



ISPD Asian Chapter Newsletter

International Society for Peritoneal Dialysis (ISPD)

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To our industry partners:

The editorial office welcomes your assistance in distributing this newsletter in electronic or printed form to the dialysis community. If you are interested in sending scientific messages through the newsletter, please contact the editor at: ccszeto@cuhk.edu.hk



FROM THE EDITORIAL OFFICE

Dear All,

Welcome back from the 13th Congress of the ISPD in Mexico City! The meeting was a great success and we are very pleased with the outcome.

In this issue, we are delighted to have Dr. KS Nayak as the new Chief Coordinator of the Asian Chapter, as well as five prominent Nephrologists in our territory as the executive committee. You are most welcome to distribute this newsletter electronically, or in printed form to your colleagues or others who may be interested. If you or your colleagues would like to receive this newsletter directly from our editorial office, please send me your e-mail address.

Sincerely,

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MESSAGE FROM THE ASIAN CHAPTER COORDINATOR

In an effort to facilitate a quicker and more broad-based response to ground realities that exist insofar as PD therapy is concerned in Asia, it has been decided to have a governing body for the ISPD Asian Chapter. This will help implement PD educational initiatives to expand the scope of this therapy in the region with a special emphasis on making 'PD- first' a reality for the entire continent, improve PD penetration (especially in countries where PD does not exist), and also increase technique survival.

The governing body will consist of a Chief Coordinator and 5 executive committee members in addition to the existing Asian Chapter core group.

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The ACM-ISPD Governing Body

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REACHING STANDARDS OF CARE IN PERITONEAL DIALYSIS

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INTRODUCTION

Registry data from a number of countries have consistently shown that PD patients enjoy a survival advantage compared with HD patients in the first few years¹ and that the improvements observed in patient and technique survival in PD over the last decade have exceeded those observed in HD². In spite of these highly favourable results, PD technique survival is markedly variable within and between different countries and is often suboptimal. Published 1-year PD technique failure rates vary between 10% and 59% for different countries and PD centres³. PD peritonitis, the most common cause of technique failure, is also highly variable within and between countries, with published rates ranging between 1:15 and 1:74 patient-months³. The reasons underpinning such variability in clinical outcomes between PD units are not entirely clear, but include variable PD experience, quality assurance monitoring and standards of care³. These findings highlight the importance of ensuring that appropriate standards of care are being reached in each centre to optimize patient outcomes and time spent on PD. The keys to achieving optimal standards of PD care are:

1. Ensuring appropriate patient selection for PD

Data suggests that most patients want to choose their dialysis modality and are equally likely to choose PD or HD when fully informed of both options⁴. However, the marked variability in PD penetration between different countries and different units indicates that many centres do not in fact offer free choice. There also appears to be considerable variability with respect to determining PD contraindications, such that the proportion of ESRF patients considered medically unsuitable for PD by nephrologists in different Asia-Pacific countries varies from 13% to 48%⁵. More consideration should also be given to patient characteristics that are associated with superior outcomes on PD. For example, the initial survival advantage of PD over HD has been consistently shown in many registry studies to be greatest in young (<60 years) patients without comorbidity^{1,6}.

2. Ensuring optimal patient training and continuous support

The content and delivery of PD training in the Asia-Pacific region is not uniform and may contribute to variable outcomes. The available evidence suggests that PD outcomes are improved by providing adequate and ongoing patient education and support, establishing centralised training practices based upon adult learning principles, retraining patients regularly (preferably in the home environment) and providing 24-hour-a-day patient/carer access to experienced PD staff⁷.

3. Monitoring PD centre performance

In many PD units, clinical outcomes are poorly evaluated, such that only 37 (25%) of the 145 countries known to provide dialysis publish information either directly through a registry or indirectly through a

multinational organization⁸. An overarching principle of quality assurance is that if clinicians do not measure the quality of their service, they cannot manage it. Measuring key performance indicators (KPIs) is an essential component of PD practice and is necessary for benchmarking, performance improvement and meeting stakeholder expectations. Such indicators should be readily measurable, important to most clinicians, linked with achievable performance targets, and modifiable by centres within a reasonable time frame (1-2 years) and budget (Table 1).

Table 1 Indicators for PD Service

Indicator type	KPI	Target
Process	Percentage of all dialysis patients receiving pre-dialysis education	≥65%
	Proportion of all dialysis patients participating in home-based dialysis (PD or Home HD)	≥50%
	Percentage of PD patients receiving prophylactic antibiotics prior to Tenckhoff insertion	≥95%
	Percentage of PD patients with break-in period ≥ 2 weeks	≥80%
	Percentage of PD patients satisfied with care they receive	≥75%
	Percentage of PD patients with nasal staphylococcal carriage treated with mupirocin	≥80%
	Percentage of PD patients with adequacy measured in last 6 months	≥80%
	Percentage of PD patients visited at home in last 6 months	≥80%
Clinical	Percentage of PD patients within anaemia management protocol target	≥70%
	Percentage of PD patients with serum phosphate levels within KDIGO target	≥70%
	Percentage of PD patients with total weekly Kt/V ≥1.7	≥90%
	Percentage of PD patients with systolic blood pressure between 105 and 140 mmHg	≥80%
	Peritonitis rate (episodes per patient-month)	≥1:30
	Exit site infection rate (episodes per patient-month)	≥1:50
	One-year technique survival	≥85%

4. Establishing a continuous quality improvement (CQI) approach to PD practice

Monitoring KPIs must be linked with strategies for rectifying any identified problems in center performance. Continuous quality improvement (CQI) involves closing the gap between evidence-based and current PD practice by creating a continuous feedback loop whereby processes and outcomes that need improvement in any given PD unit can be identified, measured and changed. The 4 stages of the quality improvement cycle are:

1. Plan – identify the change to be tested or implemented;

2. Do – carry out the test or change;
3. Check – measure data (KPIs) before and after the change;
4. Act – plan the next change cycle or full implementation.



Applying such CQI principles to clinical practice has been shown to result in improved PD-related infection rates⁹. Recently, a CQI program was introduced in Queensland, Australia, to improve peritonitis rates by undertaking mupirocin eradication of nasal staphylococcal carriage in all PD patients (Plan). Strategies were put in place to train staff and patients to appropriately identify nasal carriage and to ensure that all nasal carriers received nasal mupirocin (Do). The KPIs that were monitored during the program were proportion of PD patients receiving a nasal swab every 3 months, the proportion of identified nasal carriers receiving nasal mupirocin, exit site infection rates, peritonitis rates and isolated organisms (Check). Following the initial CQI cycle, it was noted that unit compliance with the program was variable and sub-optimal. This situation was corrected by the introduction of Clinical Practice Improvement Payments (CPIP) in which the State Government paid renal units \$500 for every nasal swab performed on a PD patient during a monitoring cycle and \$500 for every identified nasal staphylococcal carrier treated with mupirocin. Over an 18 month period, median PD unit nasal swab rates improved from 45% to 92%, treatment of nasal staphylococcal carriers improved from 0% to 50% and peritonitis rates improved from 1:15 to 1:33 patient-months.

CONCLUSION

Many PD units do not evaluate or report measures of service quality or outcomes. Amongst those that do, there is unacceptable variation in clinical outcomes. Although outcomes are improving in PD to a greater extent than in HD, better cooperation is required within the PD community to allow all PD units to reach appropriate standards of care through improved patient selection, education, clinical support, centre KPI monitoring and continuous quality improvement initiatives.

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2. United States Department of Health and Human Services. *USRDS 2006 Annual Data Report: Atlas of End-Stage Renal Disease in the United States*. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, 2006.
3. Jose M, Johnson DW, Mudge DW, et al. Peritoneal dialysis practice in Australia and New Zealand: A call to action. [In Press] *Nephrology* 2010;
4. Jager KJ, Korevaar JC, Dekker FW, Krediet RT, Boeschoten EW. The effect of contraindications and patient preference on dialysis modality selection in ESRD patients in The Netherlands. *Am J Kidney Dis* 2004;43:891-9.
5. Yao Q. Physicians' attitudes and potential barriers towards dialysis modality in the Asia-Pacific Region. [Abstract] *Perit Dial Int* 2010;26:S68.
6. McDonald SP, Marshall MR, Johnson DW, Polkinghorne KR. Relationship between Dialysis Modality and Mortality. *J Am Soc Nephrol* 2009;20:155-63.
7. Bernardini J, Price V, Figueiredo A. Peritoneal dialysis patient training, 2006. *Perit Dial Int* 2006;26:625-32.
8. Lameire N, Van Biesen W. Epidemiology of peritoneal dialysis: a story of believers and nonbelievers. *Nat Rev Nephrol* 2010;6:75-82.
9. Qamar M, Sheth H, Bender FH, Piraino B. Clinical outcomes in peritoneal dialysis: impact of continuous quality improvement initiatives. *Adv Perit Dial* 2009;25:76-9.

Baxter

LITERATURE REVIEW

PERITONITIS – LET'S LEARN SOMETHING FROM ANZDATA

Two observational studies using Australia and New Zealand Dialysis and Transplant Registry (ANZDATA) database provide excellent information on two specific forms of PD-related peritonitis.

In the first study, 361 PD patients with 435 episodes of culture-negative PD-associated peritonitis between October 2003 and December 2006 were reviewed. In this study, culture-negative peritonitis was not associated with demographic or clinical variables, but a history of previous antibiotic treatment for peritonitis was more common. More importantly, culture-negative peritonitis was significantly less likely to be complicated by hospitalization, catheter removal, permanent hemodialysis, or death. Patients with relapsed culture-negative peritonitis were more likely to have their catheters removed.

In the second study, 324 PD patients with 359 episodes of polymicrobial PD-associated peritonitis between October 2003 and December 2006 were reviewed. In this cohort, polymicrobial peritonitis represents 10% of all peritonitis episodes. Compared with single-organism infections, polymicrobial peritonitis was associated with higher rates of hospitalization, catheter removal, permanent hemodialysis, and death. Isolation of fungus or Gram-negative bacteria was the primary predictor of adverse clinical outcomes, while pure Gram-positive peritonitis had the best clinical outcomes. Most importantly, patients who had their catheters removed over 1 week after polymicrobial peritonitis onset were significantly more likely to be permanently transferred to hemodialysis therapy.

Comment: It seems unlikely to have randomized control trial in these areas, and cohort studies from large well-maintained databases provide the best possible data to guide our practice.

1. Fahim M, et al. Culture-negative peritonitis in peritoneal dialysis patients in Australia: predictors, treatment, and outcomes in 435 cases. *Am J Kidney Dis* 2010; 55: 690-697.
2. Barraclough K, et al. Polymicrobial peritonitis in peritoneal dialysis patients in Australia: predictors, treatment, and outcomes. *Am J Kidney Dis* 2010; 55: 121-131.

SODIUM INTAKE: ANOTHER REVERSED PHENOMENON?

Is sodium restriction always beneficial? Maybe not. In a single-center retrospective cohort study of 305 new PD patients, the investigators found that participants in the high tertile of average sodium intake had higher levels of albumin, prealbumin, and lean body mass as well as more nutrient intakes. More importantly, low average sodium intake independently predicted the increased risk for overall and cardiovascular death after adjusting for recognized confounders. This correlation could not be entirely explained by deficient protein and energy intake.

Comment: Given the previous observations in body weight, blood pressure, and serum cholesterol level, the result of this study is not at all surprising. One may wonder if sodium restriction would be beneficial for patients with a relatively high salt intake (e.g. better blood pressure control). The more important question however, is, would there be any benefit in allowing malnourished patients, with low sodium intake, to eat food that is more salty?

1. Dong J, et al. Low dietary sodium intake increases the death risk in peritoneal dialysis. *Clin J Am Soc Nephrol* 2010; 5: 240-247.

MESOTHELIAL EMT: MORE THAN TGF AND SMAD

The mechanism of epithelial-mesenchymal-transition (EMT) of peritoneal mesothelial cells is incompletely understood, although transforming growth factor beta (TGF β) / Smad3 pathway is generally believed to be important. A recent animal study showed that Smad3-deficient mice were protected from peritoneal fibrosis and angiogenesis caused by adenovirus-mediated gene transfer of active TGF β to mesothelial cells. However, mesothelial transition occurred in this setting, suggesting the involvement of non-Smad mechanisms. More importantly, in vivo inhibition of the mammalian target of rapamycin (mTOR) by rapamycin completely abrogated the transition response in Smad3-deficient but not in wild-type mice, indicating that the Smad-independent pathway involves redundant mechanisms related to mTOR.

Comment: This study does not show that rapamycin could prevent peritoneal fibrosis. It actually suggests that an effective therapy should act high up in the signaling pathway.

1. Patel P, et al. Smad3-dependent and -independent pathways are involved in peritoneal membrane injury. *Kidney Int* 2010; 77: 319-328.

NEWS FROM THE ISPD

NEW COUNCIL MEMBERS ELECTED JULY 2010:

President:	Simon Davies (UK)
President Elect:	Joanne Bargman (Canada)
Council Member (Asia):	Philip Kam-Tao Li (Hong Kong)
Council Member (Pediatric):	Hui-Kim Yap (Singapore)

Dr. KS Nayak (India) will be the new Asian Chapter Coordinator.

NEW ISPD GUIDELINES/RECOMMENDATIONS NOW AVAILABLE

The July issue of Peritoneal Dialysis International (PDI) features the latest update of the ISPD recommendations for treatment of peritoneal dialysis PD-related infections, as well as are the new Guidelines on Peritoneal Access. Visit www.pdiconnect.com to view the guidelines.

13TH CONGRESS OF THE ISPD

The 13th Congress of the ISPD was held successfully in Mexico City in July 2010. The 14th Congress of the ISPD will be held in Kuala Lumpur, Malaysia, September 2012. www.ispd2012.org.my/index.html

OPEN BIDDING FOR THE 6TH ASIAN CHAPTER MEETING (ACM), 2013

The 5th ACM will be held Pattaya, Thailand from October 6-8, 2011. The 6th ACM is now open for bidding. Please visit www.ispd.org for further details.

ASIAN CHAPTER SCHOLARSHIP

This scholarship supports up to 3 months of training in clinical PD for doctors and nurses from Asia. Application deadline for each round is twice a year on June 30 or December 31. The next deadline is December 31, 2010. Details and application procedures can be found under the Regional Chapters - Asian Chapter, on the ISPD website at <http://ispd.org/lang-en/scholarships-awards/asian-chapter-scholarship>

UPCOMING MEETINGS

PD University

San Francisco, California

PD University for Physicians

October 31 - November 2, 2010

Web site:

<http://secure.lenos.com/lenos/northpointe/WFU017SanFran/>

PD University for Surgeons

November 1, 2010

Web site:

<http://secure.lenos.com/lenos/northpointe/WFU018SanFran/>

31st Annual Dialysis Conference

17th International Symposium on Hemodialysis

22nd Annual Symposium on Pediatric Dialysis

February 20-22, 2011

Phoenix, Arizona

Abstract deadline: Friday, October 4, 2010

Website: www.dialysisabstracts.com

World Congress of Nephrology 2011

April 8-12, 2011

Vancouver, Canada

Abstracts submission is open from August to September 2010.

Website: www.wcn2011.org/