

COMMENTARIES

PERITONEAL DIALYSIS AND THE PEDIATRIC PATIENT

Of pediatric patients who require chronic dialysis worldwide, most are managed with peritoneal dialysis (PD). This treatment option is particularly attractive for children in need of renal replacement therapy because the simplicity of the procedure allows for performance at home in all but the most exceptional circumstances, thereby returning the child with end-stage renal disease (ESRD) to regular school attendance and facilitating normal family and childhood activities. Peritoneal dialysis also avoids the challenges associated with vascular access in children, which can be particularly problematic. As a result, of children with ESRD and on dialysis, the proportion receiving PD is estimated to be 50% – 70% in developed countries and likely considerably higher in developing countries. In fact, the only absolute contraindications to chronic PD hinge on the lack of availability of a functional peritoneal membrane, as might occur in children with uniquely pediatric disorders such as diaphragmatic hernia or gastroschisis.

Despite the substantial percentage of dialysis patients who receive PD, the absolute numbers of pediatric patients pale in comparison to those of adults because of the low incidence of ESRD in the pediatric population and the preferential selection of transplantation as a treatment modality. In the United States alone, pediatric patients represent about 1% of the total incident dialysis population (1). It is for that reason that the development of pediatric dialysis registries has been crucial to the generation of important clinical outcomes data in pediatric PD.

The dialysis registry of the North American Pediatric Renal Trials and Collaborative Studies was established in 1992, and it was the first to provide evidence pertaining to the high peritonitis rate in children (2). After publication of the initial pediatric-specific peritonitis treatment guidelines in 2000, the International Pediatric Peritonitis Registry (IPPR) was established as a means of tracking the impact of guideline implementation around

the globe (3). In turn, the IPPR provided crucial data that has been incorporated into the Consensus Guidelines for the Prevention and Treatment of Catheter-Related Infections and Peritonitis in Pediatric Patients Receiving Peritoneal Dialysis: 2012 Update (4). The present issue of *Peritoneal Dialysis International* includes two important publications from yet another informative registry—that established by the International Pediatric Peritoneal Dialysis Network (IPPN). The IPPN registry currently collects data from 86 pediatric dialysis centers in 33 countries from around the globe, creating the opportunity not only to document geographically related similarities and differences in treatment and outcomes, but also to delineate the factors that influence whatever variability is noted between regions. In the first of the two IPPN publications, Schaefer *et al.* (5) provide new and enlightening information on the practice of chronic PD in the developing world, and of the association between national wealth, patient selection, and patient outcomes. In the accompanying IPPN article, Neu *et al.* (6) describe the frequent presence of significant comorbidities in the PD population and the impact that those comorbidities have on both hospitalization and patient survival. Registry data like these are exceedingly important to the global pediatric dialysis community and help to make possible the ultimate development of evidence-based best practices.

Of course, single-center reports provide valuable complementary data, as reflected by the additional manuscripts published in the present issue. Aksu *et al.* (7) describe their experience with patient comorbidities and the strategies used to provide effective therapy in this complicated group of patients. Ellis *et al.* (8) emphasize the value of home visits as a means of uncovering previously undetected aspects of the home environment that may affect the clinical care and outcome of the child on dialysis. In the last manuscript addressing chronic therapy, Azocar *et al.* (9) hypothesize that patients with

focal segmental glomerulosclerosis, the most frequent acquired cause of ESRD in children, may exhibit enhanced loss of protein across the peritoneal membrane as a result of an as-yet-undefined permeability factor.

Finally, acute kidney injury in children also often necessitates the introduction of renal replacement therapy, and PD remains the predominant acute dialytic modality in developing countries. Mishra *et al.* (10) present their single-center experience with acute PD, adding to the limited literature on the subject and providing guidance to the many centers in which more advanced techniques such as hemodialysis and continuous renal replacement therapy are not available to support the pediatric patient.

Speaking on behalf of the pediatric dialysis community, we are grateful that *Peritoneal Dialysis International* has seen fit to publish this issue highlighting the pediatric peritoneal dialysis patient, and we are hopeful that attention to the information contained in this issue will result in improved care for this vulnerable and very special patient population.

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