



ISPD Asian Chapter Newsletter

International Society for Peritoneal Dialysis (ISPD)

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From the Editorial Office

Dear All,

In this issue, we are delighted to have Dr. Narayan Prasad from India to discuss the utilization of PD in the Asia-Pacific region. You are most welcome to distribute this newsletter electronically, or in printed form, to your colleagues or other people who may be interested. If you or your colleagues would like to receive this newsletter directly from our editorial office, please send your e-mail address to: administration@multi-med.com

The ISPD Asian Chapter meeting 2009 is coming this October. We look forward to seeing you in Beijing!

Sincerely,
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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

News from the ISPD

Join the ISPD!

Membership benefits of the International Society for Peritoneal Dialysis include:

- Print and/or online subscription to *Peritoneal Dialysis International*
- Receipt of PD News
- Online access to ISPD Guidelines
- Special registration fees at ISPD Congress, Chapter Meetings and the Annual Dialysis Conference
- Application for ISPD Scholarships and Grants

Join today at www.ispd.org!

Asian chapter Scholarship

This scholarship supports up to 3 months of training in clinical PD for doctors and nurses from Asia. Application deadlines occur twice each year in June and December. **The next deadline is December 31, 2009.** Details and application procedures can be found under the Regional Chapters – Asian Chapter, at the ISPD website.

Upcoming ISPD Events and Meetings

3rd North American Chapter Meeting

August 28-30, 2009
Vancouver, British Columbia, Canada
Website: www.ispd.org/NA

4th Asian Chapter Meeting

October 15-17, 2009
Beijing, China
Website: www.chinamed.com.cn/acm-ispd/content.asp

13th Congress of the ISPD

June 23-26, 2010
Mexico City, Mexico

Other Upcoming Meetings

EuroPD 2009

The 9th European Peritoneal Dialysis Meeting

October 9-12, 2009

Palais des Congrès, Strasbourg

Website: www.europd.com/

30th Annual Dialysis Conference

16th International Symposium on Hemodialysis

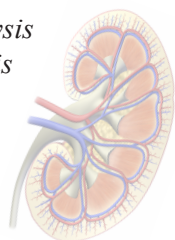
21st Annual Symposium on Pediatric Dialysis

March 7-9, 2010

Seattle, Washington

Abstract deadline: 5 October 2009

Website: som.missouri.edu/dialysis/



Literature Update on Peritoneal Dialysis – January to April 2009

Infection in PD

Two recent studies on the risk of infection in PD patients are thought-provoking. In a large observational cohort study, which used the Australian and New Zealand Dialysis and Transplant Registry data, 21,935 patients who started dialysis therapy between 1995 and 2005 were reviewed. The investigators found that PD was consistently associated with increased risk of death from infection compared with HD after 6 months of treatment. This increased risk of infectious death in PD patients was largely accounted for by increased exposure to bacterial or fungal peritonitis.

Do elderly PD patients have a higher risk of peritonitis? In another retrospective study of 4247 incident Canadian PD patients, with data collected from 1996 to 2005, older age was independently associated with a higher peritonitis rate (rate ratio 1.06 per decade increase). However, this association was not observed in elderly patients who started PD between 2001 and 2005. Furthermore, catheter infection was less frequent with increasing age.

1. Johnson DW, et al. Associations of dialysis modality and infectious mortality in incident dialysis patients in Australia and New Zealand. *Am J Kidney Dis.* 2009 Feb; 53(2):290-7.
2. Nessim SJ, et al. Impact of age on peritonitis risk in peritoneal dialysis patients: an era effect. *Clin J Am Soc Nephrol.* 2009 Jan; 4(1):135-41.

Comment: These two studies provide important data for practicing nephrologists to explain to their patients the pros and cons of various dialysis modalities.

Is BP control important?

The association of blood pressure and mortality in incident PD patients has not been adequately studied. In a cohort study of 2,770 new PD patients in England and Wales between 1997 and 2004, greater SBP, DBP, MAP, and PP were associated with decreased mortality in the first year, but greater SBP and PP were associated with increased late mortality (after 6 years). More importantly, in the subgroup of patients placed on the transplant waitlist within 6 months of starting renal replacement therapy, greater SBP, DBP, MAP, and PP were not associated with decreased mortality in the first year.

3. Udayaraj UP, et al. Blood pressure and mortality risk on peritoneal dialysis. *Am J Kidney Dis.* 2009 Jan; 53(1):70-8.

Comment: The phenomenon of reverse epidemiology seems non-existent in this study. It provides a strong support for vigorous control of blood pressure for our PD patients – especially those on transplant waiting list.

Nocturnal PD for sleep apnea

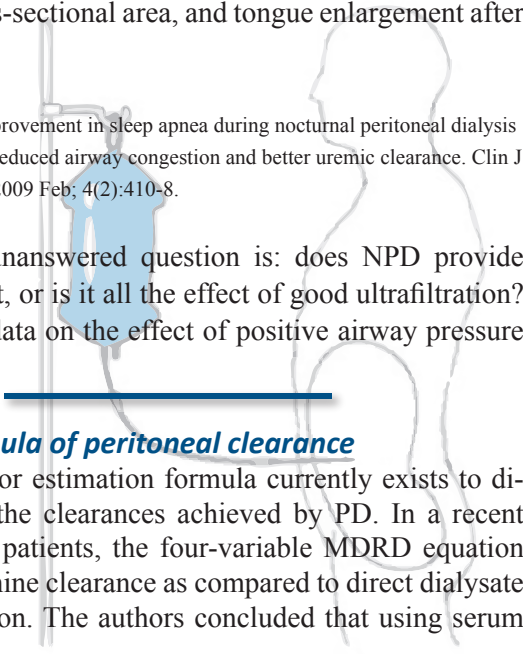
Among PD patients, NPD is known to improve sleep apnea compared with CAPD, but the contributing factors are unclear. In a prospective study from Hong Kong, 38 incident patients underwent overnight polysomnography during NPD and CAPD. The researchers found that NPD achieved greater reductions in total body water, hydration fraction, and net ultrafiltration than CAPD during sleep. Overnight peritoneal Kt/V and creatinine clearance were lower after conversion. More importantly, both peritoneal Kt/V and peritoneal creatinine clearance correlated with AHI, as did their changes after conversion. Volumetric magnetic resonance imaging also revealed reduced pharyngeal volumes and cross-sectional area, and tongue enlargement after conversion.

4. Tang SC, et al. Improvement in sleep apnea during nocturnal peritoneal dialysis is associated with reduced airway congestion and better uremic clearance. *Clin J Am Soc Nephrol.* 2009 Feb; 4(2):410-8.

Comment: The unanswered question is: does NPD provide some extra benefit, or is it all the effect of good ultrafiltration? There is also no data on the effect of positive airway pressure alone.

Estimation formula of peritoneal clearance

No blood test or estimation formula currently exists to directly determine the clearances achieved by PD. In a recent study of 454 PD patients, the four-variable MDRD equation predicted a creatinine clearance as compared to direct dialysate and urine collection. The authors concluded that using serum



creatinine values in “standard” fashion, MDRD equations can approximate creatinine clearances achieved by peritoneal dialysis with accuracy similar to that in predialysis populations.

5. Khosla N, Steiner RW. The MDRD equation predicts peritoneal dialysis-delivered creatinine clearances from serum creatinine. *Clin J Am Soc Nephrol*. 2009 Apr; 4(4):798-803.

Comment: This study does not validate the MDRD equation for estimation of dialysis adequacy. However, the study shows that such an equation is theoretically possible.

Invited Article

Challenges and Opportunities for Enhancing PD Utilization for Kidney Failure Patients in the Asia-Pacific Region

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CHALLENGES TO MANAGE KIDNEY DISEASE IN THE ASIA PACIFIC REGION

As the average age of the population in both developed and developing nations rises, the healthcare landscape alters accordingly, including an increase in the prevalence of chronic diseases. Governments therefore face higher expenditures to treat chronically ill patients. The global number of end stage renal disease (ESRD) patients is expected to be more than 2 million by 2010. ^[1] The associated treatment costs are expected to rise to US\$1.1 trillion. ^[2] In Asia, the number of patients with ESRD requiring dialysis is growing faster than the global average. In countries like China, Malaysia, and the Philippines, the dialysis population increases per year by 10% or more. ^[3,4] The growing number of ESRD patients in the region and the associated costs of treatment, place an increasing financial burden on the healthcare systems in these countries. Governments have to meet the challenge of how to alleviate this burden, by resorting to cost-effective treatments with optimal care results for patients, within a given budget.

MEETING THE CHALLENGE: PROVIDING OPTIMAL CARE WHILE SAVING COSTS

Health economic studies show that in countries where the utilization of PD is relatively low, a shift to a higher proportion of PD patients would save considerable costs, thereby freeing up resources to accommodate a larger number of patients treated with dialysis. ^[5] For example, in China, the dialysis population increases by 10%-12% per year and the current treatment mix is 89% HD to 11% PD. A budget impact model demonstrates that an increase of PD patients to 21% over four years, would reduce the cumulative five year dialysis budget by 370 million RMB (\$US 54 million). These savings would

allow an additional 3,876 patient-years of treatment. An increase to 40% would provide for an additional 11,931 patient-years of treatment. ^[5] In Thailand, the five year cumulative budget can be reduced by a total of 344 million Baht (\$US 9.8 million), which provides an additional 677 patient-years of treatment, if PD utilization increases to 20%. ^[6] In India, characterized by a limited health-care budget allocation, and few HD centers (not easily accessible for majority of the population), PD has the advantage of a lower infrastructure cost as well as a greater flexibility for patients in regards to location of the performance of dialysis treatment (home dialysis). ^[12] In Singapore, the government can save \$SD 20 million over the five year cumulative budget, if PD utilization increases to 40% by 2010, which provides for an additional 919 ESRD patient-years. ^[6] Following the outcomes of these health economic studies, it can be estimated that governments will be able to save costs and thereby enable more patients to be treated within a given budget, if at least 30% of dialysis patients are treated by peritoneal dialysis (PD). The advice of 30% is based on the following facts:

A. PD utilization in north-west European countries, Australia and New Zealand

Worldwide practices show that in many countries the share of PD as a dialysis therapy is close to, around, or exceeds 30%. ^[7,8]

Current practices show that in many countries the share of PD as a dialysis therapy is either close to, around or exceeds 30%. For example, in 2003, the PD proportion in the Netherlands was 28%, in Iceland 30% and in Estonia 37%. In Australia 24% of all dialysis patients were treated with PD while in New Zealand the share of PD patients was 45%. ^[7] In 2005, 30% of new dialysis patients in Sweden started on PD. ^[8]

B. At least 30% to 50% of informed patients will choose PD

Surveys show that over 30% to 50% of informed patients suitable for either treatment, choose PD. ^[9-12]

Studies show that if patients are educated about all treatment options and have no contraindications, at least 30% will opt for peritoneal dialysis. In the US, 34% of patients who received pre-dialysis education and who were without contraindications to either modality chose PD. ^[9] In the Netherlands, 48% of informed patients opted for PD ^[10] and in Canada 50%. ^[11] In India, only one third of patients of ESRD are informed about PD. ^[12]

C. Patient choice is the most important factor for modality selection

Surveys show that patient choice is considered to be the most important factor when determining dialysis modality. ^[13]

Separate surveys amongst nephrologists in Canada, the US, and the United Kingdom, all demonstrate that patient choice is considered to be the most important factor to determine a dialysis treatment modality, followed by comparative quality of life data and comparative morbidity data. ^[13] As demonstrated above, more than 30% to 50% of informed patients will choose PD, in the absence of contraindications.

D. Physicians recommend PD utilization of 30% or more

Studies show that nephrologists recommend a PD proportion of more than 30%. ^[14, 15]

In 2001, a survey among nephrologists in the US showed that PD was believed to be underused (at the time 12.7% of US ESRD patients

were utilizing PD) and should be increased to a level of 32.6% to maximize survival, wellness, and quality of life. ^[14] A similar survey conducted in the UK, showed that UK nephrologists advised to treat 38% of dialysis patients with PD, to maximize survival, wellness and quality of life. ^[15]

E. Regional governments aim for a PD utilization of at least 30% to manage ESRD treatment

Recent regional policy objectives set in Ontario (Canada) and Queensland (Australia) aim to increase the share of PD in the treatment mix to 30% or more. ^[16, 17]

In 2005, the Ministry of Health and Long-Term Care in Ontario (Canada) started to develop policy measures to address, among others, increasing in-hospital dialysis capacity pressures, a rise in prevalent patients on dialysis and the need for cost-effective, high quality care. ^[16] In response to these challenges, the provincial government decided to establish the Provincial PD Initiative, which aims to increase PD use to 30% by 2010. The government came to this conclusion as PD and HD were considered equally effective, with PD having the advantage that it can be performed at home. Furthermore, in Ontario, PD is more cost-efficient and is associated with an equal or better quality of life than in-center HD. ^[16] The State government of Queensland (Australia), faced with similar challenges to manage ESRD treatment with a growing patient population and capacity constraints, issued the Queensland Statewide Renal Health Services Plan for 2008- 2017 in 2007. The Plan stipulates that Queensland Health should aim to meet a statewide target of 50% of new dialysis patients receiving home-based dialysis (home hemodialysis or peritoneal dialysis). Increasing the rate of PD would produce a net saving of AUD 111 million over the years to 2017. ^[17]

For these five reasons, it is believable that a policy objective to enable at least 30% of dialysis patients to be treated by PD is feasible and appropriate.

EXPANDING AND OPTIMIZING CARE

While PD offers equal or better medical benefits compared to HD and with lower costs, this modality remains underutilized in many countries in the Asia-Pacific region. There is therefore an opportunity for governments to expand care for ESRD patients when allocating funds for RRT, by facilitating and encouraging the use of PD at home. There are, however, still barriers that prevent a wider application of PD. These barriers are mainly non-medical in nature. An important factor is the lack of adequate training and education on PD therapy for nephrologists at several training and teaching centres. If physicians have a knowledge deficit concerning available dialysis modalities for ESRD patients, patients will not be presented all treatment options, which inhibits the choice for the optimal treatment. This lack of physician education leads to a situation where the patient does not have sufficient information to make an educated choice.

Another significant non-medical barrier to an optimal use of peritoneal dialysis is the imbalance in reimbursement systems. In most countries in the Asia-Pacific region, the reimbursement structure is shaped towards providing HD therapy, hence there is little to no incentive to prescribe PD. In general, the choice of modality is closely related to the reimbursement system in a country. In many countries, for example, Japan, the income of doctors and hospitals is calculated according to the number of patient visits. There is therefore a high incentive to prescribe hemodialysis, as HD requires more physical visits to the hospital. ^[18] However, if countries provide reimbursement incentives to promote peritoneal dialysis, PD will be more commonly

used. For example, in Belgium, the current reimbursement policy favors dialysis outside hospitals, which has led to a 70% increase in the application of PD after the introduction of the new policy. ^[19] Hong Kong offers a good example of a successful and cost-effective dialysis program. The 'PD First Policy' in Hong Kong has excellent clinical outcomes and has led to a good quality of life for patients. ^[20] When Hong Kong initiated the provision of dialysis services in the 1960's, it was faced with financial constraints to accommodate demand. Since the establishment of a 'PD First Policy', the number of dialysis patients has risen from a couple of hundred, to almost 4000 in 2007. In 1985, Hong Kong's Central Renal Committee recognized CAPD to be the most cost effective treatment for ESRD patients. This led to the establishment of the 'PD First Policy', which informs patients of the benefits of PD and offers reimbursement for the PD solutions (which make up 90% of the costs for PD). Hemodialysis is also under certain conditions reimbursed so patients are still able to pursue HD if they wish to do so and their condition requires it. Currently more than 80% of ESRD patients in Hong Kong are treated with PD. ^[21] Realigning financial incentives and the provision of sufficient and accurate information on treatment options, will lead to a higher share of PD, which ultimately saves costs, without compromising efficacy.

SUMMARY AND RECOMMENDATIONS

The number of ESRD patients requiring dialysis treatment is rising faster in Asia than the global average. Governments face therefore higher expenditures to treat patients with chronic kidney disease, which increases the burden on healthcare budgets. Peritoneal Dialysis (PD) is an effective, safe, cost-effective treatment modality, which remains underutilized in the Asia-Pacific region. While generally less costly, PD provides equal, if not better, medical outcomes compared to hemodialysis. Governments will be able to save costs and enable more patients to be treated within a given budget, if more patients are treated with peritoneal dialysis. In most countries in the Asia-Pacific region, reimbursement systems favor prescribing hemodialysis, and it is therefore recommended that governments eliminate imbalances in the reimbursement system, so as to enable the prescription of the dialysis therapy according to patients' choice and treatment suitability.

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4th ACM-ISPDP

Beijing, China Oct. 15-17, 2009



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