



ISPD Asia-Pacific Chapter Newsletter, December 2023

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News from the ISPD

11th APCM-ISPD 2025 will be coming to Kuala Lumpur, MALAYSIA!



Professor Talerngsak Kanjanabuch passing the MOU to Dr Lily Mushahar

The Malaysian Society of Nephrology (MSN) has been given the honor to host the 11th APCM-ISPD 2025 congress in Kuala Lumpur, Malaysia. A Memorandum of Understanding (MOU) was signed between Dr Lily Mushahar, President of the Malaysian Society of Nephrology and Professor Dr Talerngsak Kanjanabuch, ISPD-Asia Pacific Chapter (APC) Coordinator. The event was witnessed by the ISPD APC Core Group and Executive Committee Members during the 10th APCM-ISPD Congress in Pullman Hotel Aerocity, New Delhi on the 22-24 September 2023.

The 11th APCM-ISPD 2025 congress will be held in the state-of-the-art Kuala Lumpur Convention Centre on the **4-7 September 2025** under the theme of "***Transforming and Empowering Success in PD***", which aligns with the ISPD's mission of advancing the knowledge and practice of peritoneal dialysis worldwide. The congress venue is strategically located in the heart of the Kuala Lumpur City Centre (KLCC) precinct, adjacent to the 50-acre Kuala Lumpur City Centre Park (KLCC Park) and the world's iconic PETRONAS Twin Towers. More than 40 hotels range from 5-star business hotels, boutique class hotels, and fully equipped service apartments to budget hotels, within 10 minutes walking distance of the venue.

MSN believes that hosting the ISPD Asia Pacific Chapter Meeting in Malaysia will provide an excellent opportunity for delegates to gain valuable insights into the latest developments and best practices in the field of peritoneal dialysis.

Please come and join us in the beautiful city of Kuala Lumpur for an academically stimulating conference and enjoy Malaysia fascinating fusion of culture and gastronomic experiences. Save the date and see you in Kuala Lumpur in 2025!

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- print and/or online subscription to Peritoneal Dialysis International
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- Special registration fees at ISPD Congress, Chapter Meetings and the Annual Dialysis Conference
- Application for ISPD Scholarships and Grants

Membership for developing countries can be done at advantageous rates, by grouping members by institution or region geographical area. Write to admin@ispd.org for more information.

Upcoming Meetings

World Congress of Nephrology (WCN) 2024

13-16 April 2024
Buenos Aires Convention Center (CEC), Buenos Aires, Argentina
Website: <https://www.theisn.org/wcn/about/>
Early-bird registration deadline: 17 January 2024

2024 Asian Pacific Congress of Nephrology (APCN) and 44th Korean Society of Nephrology (KSN) Meeting

13-16 June 2024
Coex, Seoul, Korea
Website: <https://apcn2024.org/program/glance.php>
Abstract submission deadline: 31 January 2024

International Society for Peritoneal Dialysis 2024 congress

26-29 September 2024
Dubai World Trade Center, Dubai, UAE
More information: www.ispd.org/dubai2024



ABSTRACT SUBMISSION OPENS:
01 DECEMBER 2023



ABSTRACT SUBMISSION CLOSES:
12 APRIL 2024



NOTIFICATION OF ACCEPTANCE:
03 JUNE 2024



HOUSING PORTAL OPENS:
25 JANUARY 2023



REGISTRATION OPENS:
25 JANUARY 2024



EARLY BIRD REGISTRATION CLOSES:
14 JULY 2024



ISPD 2024 Congress
26 - 29 September 2024
Convent Hotel Dubai, U.A.E

PERITONEAL DIALYSIS - ACHIEVING EQUITY THROUGH UNIVERSAL ACCESS

Guideline Update

Managing the symptom burden associated with maintenance dialysis: Conclusions from a kidney disease: A Challenge in the Asia-Pacific Region



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Introduction

The current management of chronic dialysis patients has shifted globally to an emphasis on individual patients rather than rigid adherence to arbitrary standards of care (e.g., Kt/V). Therefore, the 2020 ISPD recommended prescribing **High-quality Goal-directed PD** with the aim of achieving realistic care goals to **maximize the quality of life (QoL) and satisfaction for the individual, minimize their symptoms, and provide high-quality care**, which followed an American artist, Richard Price’s key message, “voices of an individual.” The ISPD also encourages to perform patient-reported outcome measures (PROMs). However, many patient-reported outcome measures had either not been validated for kidney failure or developed at all (such as for cramps). Additionally, there is no consensus on standardizing and incorporating symptom assessment into routine clinical care of patients undergoing long-term dialysis. With this limitation, KDIGO invited patients and international experts (clinicians, nurses, behavioral therapists, pharmacists, and clinical researchers) to sit together and develop a roadmap statement in the **Controversies Conference on Symptom-Based Complications in Dialysis**, held in May 2022, and later published it on Kidney International. 2023, September, entitled **“Managing the symptom burden associated with maintenance dialysis: conclusions from a kidney disease: Improving Global Outcomes (KDIGO) Controversies Conference.”** This narrative aims to summarize this critical message and deeply hopes that it will enhance the practice of high-quality PD.

Foundational Principles for Symptom Management in Dialysis Care

1. Emphasis on an individualized approach that includes eliciting patient symptoms.
2. Acknowledgement and management of patient symptoms with a multidisciplinary care team (MDT).
3. Consideration of biological, psychological, and social factors and local resources is dedicated to resolving patient symptoms.
4. Patients should receive knowledge about addressing symptoms and their management.

Statement of Identifying Symptoms and Establishing Importance

- Clinicians should assess and focus on symptoms most important to individual patients.
- Prioritization in symptom management should be based on patient perceptions of which symptoms are most negatively impacting their ability to live the life they want.

- Kidney multidisciplinary teams (MDT) should take the lead in symptom management, with holistic care as the goal.
- The approach to routine symptom screening should remain consistent regardless of dialysis modality.
- Regular global symptom screening should be incorporated into routine clinical It can be (i) an open-ended question approach that explores patient priorities for symptom management AND (ii) standardized PROMs.
- PROMs are essential in identifying patient-prioritized symptoms but should not be used in isolation.
- The frequency of routine symptom screening should be individualized.
- Symptom assessments should be incorporated into patient medical records to facilitate integration into overall clinical assessment, AND they should be accessible to MCT within and beyond nephrology and the patient.
- Healthcare use and cost-effectiveness studies for symptom assessment and management programs are needed.

Symptoms Associated with Dialysis

Several symptoms can be experienced by patients on dialysis (Figure 1). Fatigue is the most common, occurring in more than half of dialysis patients. Depression and anxiety are often underrecognized symptoms. Screening of the symptoms can be an open-ended question approach that explores patient priorities or standardized PROMs. Importantly, symptom assessments should be incorporated into patient medical records and accessible to MCT.

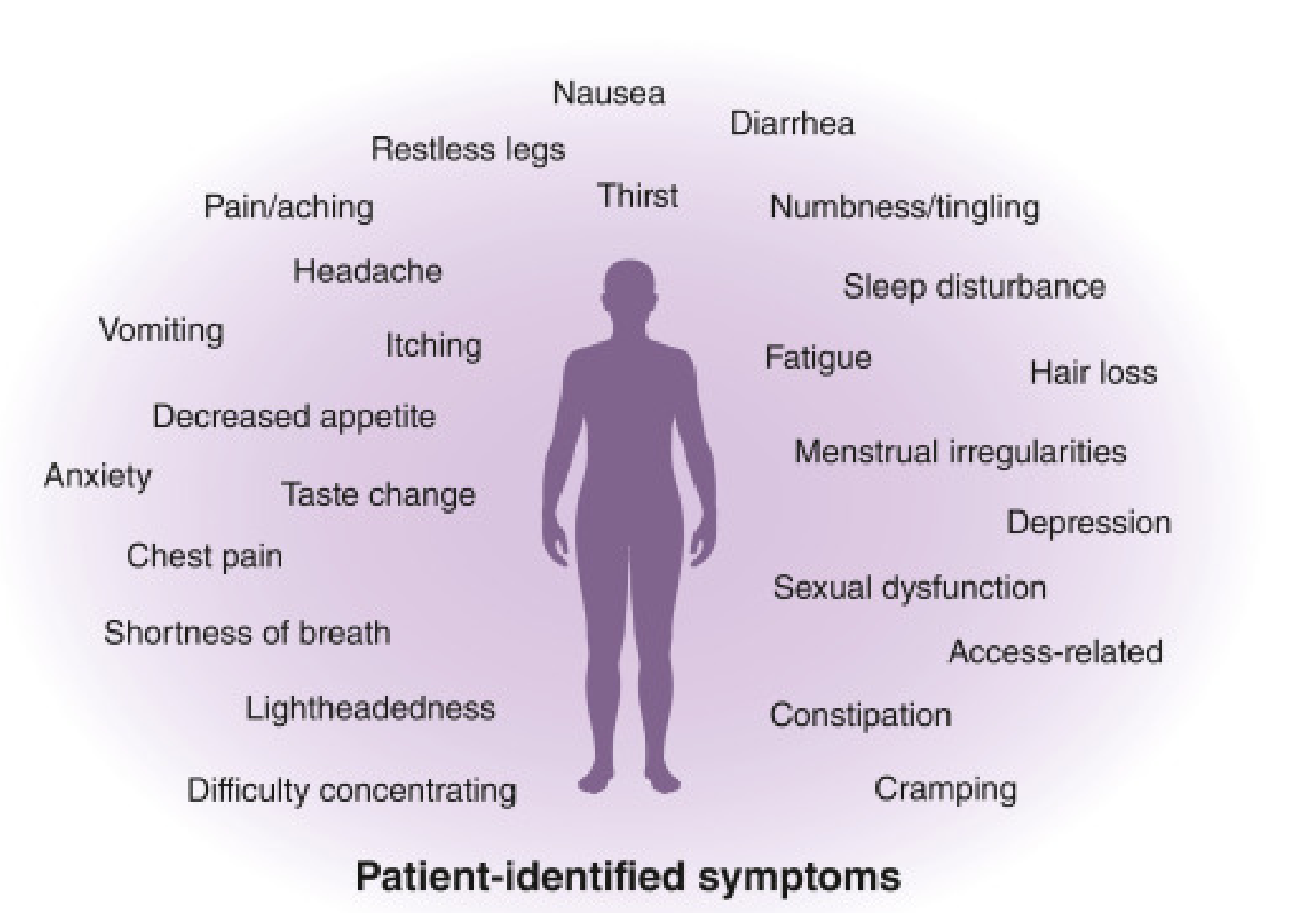


Figure 1. Symptoms or concerns among patients on dialysis [1]

Patient-Reported Outcome Measures (PROMs)

PROMs are widely used in clinical effectiveness research and are important in identifying patient-prioritized symptoms. However, current PROMs are not specific for dialysis care, need more data to determine symptoms' impact on patient's lives, and are possibly burdensome to administer. Examples of PROMs with supporting evidence of validity relevant to kidney failure are listed in Table 1. Remember that PROMs do not necessarily identify all priority concerns (e.g., cognitive and sexual dysfunction).

Table 1. PROMs with evidence of validity for comprehensive symptom assessment in kidney failure [1]

Assessment	Description
Edmonton Symptom Assessment System: revised –Renal (ESAS-r:R)	13 symptoms; visual analog scale with a superimposed 0-10 numerical rating scale for severity
Integrated Palliative Care Outcome Scale -Renal (iPOS-renal; https://pos-pal.org/maix/ipos-renal-in-english.php)	17 symptoms; rated in terms of their impact on the patient over the last week from 0 (not at all) to 4 (overwhelmingly) Additional questions covering carer anxiety, practical issues, and optional items for any other concerns
Dialysis Symptom Index	30 symptoms; rated from 1 (not at all bothered) to 5 (very much bothered)
Choices for Healthy Outcomes in Caring for ESRD (CHOICE) Health Experience Questionnaire	83-item health-related quality-of-life tool; designed to complement the generic SF-36 (similar to the KDQOL) Incorporates symptom assessment as 1 of 13 dimensions: (i) freedom; (ii) travel restrictions; (iii) cognitive functioning; (iv) financial; (v) restrictions on diet and fluids; (vi) recreation; (vii) work; (viii) body image; (ix) symptoms; (x) sleep; (xi) sexual functioning; (xii) access-related problems; and (xiii) health-related quality of life
Symptom Monitoring on Renal Replacement Therapy- Hemodialysis (SMaRRT-HD)	14-item PROM intended for use in chronic hemodialysis patients. Uses a single treatment recall period and a 5-point Likert scale to assess symptom severity

Strategies for Implementation of PROMS into Clinical Practice

- **Determination of goal:**
 - Identify and understand key attitudes of staff and patients to PROMs within units.
 - Care teams and patients must see the overall clinical utility.
 - Align patient and clinician expectations of PROMs as part of shared decision-making.
 - Frame delivery of PROMs as part of the clinical assessment and not as a survey.
- **Identification of appropriate PROMs:**
 - Relevant to patients with kidney diseases, with evidence for validity.
 - Short and simple, requiring limited burden/resources for completion.
 - Adaptable for language and vulnerable patients, such as those who are frail or have cognitive impairment and/or low health literacy.
 - Reliable and sensitive to change if being used to monitor treatment.
- **Identification of barriers** (e.g., language, perception/acceptance of symptoms, literacy, age, resource-restrained healthcare systems) and available innovation/technology.
- **Closing the loop with feedback and support management**
 - Link PROMs with clinical tools to manage symptoms identified by assessments.
 - Individualize management, tailoring treatment in all aspects of care, from medical to psychosocial.
 - Acknowledge the power of acknowledgment, even if treatment is unavailable or cannot be rendered.
 - Offer coping strategies when symptoms can not be relieved.

Considerations for Managing and Monitoring Symptoms

Management of symptom-based complications is closely linked to resource availability and contextual circumstances. Resource availability factors encompass dialysis prescription and quality, payers, providers, caregivers, family support, and patient education. Additionally, factors related to culture, religion, age, and gender should be considered in individualized patient care. Symptom management includes nonpharmacological and pharmacological approaches, determined based on individualized factors and decision-making.

Nonpharmacological Approaches:

Nonpharmacological interventions include cognitive behavioral therapy, psychotherapy, social or peer support, exercise, consideration of socioeconomic factors, mindfulness, and medication. While ample evidence supports these interventions in the general population, studies in dialysis patients remain limited. Existing evidence suggests that psychological interventions are effective in reducing depression. Meta- analyses of moderate-quality evidence show that aerobic exercise can decrease depressive symptoms in hemodialysis patients. Additionally, small-scale studies indicate that aerobic exercise can reduce anxiety in hemodialysis patients.

Pharmacologic Approaches:

A comprehensive description of pharmacological approaches to symptom management is beyond the scope of this meeting. New drugs may become available. For instance, the highly selective kappa opioid receptor agonist can improve pruritus in some hemodialysis patients.

System Approaches and Organization

Symptom assessment and management activities can be categorized into three groups: patient-clinician interaction, program improvement, and population health systems (Figure 2). Both process and outcome metrics should be monitored. The activities encompass implementation, evaluation, symptom elicitation, management, and follow-up. The model of care should be adaptable and flexible to accommodate each country's context and should not compromise patient-clinician contact time.

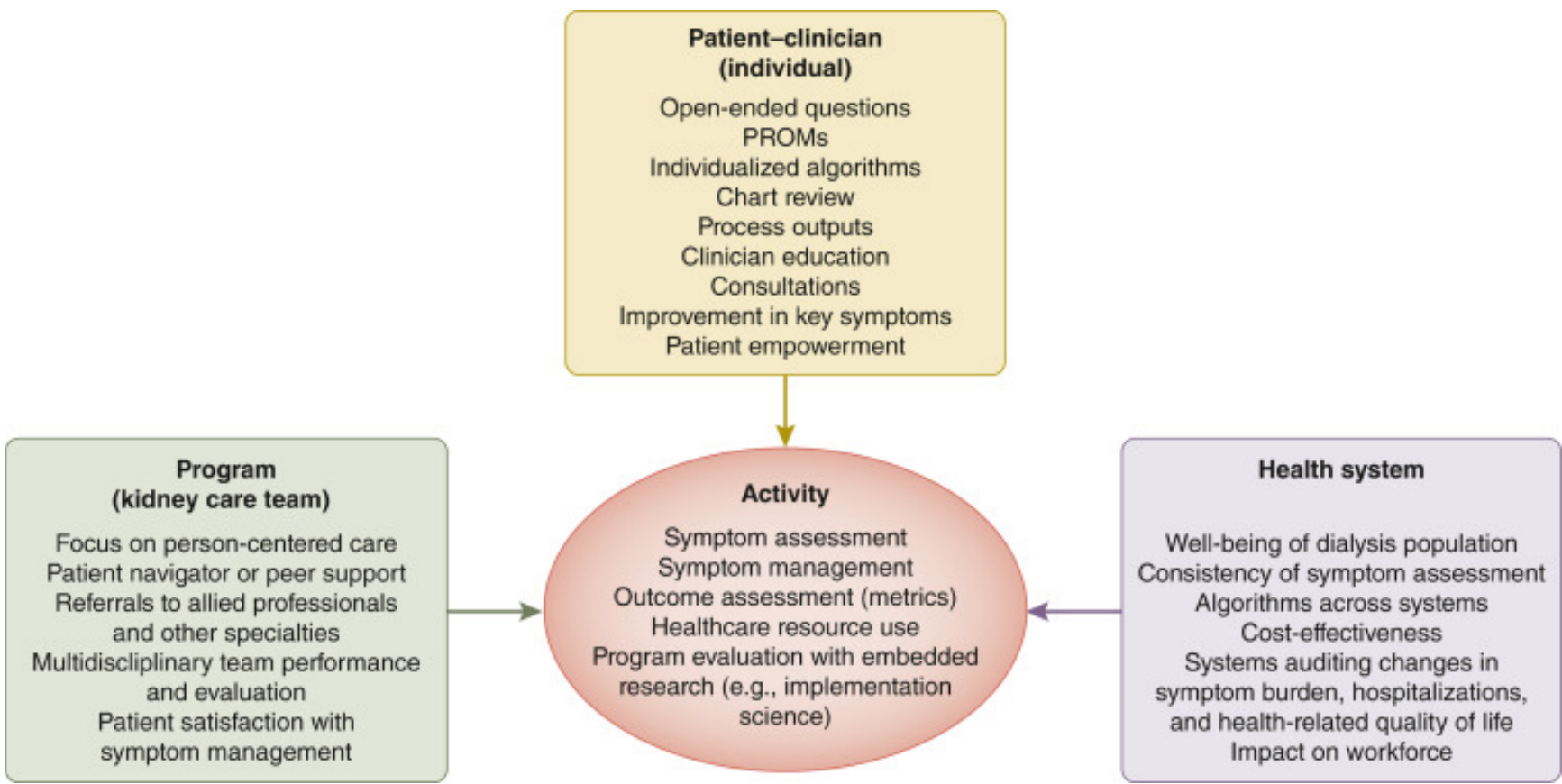


Figure 2. Multilevel approaches to enable system assessment and management [1]

Research Opportunities

Prioritizing research in symptom management for kidney failure is critical. Research design and development should involve all stakeholders. Numerous clinical trials using PROMs are ongoing. A randomized controlled trial, a gold standard in clinical research, is needed to confirm the effectiveness of symptom management intervention on outcomes most relevant to patients, including overall symptom burden, physical function, and health-related quality of life.

Conclusion

The 2023 KDIGO Controversies Conference—Symptom-Based Complications in Dialysis aims to identify the optimal means for diagnosing and managing symptom-based complications in patients undergoing maintenance dialysis. The summary outlines foundational principles and consensus points concerning identifying and addressing symptoms experienced by patients with dialysis and describes gaps in the knowledge base and priorities for research.

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Research News from Asia-Pacific Region

Australia initiative - The HOME Network over 12 Years Journey

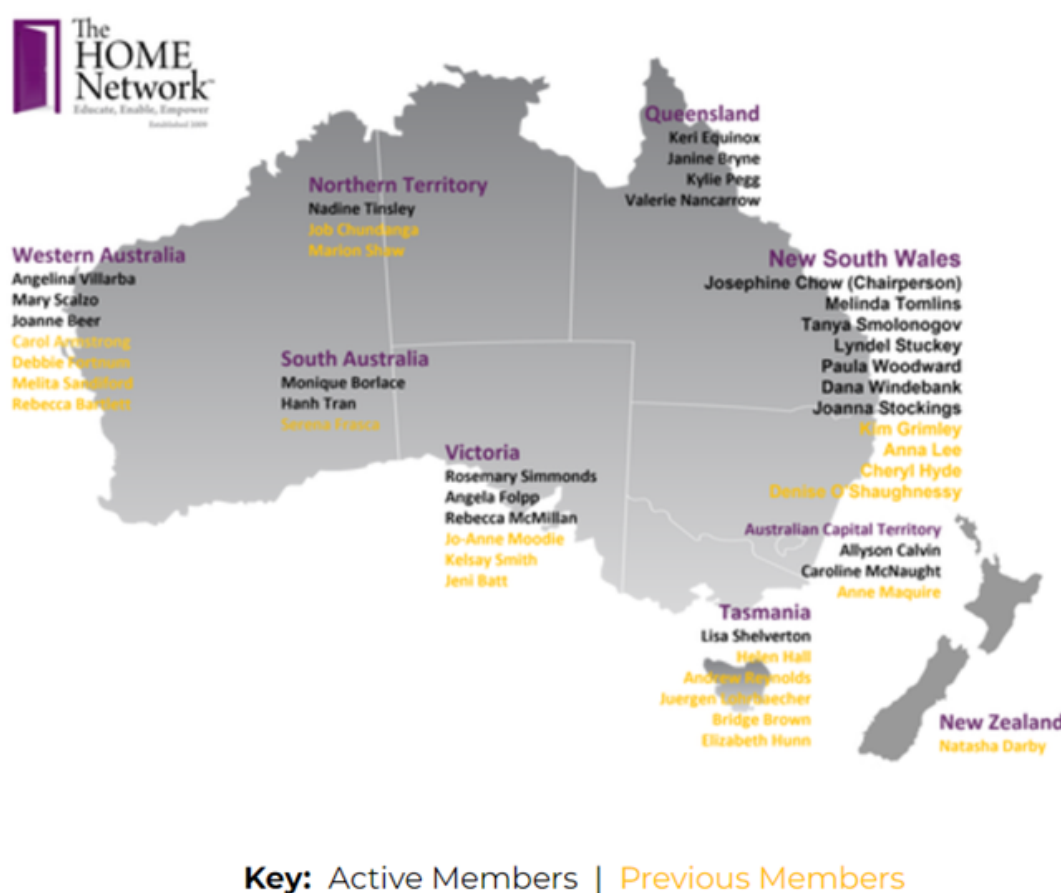
Professor Josephine Chow

Professor in South Western Sydney Nursing & Midwifery Research Alliance, Deputy Director of Research of South Western Sydney Local Health District, and the Chair of the HOME Network

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The HOME Network (THN) was established in 2009, is a national initiative aiming to enable healthcare professionals with knowledge and resources to empower more people with Kidney Failure (KF) to embrace the freedom of home dialysis and its associated health benefits. We achieve our mission through research (4 multicentre studies and over 20 publications), education (e.g. ESKD Education Pathway, TEACH-PD), and advocacy (e.g. Financial Fact Sheets outlining entitlement for out-of-pocket expenses). Our members are committed consumers and expert healthcare professionals in nephrology nursing and education, strategic management, and allied health fields (Diagram 1) and come from all parts of Australia, including metropolitan, regional and rural areas.

Diagram 1 – Membership for The HOME Network (THN)



Overall project plans with well-defined milestones were developed throughout the years by THN members via our annual workshops, where we discussed and defined the principles for promoting strategies to increase home dialysis in Australia. This paper will discuss our 12 years journey and achievements of THN in making a difference to our renal communities, our patients to improve their care and experience in kidney health.

We have been working within three focus areas list below: (1) Improved awareness, knowledge and training about home dialysis for healthcare professionals, (2) Early and ongoing education for patients about home dialysis as part of a standard model of care, and (3) Support for new initiatives and technologies that strengthen home dialysis utilisation. THN has demonstrated an excellent exemplar (Diagram 2) that illustrate the importance of partnership amongst consumers, healthcare professional and industrial organisations with a shared vision of increased awareness and improved access to home dialysis for patients with KF. Josephine Chow was recently named the **2023 Staff Member of the Year of New South Wales Health** acknowledging her and her teams' contributions in global impact of the renal program's knowledge generation in nursing leadership and practices. This recognition has further provided a strong symbol signifying the roles and works of The HOME Network.

Diagram 2 – Achievements



Our strategic partners include: **(1) Kidney Health Australia**, who share the vision of increased awareness and improved access to home dialysis in Australia; **(2) Renal Society of Australasia**, reflecting mutual interests in increasing the utilisation of home dialysis in Australia; **(3) Australasian Kidney Trials Network**, working together on the Target Education ApproaCH to improve Peritoneal Dialysis outcomes (TEACH-PD) Trial; and, **(4) My Chit Chat Time Channel**, an online video enterprise demonstrating kidney-friendly meals utilising the resources available through published recipes. The model of THN can be easily transferred to other professional bodies nationally and internationally. THN will continue to explore opportunities to collaborate to support best-practice care and better patient outcomes for Australian with KF.

Become an associate member today!



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Association of incremental peritoneal dialysis with residual kidney function decline in patients on peritoneal dialysis : A secondary analysis of the balANZ trial



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Introduction

Residual kidney function (RKF) and urine volume (UV) are associated with better clinical outcomes in dialysis patients, including improved small solute clearance, nutritional status, quality of life (QOL), technique, and patient survival [1-3]. This study aimed to examine the association between Incremental PD and declines of RKF and UV in adult PD patients.

Materials and Methods

This study was a secondary analysis of the data from the balANZ trial, detailed methods have been described previously [4-5]. Briefly, the trial recruited adult incident PD patients (≥ 18 years) with RKF (residual measured glomerular filtration rate [GFR]) ≥ 5 mL/min/1.73m² and UV ≥ 400 mL/day between November 2004 and October 2008, with final follow-up completed in September 2010. Participants with at least one post-baseline RKF and UV measurement were included in this study and categorised as either Incremental PD or Full-dose based on the weekly volume of PD fluid administered at the commencement of PD. Incremental PD was defined as starting PD with a prescribed volume of <56 L/week, while Full-dose PD was defined as ≥ 56 L of PD fluid weekly. The primary outcome was a decline in RKF, measured by the average of urinary urea and creatinine clearance adjusted for the body surface area (mL/min/1.73m²) derived from 24-hour timed urine collections at months 0, 3, 6, 9, 12, 18, and 24 months during the trial. The decline in daily UV was the secondary outcome.

Statistical analysis

Results were expressed as frequency (percentages) for categorical data, mean $\pm$ standard deviation for normally distributed continuous data, and median [interquartile range] for non-normally distributed continuous data. RKF and daily UV measurements were logarithmically transformed (log RKF and log UV) to obtain normally distributed regression model residuals. Longitudinal data for log RKF and log UV for the Incremental and Full-dose PD groups were analysed using mixed-effects linear regression modelling. Both outcomes were analysed separately using two models: model 1 included clinical covariates only, and model 2 included clinical and PD-related covariates.

Results

Patient Characteristics

Incremental PD was commenced by 45 (29.2%) of participants, while 109 (70.8%) commenced Full-dose PD. The cumulative glucose exposure was 126.0 ± 53.7 g/day in the Incremental group versus 149.8 ± 39.0 g/day in the Full-dose PD group ($p < 0.001$).

Residual Kidney Function

RKF declined in the Incremental group from 7.9 ± 3.2 mL/min/1.73m² at baseline to 3.2 ± 2.9 mL/min/1.73m² at 24 months ($p < 0.001$), and in the Full-dose PD group from 7.3 ± 2.7 mL/min/1.73m² at baseline to 3.4 ± 2.8 mL/min/1.73m² at 24 months ($p < 0.001$). Using mixed-effects linear regression modeling, Incremental PD was associated with significantly higher levels of RKF throughout the study in both model 1 (co-efficient 0.235, 95% CI 0.084-0.387, $p = 0.002$) and model 2 (co-efficient 0.243, 95% CI 0.043-0.443, $p = 0.02$). Male sex, lower baseline SBP, use of neutral-pH, low GDP PD solution, higher time-varying SBP, lower peritoneal UF, and lower PD fluid glucose exposure were also significantly associated with better RKF in model II. There was no difference in the slopes of RKF decline in the Incremental group compared to the Full-dose group (co-efficient -0.0482 ± 0.007 mL/min/1.73m²/month versus -0.0510 ± 0.0042 mL/min/1.73m²/month, respectively, $p = 0.77$). Similar findings were observed when an alternative definition of Full-dose PD of 42 L/week was employed in a sensitivity analysis.

Residual Urine Volume

Residual UV declined in the Incremental group from 1.81 ± 0.73 L/day at baseline to 0.64 ± 0.63 L/day at 24 months ($p < 0.001$) and in the Full-dose PD group from 1.38 ± 0.61 L/day at baseline to 0.71 ± 0.46 L/day at 24 months ($p < 0.001$). There was no difference in the slope of UV decline between the Incremental and the Full-dose PD groups ($p = 0.18$). Similarly, no difference was observed in the slope of the decline of UV in a sensitivity analysis using a cut-point of <42 L/week to define Incremental PD. Using mixed-effects linear regression modelling, Incremental PD was associated with significantly higher residual UV throughout the study in both model 1 (co-efficient 0.38, 95% CI 0.22 - 0.55, $p < 0.001$) and model 2 (co-efficient 0.22, 95% CI 0.02 - 0.42, $p = 0.03$). Higher residual UV was also associated with male sex, higher BMI, higher time-varying SBP, use of neutral-pH, low GDP PD solution, lower UF, and lower PD fluid glucose exposure.

Discussion

The present study found that, compared with Full-dose PD start, Incremental PD start was associated with similar declines in RKF and UV over 24 months. RKF and UV were higher in the Incremental PD group at baseline and throughout the study but declined at comparable rates to those observed in the Full-dose group. Other common modifiable factors consistently associated with better preserved RKF and UV were neutral-pH low GDP PD solutions, lower baseline SBP [5,6], higher time varying SBP, lower peritoneal UF, and lower PD fluid glucose exposure over time. The definition used for Incremental PD in the present study (i.e., <56 L PD solution per week) aligns better with the ISPD guideline as it allowed for a wider variety of possible PD regimens, including one to three lots of two-litre exchanges daily, dry days, or one or

more days off. We found no difference in outcomes when performing a sensitivity analysis using an alternative <42 L/week cut point to define Incremental PD.

The main strengths of this study are its international, multi-centre RCT design, with prospectively collected longitudinal data at multiple time points from a large number of incident PD patients followed for up to two years, and analyses for both RKF and UV were adjusted for clinically meaningful confounders in two alternative models. These strengths must be weighed against the study's limitations, including small numbers of patients in the Incremental group at the start and even smaller at the end of the study, absence of information on objective fluid status assessment and lack of correction for over-filled PD bags in UF measurements [7].

Conclusion

The present study demonstrated that, compared with a Full-dose PD start, an Incremental PD strategy was associated with similar declines in residual kidney function and urine volume over 2 years.

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Oral vitamin D supplementation on prevention of peritoneal dialysis-related peritonitis: A pilot randomized controlled trial



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Peritoneal dialysis (PD)-related peritonitis is the most common complication among patients on PD. According to data from our cohort, almost 30%-40% of patients on PD experience one or more episodes of peritonitis [1]. Peritonitis is also associated with increased risks of hospitalization, transition to hemodialysis, cardiovascular events, and death [2]. Therefore, interventional strategies for the prevention and management of peritonitis are urgently needed.

Vitamin D exerts regulatory effects on both the innate and adaptive immune systems and may mitigate infection risk [3]. In the general population, interventional studies have shown that supplementation of vitamin D2/D3 could reduce the risk of acute respiratory infection [4] and urinary infection [5]. Of note, vitamin D deficiency is highly prevalent among dialysis patients, especially PD patient [6]. Moreover, in an observational cohort study of 346 patients on PD followed for more than 2 years at our center, serum 25(OH)D levels were significantly and inversely associated with peritonitis risk [7]. However, prospective interventional studies evaluating a possible preventive effect of vitamin D against peritonitis have been limited to date.

We conducted a pilot, parallel-arm, open-label randomized controlled trial examining both the feasibility of conducting a trial of vitamin D supplementation to prevent PD-related peritonitis and the fidelity of the intervention to help inform the design and conduct of a larger randomized controlled trial that is adequately powered for the outcome of peritonitis at Peking University First Hospital [8].

Patients receiving PD who had recovered from a recent episode of peritonitis between 30 September 2017 and 28 May 2020 were recruited. The inclusion criteria were: age at least 18 years; undergoing PD for ≥ 1 month and clinically stable; weekly Kt/V ≥ 1.5 without clinical uremic symptoms; and serum 25(OH)D < 75 nmol/L (30 ng/mL). Patients were excluded if they had any of the following: received vitamin D2/D3 during the previous 12 months; a history of allergic reaction to cholecalciferol; current or past malignant disease, active hepatitis or hepatic failure, acute systemic infection, active autoimmune diseases, severe digestive malabsorption or eating disorder, or human immunodeficiency virus infection or acquired immune deficiency syndrome; a high probability of receiving a kidney transplant or transition to hemodialysis or dropout due to socioeconomic causes within 6 months; or women who were pregnant or lactating.

All consenting patients were randomized 1:1 to either vitamin D supplementation (intervention group) or no vitamin D supplementation (control group). Participants in the vitamin D group received additional vitamin D (Liquid Natural Vitamin D3, Cholecalciferol) in a dose of 2000IU orally per day for 12 months following randomization. Participants in the control group did not receive any study drug or any form of vitamin D2/D3 or drugs known to alter serum 25(OH)D levels during the study period. For both groups, all dialysis and other medication prescriptions were in accordance with routine clinical care and International Society for Peritoneal Dialysis guideline recommendations.

The primary outcomes were feasibility (recruitment success, retention, adherence, safety) and fidelity (change in serum 25(OH)D level during follow-up) for a large, randomized controlled trial in the future to determine the effects of vitamin D on PD-related peritonitis. Secondary outcomes were time to peritonitis occurrence, and outcome of subsequent peritonitis.

Between September 30th 2017 and May 28th 2020, 60 among 151 patients were enrolled and randomized to the vitamin D group (n=31) or the control group (n=29). The mean duration of follow-up was 11.12 ± 2.15 months in the VD group, 11.55 ± 1.72 months in the control group. The recruitment rate was 39.7%, 95%CI 31.9% - 47.5%, recruitment rate among eligible patients was 61.9%, 95% CI 52.2% - 71.5%). Retention and adherence rates were 100.0% (95% CI: 100.0–100.0%) and 81.5% (95% CI: 66.8–96.1%), respectively. During follow-up, serum 25(OH)D levels increased in the vitamin D group (from 19.25 ± 10.11 nmol/L to 60.27 ± 23.29 nmol/L after 6 months, $P < 0.001$, n=31), and remained higher ($P < 0.001$) than those in the control group (n=29). Adverse events were uncommon. The primary outcomes assessing the feasibility (recruitment success, retention, adherence, safety) and fidelity for a powered study in the future have all achieved anticipated levels.

Patients in the vitamin D and control groups were well matched for all baseline characteristics. No differences were observed between the two groups with respect to time to subsequent peritonitis (hazard ratio [HR] 0.85, 95% CI 0.33-2.17), or any of the peritonitis outcomes. However, due to lack of power on secondary outcome, we could not draw definitive conclusions regarding the effects of vitamin D supplementation on peritonitis occurrence.

The present study demonstrated that performing a vitamin D supplementation trial is feasible in terms of recruitment, retention, and treatment adherence. Previous data from our center have shown that lower serum 25(OH)D level is independently associated with an increased risk of PD-related peritonitis [7]. During a follow-up period of more than 2 years, patients with middle and higher tertiles of serum 25(OH)D had significantly decreased peritonitis risk compared with those in the lowest tertile group, with hazard ratios of 0.54 (95% CI 0.31 - 0.94) and 0.39 (95% CI 0.20 - 0.75), respectively [7]. The mechanism of the preventive effect of vitamin D on peritonitis lies in its role in strengthening the innate immune system via multiple pathways.³ Serum 25(OH)D could be transformed to 1,25(OH)D and combine with vitamin D receptors on the surface of immune cells, promoting maturation of dendritic cells and macrophages, inducing the production of antimicrobial peptides, and reducing the release of inflammatory factors. Increasing serum level of 25(OH)D could enhance the anti-infectious ability of the human body and limit the potential inflammatory damage [3]. Due to limited sample size, the present study was not adequately powered for the secondary outcomes, a larger study exploring the effects of oral vitamin D supplementation on PD-related peritonitis is warranted.

Conclusions

A randomized controlled trial of the effect of vitamin D supplementation on peritonitis occurrence in patients receiving PD is feasible, safe and results in adequate serum 25(OH)D levels. This study will help inform the design and conduct of a future, adequately powered trial.

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Incremental peritoneal dialysis in older patients



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As a regimen of peritoneal dialysis (PD), incremental PD (iPD) is defined as the strategy of dialysis prescribing less than “full dose” at the start of PD for the existence of residual kidney function (RKF), and gradually increased afterwards to compensate ongoing individual RKF loss to achieve individualized clearance goals [1]. The strategy aligns to the latest guideline of International Society for Peritoneal Dialysis (IPSD), which recommended to prescribe high-quality, goal-directed PD [2]. iPD offers the advantages of improving quality of life, preserving RKF, reducing glucose exposure, peritonitis, and cost [3-6]. With the aging population, the proportion of older patients with ESRD has increased worldwide, and nearly half of the CKD patients in China were over 60 years old in 2015 [7, 8]. Older PD patients typically suffer from more comorbidities and decreased physical and cognitive functions compared with younger counterparts. Therefore, some PD prescriptions that are appropriate for younger patients may not be suitable for older patients. Until now, the efficacy and safety of iPD for elderly patients remains unknown.

We recently analyzed the clinical outcomes of older patients with iPD, and further investigated the feasibility of iPD in those patients [9]. In this retrospective cohort study, we enrolled PD patients with age ≥ 60 years old at our center from 2008 to 2017. The patients were divided into two groups based on the daily PD exchanges: iPD group ($\leq 3 \times 2$ L exchanges), and full dose group ($\geq 4 \times 2$ L exchanges). Kaplan-Meier curves and multivariate Cox regression models were applied to evaluate the risks of anuria and mortalities between groups.

A total of 238 (186 in full dose group and 52 in iPD group) patients were enrolled. The mean age was 67.8 ± 5.7 years, and 45.8% were females. The baseline glomerular filtration rate was 4.15 ± 2.39 ml/min/1.73 m². The proportion of patients in the iPD group who changed their daily exchanges to 4×2 L gradually increased from 13.4% in the first years of PD initiation to 61.5% at the end of 48 months. A total of 15 patients (27.2%) in the incremental group and 60 (32.3%) in the full dose group had developed into anuria gradually until the end of follow-up. The incremental group had a higher anuria-free survival rate compared to the full dose group ($p = 0.009$). Multivariate Cox regression models showed that patients in the iPD group had significantly decreased risk of anuria (hazard ratio [HR] 0.44, 95% confidence interval [CI] 0.24 – 0.81, $p = 0.008$).

During a median of 69.7 months (IQR, 45.0–102.6 months) of follow-up, a total of 124 deaths (52.1%) were recorded, of which 72 (58.1%) were due to CV events. Compared to the full dose group, patients on iPD had superior overall survival and CV event-free survival (log-rank test; $p = 0.008$ and $p = 0.009$, respectively). In the multivariable Cox regression analysis, the iPD group showed a significantly decreased risk of all-cause mortality (HR 0.59, 95% CI 0.36 – 0.98, $p = 0.040$) after adjusting for sex, BMI, presence of diabetes, history of CVD, DBP, BUN, Hb, nPCR, and urine volume. While a marginally significant association of iPD with CV mortality (HR, 0.51; 95% CI, 0.25–1.05; $p = 0.07$) was observed when adjusting the variables of sex, BMI, presence of diabetes, history of CVD, DBP, nPCR, and urine volume.

During the follow-up period, 103 patients (43.3%) suffered from 198 episodes of peritonitis in total, of which 44 episodes occurred in 20 patients with iPD and 154 happened in 83 patients with full dose dialysis. During the first 12 months after PD initiation, the peritonitis rate in the iPD group was 0.096 episodes per person-year, and the peritonitis rate (0.217 episodes per person-year) in the full dose group was twice as high as that in the iPD group. At 36 months after PD commencement, the incidence of peritonitis was significantly lower in the iPD group than that in the full dose group (0.115 episodes per person-year vs. 0.197 episodes per person-year; $p = 0.03$).

A total of 35 patients (14.7%) occurred PD technique failure during the follow-up period, of whom, nine patients (25.7%) came from incremental group and 26 patients (74.3%) came from full dose group. For death-censored technical survival, there was no significant difference between the two groups as calculated using the Kaplan-Meier method and log-rank test ($p = 0.82$).

In the sensitivity analysis, we further matched the iPD and full dose groups at a ratio of 1:2 using propensity score matching (PSM) and reanalyzed the associations of PD regimens with clinical outcomes in older patients. Cox Regression analysis showed that older patients in the iPD group had decreased risk of anuria (HR, 0.47; 95% CI, 0.24–0.93; $p = 0.03$), all-cause mortality (HR, 0.57; 95% CI, 0.33–0.98; $p = 0.04$) and CV mortality (HR, 0.45; 95% CI, 0.21–0.99; $p = 0.047$) compared to patients in the full dose group. These results were similar to those of the unmatched cohort. Peritonitis rates in the iPD group were lower than those in the full dose group in the first year and the third years of PD, although the difference was insignificant. In the diabetes subgroup, the risks of anuria, all-cause mortality, CV mortality, and peritonitis were comparable between the iPD group and full dose group.

Despite the potential advantages of iPD, it should be noted that all the patients, especially elderly patients, need to be well-informed about the necessity of subsequent prescription adjustment based on their clinical status when they commence iPD, to ensure patient compliance during follow-up period [10].

In summary, our results demonstrated that older patients with iPD had better patient survival, preservation of RKF and reduced peritonitis compared to full dose PD. As older patients on PD have a relatively short life expectancy, more attention should be paid to improving their quality of life and reducing the inconvenience caused by their mobility disorders. Our results indicate that the iPD strategy might offer a feasible option for older PD patients.

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Constipation - Why it Matters in Patients with Peritoneal Dialysis



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Constipation is a common gastrointestinal problem in the general population and patients with kidney failure characterized by infrequent bowel movements or difficulty passing stools. The prevalence of constipation varies widely from 14% to 90%, depending on the diagnostic tool employed. Its prevalence and severity are amplified in PD patients by several factors, including advanced age, sedentary lifestyle, diabetes, fluid restriction, and polypharmacy (e.g., phosphate binders, iron supplements, calcium channel blockers, antidepressants, painkillers). Constipation can significantly impact both physical and mental well-being, leading to increased anxiety, distress, and depression. In PD, constipation is a potential risk factor for peritonitis, attributed to bowel wall leakage and suboptimal dialysis efficiency due to catheter malfunction. Currently, the International Society for Peritoneal Dialysis (ISPD) advocates for the routine assessment of patient-reported outcomes (PRO) as a crucial measure to ensure the provision of high-quality PD care. Consequently, adopting a proactive approach in considering constipation as a significant aspect of patient care is imperative. However, few studies have explored the impact of constipation on patient outcomes in PD patients. Here, we summarize the findings from the Thailand Peritoneal Dialysis Outcomes and Practice Patterns Study (PDOPPS), **Constipation and Clinical Outcome in Peritoneal Dialysis: Results from Thailand PDOPPS**, which was recently published in *Nephrology*, August 2023.

The study was conducted in patients across 22 facilities participating in the Thailand PDOPPS from 2014 to 2017. Constipation diagnosis utilized objective assessment tools such as the Bristol Stool Form Scale (BSFS) and a self-reported questionnaire known as the constipation severity score (CSS). The BSFS is a 7-level scale that visually inspects feces based on texture and morphology, while the CSS measures constipation duration and severity using a 5-point Likert scale for various factors. Cox proportional hazards model regression to determine the associations between constipation and clinical outcomes, including mortality, hemodialysis (HD) transfer, and peritonitis.

Among 975 randomly selected PD patients from 22 facilities, 845 provided written informed consent, and 729 completed the CSS questionnaire. Constipation was prevalent in the PD population (13%), particularly among older patients, those who were caregiver dependent, had diabetes, and poorer nutritional status (indicated by lower time-averaged serum albumin, potassium, creatinine, and phosphate concentrations). **Twenty-seven percent of patients with constipation experienced symptoms for over a year**, highlighting the importance of closer monitoring and more proactive measures to alleviate constipation. **Notably, self-reported constipation at baseline was significantly associated with a shorter time to first peritonitis and higher rates of peritonitis (84% increased hazard) and death (120% increased hazard) but was not associated with HD transfer** (Figure 1). Peritonitis episodes caused by enteric pathogens tended to occur more frequently in the constipation group.

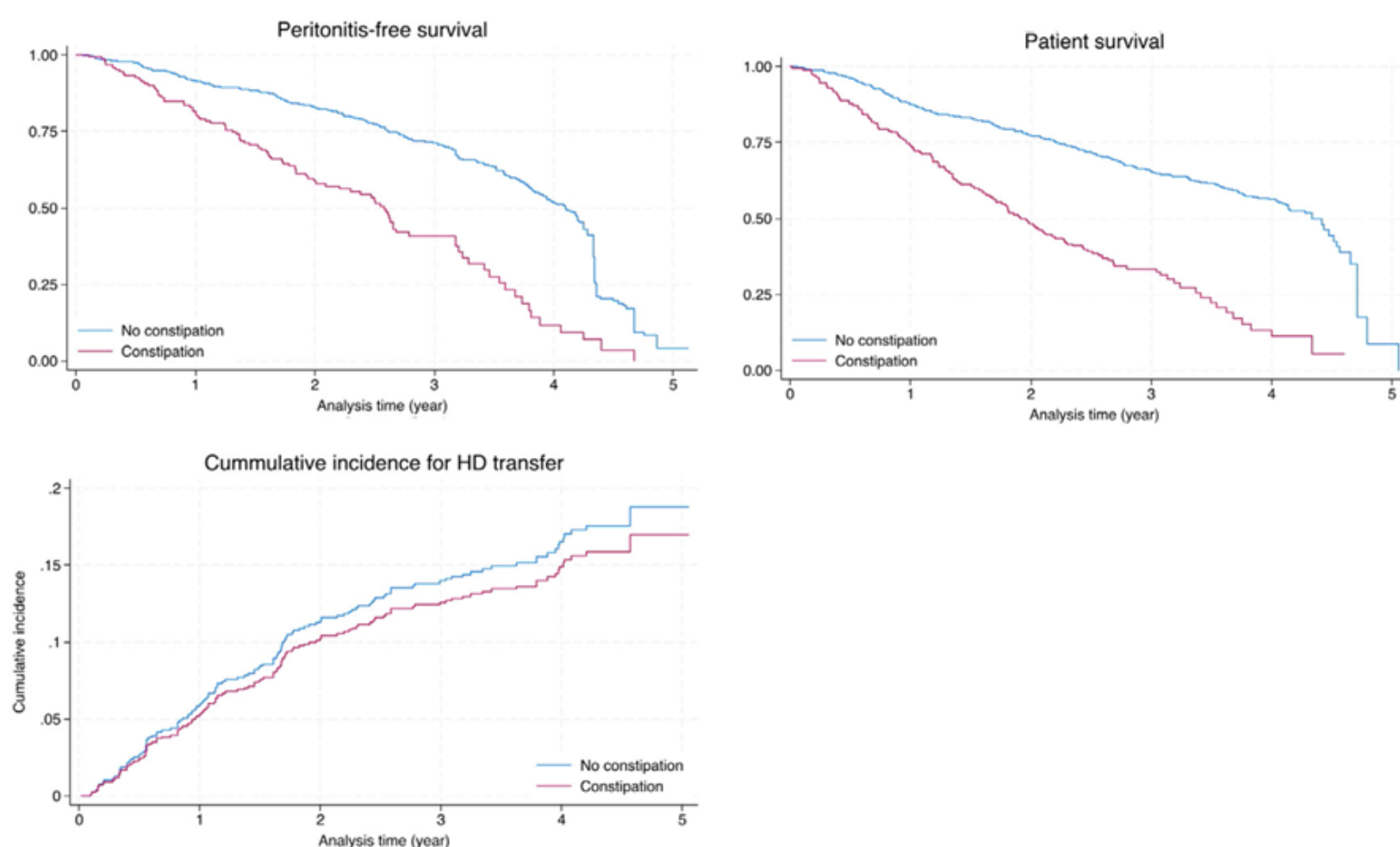


Figure 1. Kaplan Meier curves for patient survival and first time of peritonitis and cumulative incidence for hemodialysis transfer.

Additionally, constipation had negative correlations with quality of life (physical component) and functional status score (assessed by Katz questionnaire and Lawton-Brody questionnaire), and a positive correlation with depression symptom score (assessed by the Center of Epidemiologic Studies Depression Scale–10 Items, CES-D-10), indicating a higher prevalence of constipation among participants with greater depressive symptoms.

Overall, the study highlights the high prevalence of constipation among PD patients and its independent association with increased risks of peritonitis and mortality. However, constipation was not significantly associated with HD transfer. These findings have important implications for clinicians involved in treating PD patients. By utilizing a constipation diagnostic tool like the CSS, clinicians can identify individuals at a higher risk of peritonitis and death, enabling them to prioritize these patients for closer monitoring and consider appropriate laxative treatment. Managing constipation in PD patients requires a multidisciplinary approach, incorporating dietary adjustments, fluid management, physical activity promotion, and medication interventions. Healthcare providers must address constipation-related concerns proactively and offer suitable interventions to improve patients' quality of life and overall outcomes.

The study strengths: 1) lengthy follow-up period of 3.2 years, 2) multicentre design involving multiple healthcare facilities, and 3) large sample size with substantial numbers of peritonitis (521 episodes), HD transfer (118 episodes), and death events (347 events).

The study limitations: 1) the diagnosis of constipation relied on a subjective, self-report questionnaire, and 2) the voluntary and self-administered nature of the questionnaire may have led to the potential under-representation of patients with poorer functional status, as they might have been less likely to respond.

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2023 ISPD Catheter-Related Infection Guideline - Chinese Version

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In a recent BMJ Open article on barriers and enablers of implementing clinical practice guidelines, the importance of language diversities was addressed. As such, providing necessary language support services could be an important strategy to overcome the language barrier. To transcend the language barriers or boundaries the ISPD Peritonitis Guidelines 2022 have been translated to Chinese, Turkish, Russian, Portuguese, Japanese and French versions. The more recent 2023 ISPD Catheter-Related Infection Guidelines has recently been translated into Chinese version, thanks to the collaboration of the International Association of Chinese Nephrologists (IACN) with ISPD.

Special Series/Guidelines

ISPD Catheter-related Infection Recommendations: 2023 Update

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Abstract
Peritoneal dialysis (PD) catheter-related infections are important risk factors for catheter loss and peritonitis. The 2023 updated recommendations have revised and clarified definitions and classifications of exit site infection and tunnel infection. A new target for the overall exit site infection rate should be no more than 0.40 episodes per year at risk. The recommendation about topical antibiotic cream or ointment to catheter exit site has been downgraded. New recommendations include clarified suggestion of exit site dressing cover and updated antibiotic treatment duration with emphasis on early clinical monitoring to ascertain duration of therapy. In addition to catheter removal and reinsertion, other catheter interventions including external cuff removal or shaving, and exit site relocation are suggested.

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Guideline

2023 年更新的国际腹膜透析学会导管相关感染推荐

ISPD Catheter-Related Infection Recommendations: 2023 Update

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