assumptions about the pathogenesis of PD peritonitis have to be reconsidered. Their conclusion is challenged in an accompanying commentary by Piraino and Bernardini, who emphasize the importance of strategies to reduce exit-site infection as part of a peritonitis prevention strategy.

Thomas Golper explores the impact on PD utilization of the prospective payment system for end-stage renal disease that was introduced in the United States in 2011, presenting data that suggest an early positive impact on the uptake of PD. A consequence of the change might be an increase in the use of PD for late-presenting patients. In a complementary review, Arshia Ghaffari and colleagues describe the infrastructure requirements of a PD program for late-presenting patients, emphasizing the role of such a program in reducing the use of temporary vascular access.

Two papers in this issue, from widely separated locales, discuss the relative costs of PD compared with HD. A detailed health economic analysis from Portugal

compares the costs for patients starting dialysis with a PD catheter and those starting HD with a central vascular catheter or an arteriovenous fistula (Coentrão and colleagues), and a report from Taiwan (Kao *et al.*) compares the lifetime costs for patients starting therapy on either PD or HD, based on a paired analysis matched for age, sex, and diabetes status.

Other topics explored in this issue include a study from Albert Power (Imperial College, London, UK) of the impact of hernias on technique survival and residual renal function, and a report from Akonur *et al.* that models fluid and sodium removal in automated PD, given variations in the characteristics of the daytime exchange. The place of cancer antigen 125 in the diagnosis of PD-related membrane pathology is the subject of correspondence between Ray Krediet and Joanne Bargman.

In recent months, four important systematic reviews have been published pertaining to aspects of PD. An evaluation of the use of PD to treat acute kidney injury identified four randomized controlled trials comparing PD with extracorporeal blood purification that found no difference in mortality between those modalities (2). The authors commented on marked between-trial heterogeneity and small study sizes that affected the robustness of their conclusion. More high-quality studies are clearly required in this area, and indeed, this issue of PDI includes an evaluation of the metabolic impact of high-volume PD in the treatment of acute kidney injury (Góes *et al.*).

A systematic review of the use of icodextrin by Cho and colleagues (3) confirmed the widely understood view that the use of that osmolyte improves peritoneal ultrafiltration, mitigates uncontrolled fluid overload, and importantly, does not have an adverse effect on residual renal function. No effects of icodextrin on technique or patient survival were observed, although trial sample sizes and follow-up durations were limited. The analysis by the same group of the impact of biocompatible solutions (4) addresses an issue that is clearly much more complex—not least because the solutions themselves are heterogeneous. Their review confirmed greater urine volume and residual renal function after 12 months' use of biocompatible compared with conventional solutions. The possible mechanisms for that finding have been extensively debated (5). In contrast, no overall difference in

peritonitis rates was found between biocompatible and conventional solutions, despite the results of the *balANZ* study, which indicated otherwise (6).

A systematic review and meta-analysis from the Erasmus University Medical Center in Rotterdam (7) suggests that, when surgically implanted, catheters with straight intraperitoneal segments show clear benefits over coiled-tip catheters in terms of 1-year catheter survival.

The October EuroPD meeting in Maastricht presented a vibrant and diverse academic program. It showcased work from the European Training and Research in PD project, which is a European Union-funded initiative that has as its objective the training of twelve early-stage researchers across European research centers (<http://www.eutripd.eu/>).

Submissions to PDI continue to be strong and diverse, representing the best of PD research and providing a truly international perspective. I am very pleased that our publisher Multimed has agreed to an ambitious target for publication of papers online within 6 weeks of acceptance by the editorial team.

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Editor-in-Chief

dialysis catheter type on complication rate and catheter survival. *Kidney Int* 2013; [Epub ahead of print].

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REFERENCES

1. Perl J, Hasan O, Bargman JM, Jiang D, Na Y, Gill JS, *et al*. Impact of dialysis modality on survival after kidney transplant failure. *Clin J Am Soc Nephrol* 2011; 6:582–90.
2. Chionh CY, Soni SS, Finkelstein FO, Ronco C, Cruz DN. Use of peritoneal dialysis in AKI: a systematic review. *Clin J Am Soc Nephrol* 2013; 8:1649–60.
3. Cho Y, Johnson DW, Badve S, Craig JC, Strippoli GF, Wiggins KJ. Impact of icodextrin on clinical outcomes in peritoneal dialysis: a systematic review of randomized controlled trials. *Nephrol Dial Transplant* 2013; 28:1899–907.
4. Cho Y, Johnson DW, Badve SV, Craig JC, Strippoli GF, Wiggins KJ. The impact of neutral-pH peritoneal dialysates with reduced glucose degradation products on clinical outcomes in peritoneal dialysis patients. *Kidney Int* 2013; 84:969–79.
5. Davies SJ. What has *balANZ* taught us about balancing ultrafiltration with membrane preservation? *Nephrol Dial Transplant* 2013; 28:1971–4.
6. Johnson DW, Brown FG, Clarke M, Boudville N, Elias TJ, Foo MW, *et al*. The effects of biocompatible compared with standard peritoneal dialysis solutions on peritonitis microbiology, treatment, and outcomes: the *balANZ* trial. *Perit Dial Int* 2012; 32:497–506.
7. Hagen SM, Lafranca JA, Ijzermans JN, Dor FJ. A systematic review and meta-analysis of the influence of peritoneal