ISPD Asia-Pacific Chapter Newsletter, April 2025

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Prepared by Chia-Te Liao and Talerngsak Kanjanabuch

News from the ISPD

Message from ISPD-APC Chapter Convenor

Professor Talerngsak Kanjanabuch, M.D.

As we continue to advance the practice of **peritoneal dialysis (PD) across the Asia-Pacific region**, I warmly invite you to actively engage with **ISPD-APC** and its ongoing initiatives. The upcoming **11th ISPD-APCM 2025**, to be held from **3–7 September 2025 in Kuala Lumpur, Malaysia**, promises to be a milestone gathering under the theme **"Transforming and Empowering Success in PD."** I encourage you to help champion this congress as a leading platform for meaningful knowledge exchange and for shaping the future of PD in our region.

I also encourage eligible **nephrologists and renal nurses** to apply for the **ISPD-APC Scholarships** (application deadline: **30 June 2025**)—a unique opportunity for immersive, hands-on training at a recognized PD center of excellence. A list of training centers is available on the ISPD website (www.ispd.org).

To further enrich our learning environment, the **bi-monthly ISN-ISPD PD Joint Case Discussions** offer a dynamic forum for analyzing real-world cases and gaining valuable peer insights. Your involvement in these sessions contributes significantly to strengthening PD education and practice across the region.

Let us continue, together, to foster a **resilient PD community** — one built on shared knowledge, mutual respect, and a commitment to continuous improvement.

Talerngsak Kanjanabuch, M.D.
Director of the Center of Excellence in Kidney Metabolic Disorders
Professor of Medicine, Division of Nephrology | Department of Medicine
Faculty of Medicine | Chulalongkorn University | Bangkok Thailand
ISPD-APC Chapter Convenor and ISPD Council Member

ISPD APC 2027 meeting call for bidding

Deadline for bidding

30 June 2025

Submission of application

Eligibility Criteria: Potential bidders must not have hosted ISPD or APCM-ISPD conferences within the last 5 years.

A soft copy of the bid application should be sent to the ISPD APC coordinator:

Professor Talerngsak Kanjanabuch; Email address: golfnephro@hotmail.com

Content of the bid application

- The name of president of the local organizing committee
- Confirmation of support from the national or regional society of nephrology
- The proposed timing and venue of conference

- The convention facilities with preferably a venue hotel in the convention complex.
- The bidders are encouraged to provide information on their previous experience hosting similar conferences to assess their capability
- The strength and experience of the local organizing committee, national or regional society of nephrology in relation to PD practice, development, research, and organization of conferences
- Rationale why Asia Pacific Chapter conference should be hosted in that country
- Transportation information and accommodation details (at different budgetary levels)
- The proposed budget to host the meeting
- Local attractions for visitors

Financial Arrangement

Any profits arising from the Congress will be split 50-50 between the Local Organization Committee and the ISPD. Most of the profit going to ISPD will be used for promotion and development of PD in the Asia Pacific region. Any further financial loss will be the responsibility of the organizing committee.

Proposal Review Process

All applications will be shortlisted and presented at APCM-ISPD 2025 in Kuala Lumpur, Malaysia. Decisions will be announced shortly after the event.

Monthyl Joint ISN-ISPD Online Case Discussion (Zoom Meeting)

Organised by the ISPD-APC and ISN Oceania and South-East Asia (OSEA)

The **Monthly Joint ISN–ISPD Online Case Discussion** is a collaborative initiative between the **ISPD-APC Core Committee and ISN-OSEA Regional Board** aimed at promoting clinical dialogue and shared learning among nephrology professionals across the region. Sessions will be held virtually via Zoom, with case presentations alternating monthly between glomerulonephritis and PD topics.

1. **Objective:** The case discussions are designed to foster interactive learning and facilitate professional exchange among nephrologists and allied healthcare professionals in the Asia-Pacific region.
2. **Target Audience:** The sessions are open to nephrologists, nephrology fellows, nurses, and other healthcare professionals with an interest in PD and glomerular diseases.
3. **Case Submission:** Members are encouraged to submit PD cases for discussion. Submissions can be sent directly to Professor Talerngsak Kanjanabuch via email at golfnephro@hotmail.com.
4. **Dissemination:** Information about upcoming sessions, including case details and meeting links, will be circulated through the regional network approximately one week prior to each meeting. The next PD case discussion is scheduled for **May 2025**. We look forward to your active participation and continued support in strengthening nephrology education across our region.

The recordings of the previous Case Study sessions are available on a dedicated ISPD YOUTUBE PLAYLIST. There are currently four case study sessions that you can review at your own pace.

VISIT THE ISPD YOUTUBE CHANNEL with all our webinars, journal clubs, and case studies; or SUBSCRIBE TO THE CHANNEL to receive notifications on new materials when they are published.

Apply Now: ISPD-APC Scholarships for PD Training in the Asia-Pacific Region

The **ISPD Asia-Pacific Chapter (ISPD-APC) Scholarships** are now open for applications. These scholarships aim to enhance peritoneal dialysis (PD) expertise across the region by supporting nephrologists and renal nurses from developing Asia-Pacific countries to undertake **2–3 months of training** at a recognized PD center of excellence.

Each award, up to **USD 3,000**, covers travel, living expenses, and learning-related costs. Applicants must be **ISPD members** and meet relevant experience requirements. Priority is given to projects that strengthen PD services in underserved areas. The next application deadline is **30 June 2025**.

This is a valuable opportunity to deepen your PD knowledge, gain practical experience, and contribute to improving care in your community. For more information or to submit your application, please contact: Professor **Talerngsak Kanjanabuch, M.D.,** *golfnephro@hotmail.com*

BECOME THE NEXT PDI EDITOR IN CHIEF

Peritoneal Dialysis International is currently seeking expressions of interest for a new Editor-In-Chief to take over the leadership of the journal from Dr. Jeffrey Perl in 2026. The journal prides itself on its commitment to publishing innovative work by scholars from around the world, and candidates should have a distinctive vision for the future of the journal, to build on this past success to take the journal forward. The new EIC will work closely with the current EIC for a transition period and will have the support of the PDI Editorial Board, a support team from SAGE (the journal's publisher), and administrative support from the ISPD secretariat. The journal publishes six issues per year.

Download the call for Expressions of Interest

Renew your membership!

A quick reminder of the different membership options for staying connected to the ISPD

Individual memberships

- For Trainees and Fellows: A very discounted membership for USD $60 per year.
- For Doctors: Full membership for one year costs USD $175, but there are great discounts for 2- and 3-year membership packages.
- For Nurses/AHPs: Full membership for one year costs USD $100, and there are also discounted packages for 2- and 3-year membership packages.

  - An Associate Nurse/AHP option is also available for $15 USD per year (with limited benefits).
- Retired Professionals can enjoy a discounted membership for $80 USD per year.

Group memberships

- Society Membership: Your national society can contact the ISPD and negotiate a discounted price for groups of members.
- Institutional/Collective memberships: in low and middle income countries, groups of up to 10 members can join in a combined membership for only USD $175.

Visit https://ispd.org/memberships/ to join the ISPD or renew your membership.

Membership benefits of the ISPD include:

- Subscription to Peritoneal Dialysis International
- ISPD Newsletter sent every two months
- Direct access to all ISPD Educational materials: ISPD Guidelines, Webinars, Journal Clubs, Case Discussions...
- Special registration fees at ISPD events, including the ISPD APC Meeting in September 2025 in Kuala Lumpur
- Opportunity to apply for ISPD Scholarships and Grants

Upcoming Meetings

11th ISPD Asia Pacific Chapter Meeting 2025

We are delighted to welcome you to the **11th APCM-ISPD 2025** held in conjunction with the 39th MSN Congress under the theme **"Transforming &** Empowering **Success in** Peritoneal **Dialysis".**

Join us in **Kuala Lumpur, Malaysia** from **3rd to 7th September 2025** in Kuala Lumpur Convention Centre for the prestigious event.

Explore the pre-congress agenda, main program, key dates, abstract submission and more details. We look forward to your participation!.

Please visit our congress website at www. ispdkl2025.com for more details.


Organizer:
MALAYSIAN SOCIETY OF NEPHROLOGY
ISPD
Supported by:
Malaysia Convention & Exhibition Bureau
Meet in Malaysia
BE Greater, Together.
Malaysia Truly Asia
SAVE THE DATE
www.ispdkl2025.com
TRANSFORMING & EMPOWERING SUCCESS IN PD
3 - 6 SEPT 2025
11th Asia Pacific Chapter Meeting of the International Society of Peritoneal Dialysis
6 - 7 SEPT 2025
39th Annual Congress of the Malaysian Society of Nephrology
11TH APCM-ISPD
in conjunction with
39TH MSN ANNUAL CONGRESS 2025
Kuala Lumpur Convention Centre, Malaysia


Wednesday, 3 September 2025
Room 302 & 303, Level 3,
KL Convention Centre
TRANSFORMING & EMPOWERING SUCCESS IN PD
Bak-Leong GOH Malaysia
Brett CULLIS South Africa
Eddie TAN New Zealand
Christopher LIM Malaysia
Hui-Kim YAP Singapore
Vinoth KASI RAJAN Malaysia
Bee-Boon CHEAK Malaysia
Mohd Kamil AHMAD Malaysia
Wan Zul Haikal Hafiz WAN ZUKIMAN Malaysia
APCM-ISPD 2025
PRE-CONGRESS: PD ACCESS
This session explores the pivotal role of vascular access in peritoneal dialysis, highlighting the latest advancements and strategies to enhance access, optimize outcomes, and ensure seamless, effective treatment.
KEY TOPICS
• Innovations in Vascular Access for PD
• Overcoming Access Challenges: Patient-Centered Approaches
• Long-Term Access Maintenance Strategies
• Global Perspectives on Access to PD Care
WHY ATTEND
• Stay ahead of the curve with cutting-edge access techniques
• Collaborate with leading experts to improve access solutions worldwide
• Gain valuable insights into the future of dialysis access
WHO SHOULD ATTEND
• Physicians and surgeons specializing in nephrology, dialysis, and vascular access
• Nurses and healthcare professionals involved in access management
• Clinical specialists focusing on access techniques and maintenance
• PD professionals looking for innovative approaches to vascular access
• Researchers and clinicians eager to discuss and implement better access
ENTRY FEES: RM750
Limited Seats
+ Attendance E-Certificate
+ MMA CPD Points
REGISTER NOW
www.ispdkl2025.com


Wednesday, 3 September 2025
Room 306, Level 3,
KL Convention Centre
TRANSFORMING & EMPOWERING SUCCESS IN PD
Josephine CHOW Australia
Irene WONG Malaysia
May-Ki LAM Hong Kong
Norashikin MOHD IZAN Malaysia
Hariyati Shairaa ABDUL MAJID Malaysia
Fazlina SURANI Singapore
APCM-ISPD 2025
PRE-CONGRESS: PD NURSING
Nurses are the backbone of peritoneal dialysis care, and this pre-congress session focuses on empowering nursing professionals to deliver optimal patient outcomes. Attendees will gain practical knowledge, strategies, and resources to enhance their role in PD care.
KEY TOPICS
• Advanced Nursing Practices in Peritoneal Dialysis
• Patient Education and Empowerment
• Innovations in Nursing: Improving PD Treatment and Patient Satisfaction
• Collaborative Care: Working with Multidisciplinary Teams
WHY ATTEND
• Discover new techniques and strategies to improve patient care
• Interact with global leaders in nursing and PD
• Expand your clinical knowledge and skills
WHO SHOULD ATTEND
• Registered Nurses (RNs) working in dialysis units or nephrology settings
• Nurse Practitioners and Clinical Nurse Specialists interested in PD care
• Nursing educators looking to enhance PD training programs
• Any healthcare providers involved in peritoneal dialysis patient management
• Nurses who want to expand their skills and knowledge in PD treatment
ENTRY FEES: RM400
Limited Seats
+ Attendance E-Certificate
+ MMA CPD Points
REGISTER NOW
www.ispdkl2025.com


Wednesday, 3 September 2025
Room 304, Level 3,
KL Convention Centre
TRANSFORMING & EMPOWERING SUCCESS IN PD
Bak-Leong GOH Malaysia
Adrian LIEW Singapore
Isaac TEITELBAUM USA
Eddie TAN New Zealand
Marjorie FOO Singapore
Narayan PRASAD India
Esther TAN Malaysia
Mohd Kamil AHMAD Malaysia
Shahnaz SHAH FIRDAUS KHAN Malaysia
Tilakavati KARUPAIAH Malaysia
APCM-ISPD 2025
PRE-CONGRESS: PD FOUNDATION
Join this pre-congress session for a comprehensive introduction to peritoneal dialysis, designed for healthcare professionals looking to strengthen their foundational knowledge and global impact.
KEY TOPICS
• Basics of Peritoneal Dialysis: Principles & Practice
• Early Stage Intervention in PD
• Optimizing Patient Care through Evidence-Based Strategies
• Collaborative Approaches for Better Outcomes
WHY ATTEND
• Learn from world-renowned experts in PD
• Gain key insights into the latest trends & best practices
• Network with professionals from across the globe
WHO SHOULD ATTEND
• Healthcare professionals new to PD
• Physicians, residents, & fellows interested in expanding their PD knowledge
• Nurses seeking foundational training in PD
• Medical students or trainees pursuing careers in nephrology
• Any professionals interested in improving patient care in PD settings
ENTRY FEES: RM500
Limited Seats
+ Attendance E-Certificate
+ MMA CPD Points
REGISTER NOW
www.ispdkl2025.com

Guideline Update

Stronger Defenses, Safer Dialysis: Key Strategies from the 2024 ISPD Guidelines to Prevent Infections in Pediatric PD



Konggrapun Srisuwan [1] (left), Professor Talerngsak Kanjanabuch [2] (middle), and Professor Bradley A. Warady [3] (right)

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Correspondence to: Professor Talerngsak Kanjanabuch; Email address: golfnephro@hotmail.com

Introduction

Infection-related complications remain a major challenge in pediatric peritoneal dialysis (PD), often leading to treatment discontinuation. The **2024 Clinical Practice Guideline for the Prevention and Management of PD-Associated Infections in Children**, published in *Peritoneal Dialysis International* (PDI 2024; 44(5):303–364), builds upon the 2000 and 2012 ISPD guidelines, which laid the foundation for infection prevention and treatment. This latest update integrates new evidence from key international registries, including the International Pediatric Peritonitis Registry (IPPR), the International Pediatric Peritoneal Dialysis Network (IPPN), and the Standardizing Care to Improve Outcomes in Pediatric End-Stage Kidney Disease (SCOPE) collaborative, providing a stronger evidence base to refine infection control strategies.

Developed by a global panel of pediatric nephrologists, infectious disease specialists, a pediatric dialysis nurse, pediatric pharmacologists and methodology experts, these recommendations follow the **GRADE system**, classifying guidance as **Level 1 (We recommend)** or **Level 2 (We suggest)**, with evidence graded from **A (high quality) to D (very low quality)**. Most prevention strategies are based on **moderate to low-quality evidence (2C and 2D)**, reinforcing best practices despite limited randomized trials.

This summary, prepared for the **ISPD-APC Newsletter (April Chapter)**, highlights **infection prevention**, focusing on **catheter care, exit-site hygiene, and prophylactic antibiotic use**. The August Chapter will cover the management of peritonitis and catheter-related infections. By making these evidence-based recommendations more accessible, we aim to support pediatric dialysis teams across the Asia-Pacific region in reducing infections and improving outcomes. PD centers are encouraged to adapt these guidelines to their local infection patterns, ensuring effective and sustainable infection control for children receiving PD.

Recommendation 1: Empower Through Training

A structured training program tailored to the needs of each child and caregiver is essential for reducing infection risks in PD. Training should emphasize **hands-on learning, active participation, and competency assessments**, covering key topics such as PD exchanges, catheter care, and infection prevention. Barriers like **language difficulties, anxiety, or depression** should be identified and addressed. Home visits help assess environmental risks, optimize PD setup, and identify potential hazards such as pets. Regular retraining, ideally every six months, reinforces best practices. *(Grade 2D)*

Recommendation 2: Catheter Placement: Getting It Right from the Start

The choice of **double-cuffed PD catheters** with **downward or lateral exit-site orientation** is recommended to minimize infection risks. Catheter insertion should align with **patient needs and surgical expertise**, with

laparoscopic techniques preferred for better visualization and lower complication rates. **Preoperative prophylactic antibiotics**, such as **Cefazolin**, should be administered within 60 minutes before surgery to reduce early peritonitis risk, while routine **vancomycin use should be avoided** to prevent resistance. Local antibiograms should help guide antibiotic choice at the unit level, while infection history should guide antibiotic choice at the patient level *(Grade 2D for catheter selection and placement, 2C for prophylactic antibiotics)*

Recommendation 3: Early Exit-Site Care: Less Is More

To protect the catheter exit-site, the **first dressing change should be delayed for at least seven days post-insertion**, unless the dressing becomes soiled, wet, dirty, or detached. **Non-occlusive gauze dressings** are recommended to allow airflow and prevent moisture buildup, reducing infection risk. The **transfer set should be securely positioned** to minimize movement of the exit-site dressing and avoid trauma. Strict adherence to **sterile technique** during dressing changes until the exit site has healed, is essential for infection prevention. *(Grade 2C)*

Recommendation 4: Long-Term Exit-Site Care: A Clean Routine

Regular cleaning of the exit site (**2–3 times per week and after water exposure/exercise**) is crucial to prevent infections. **Topical antibiotic application** at the exit site is recommended, with **mupirocin as the preferred agent** to prevent *Staphylococcus aureus* infections. However, due to rising resistance and risks of *Pseudomonas* and fungal infections, **gentamicin cream is an alternative option**. *(Grade 2D for both routine exit-site care and topical antibiotics use)*

Recommendation 5: Flush Before Fill: A Simple Yet Powerful Step

The **"Flush before Fill" technique** should be implemented with every PD bag exchange to reduce contamination risks. This practice is embedded in modern PD systems such as **Twin-bag, O-set, and Y-set for CAPD**, as well as **automated PD (APD) cyclers**. While pediatric studies remain limited, available data suggest a **lower peritonitis incidence** with this approach. *(Grade 1A – Strong recommendation with high-quality evidence)*

Recommendation 6: Infection Risk in Nutritional Support

For children requiring **gastrostomy tubes (GTs)**, insertion should ideally be performed **before or at the same time as PD catheter placement** to reduce infection risks. **Laparoscopic or open GT placement is preferred** over **percutaneous endoscopic gastrostomy (PEG)** due to a lower risk of peritonitis. **Prophylactic antibiotic and antifungal therapy** should be considered, especially for high-risk cases. Colostomy patients may benefit from **exit-site location on the chest wall** to reduce contamination risk. *(Grade 2D for GT placement timing, technique, and prophylactic antimicrobial use)*

Recommendation 7: Smart Antimicrobial Use: Balancing Protection and Resistance

To prevent **fungal peritonitis**, **prophylactic antifungal agents (e.g., Nystatin or Fluconazole)** should be given **during systemic or intraperitoneal antibiotic therapy**. **Nystatin is preferred** to reduce **Fluconazole resistance risk**. For **gastrointestinal (GI) or urogenital (GU) procedures**, **prophylactic antibiotics like Cefazolin or Ceftriaxone** are advised, while **routine antibiotic prophylaxis is NOT recommended for dental procedures**. In cases of **wet contamination (e.g., leaks or breaches in sterility), a single intraperitoneal dose of Cefazolin is usually sufficient**, though Vancomycin may be considered in **high-risk Methicillin-resistant *S. aureus* (MRSA) settings**. *(Grade 2D for all antimicrobial therapy recommendations)*

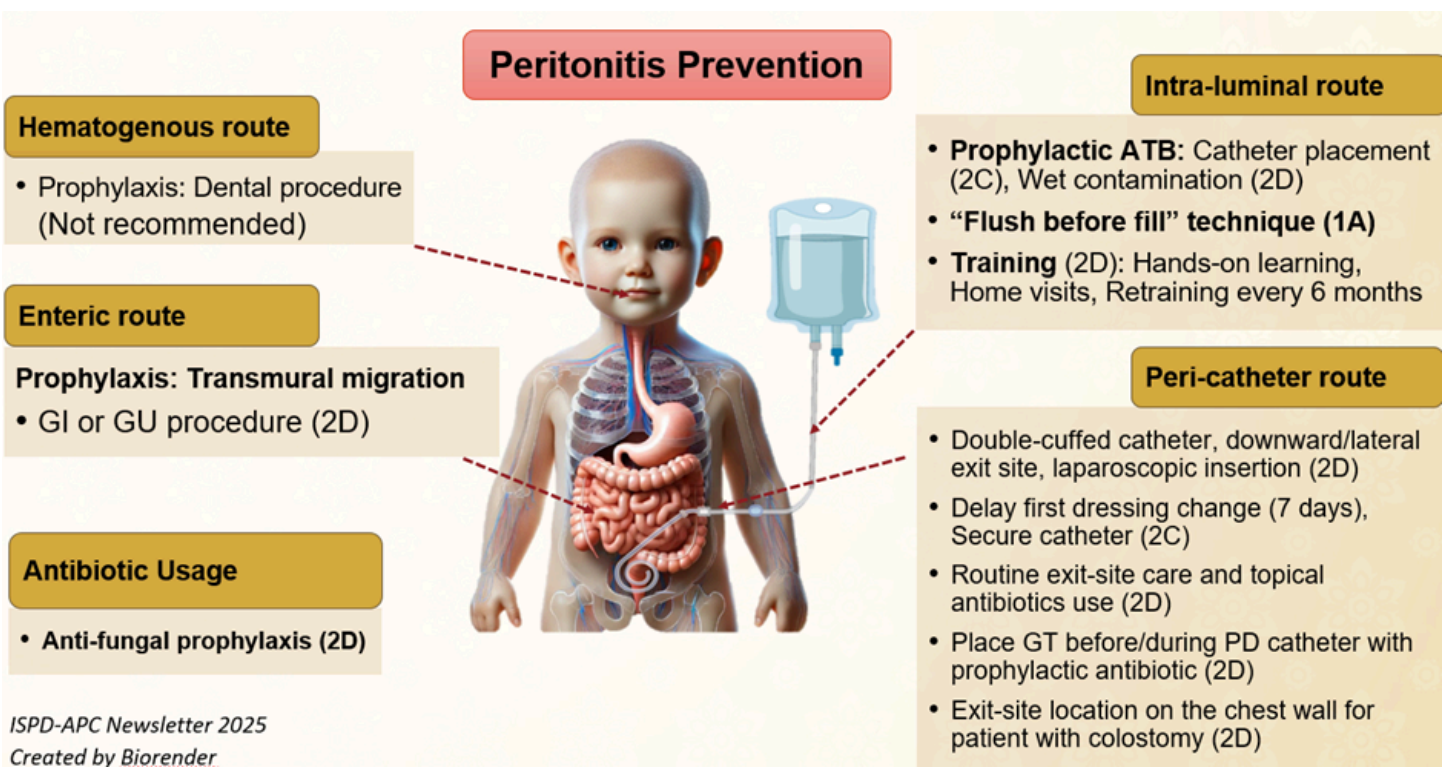

Figure 1. Key Strategies for Peritonitis Prevention in Pediatric PD Based on the 2024 ISPD Guidelines.

In conclusion, by implementing **structured training, smart catheter care, routine exit-site hygiene, and precise antimicrobial strategies**, pediatric PD teams can **drastically reduce infection rates and improve patient outcomes**. These **2024 ISPD Guidelines** offer a **clear roadmap to safer dialysis**, ensuring children across the **Asia-Pacific region** receive the best possible care.

Acknowledgements

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References

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Research News from Asia-Pacific Region

Assessment of Muscle Mass in Peritoneal Dialysis

Jack Kit-Chung Ng [1,2], Lixing Xu [1,2], Cheuk-Chun Szeto [1,2] (photo)

[1] Carol & Richard Yu Peritoneal Dialysis Research Centre, Department of Medicine & Therapeutics, Prince of Wales Hospital

[2] Li Ka Shing Institute of Health Sciences (LiHS), Faculty of Medicine, The Chinese University of Hong Kong, Shatin, Hong Kong, China

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Sarcopenia, characterized by the loss of skeletal muscle mass and function, is a prevalent and significant concern within the elderly demographic [1]. It is closely linked to negative outcomes such as falls, decreased functional capacity, increased frailty, and heightened mortality rates in the general population [1]. Among patients suffering from chronic kidney disease or those undergoing dialysis, skeletal muscle mass and functionality are crucial indicators of nutritional status. Deviations or reductions in these metrics over time are strong predictors of unfavorable patient outcomes [2].

Several methodologies exist for assessing skeletal muscle mass in patients [2]. However, each has limitations. The anthropometric approach, while straightforward, suffers from low reliability. On the other hand, radiological imaging methods are highly accurate but are impractical for routine clinical use. Recently, the measurement of lean tissue mass (LTM) through multi-frequency bioimpedance spectrometry has gained recognition as a reliable and convenient method for evaluating body composition, including skeletal muscle mass [3]. Notably, in patients with chronic kidney disease (CKD), a reduced LTM has been identified as an independent predictor of mortality [4].

On the other hand, the fat-free edema-free body mass (FEBM), determined through the creatinine kinetics method, is a traditional approach for assessing skeletal muscle mass in dialysis patients [5]. Previously, FEBM was often referenced as lean body mass by creatinine kinetics (LBM-CK) in literature [6], although the term FEBM is now recommended by the Dialysis Outcomes Quality Initiative (DOQI) guidelines. A notable advantage of utilizing FEBM as a marker of skeletal muscle mass is its ability to be seamlessly integrated into routine assessments of small solute clearance for peritoneal dialysis (PD) without necessitating additional testing. However, evidence supporting FEBM as a prognostic marker for PD patients remains limited. Earlier studies have highlighted that

FEBM is influenced by dietary intake, residual renal function, and serum albumin levels in hemodialysis patients [7]. Furthermore, there is a paucity of research exploring the relationship between FEBM and LTM. In the current study, we compared skeletal muscle mass measurements derived from both LTM and FEBM within a cohort of PD patients. Additionally, we identified clinical factors associated with discrepancies between these methods and investigated their utility in the serial monitoring of skeletal muscle mass among PD patients.

Our study was a retrospective analysis of a prospective, observational, cohort of 198 consecutive incident adult PD patients in our center [8]. Multi-frequency bioimpedance spectroscopy, 24-hour peritoneal dialysate and urinary collection, and other clinical assessment were performed on the same day around 4 weeks after the patients were stable on PD, and then repeated 12 months later. The procedures of peritoneal dialysate and urine collection followed standardized protocols. For multi-frequency bioimpedance study, the Body Composition Monitor (BCM, Fresenius Medical Care, Germany) was used to measure the LTM. FEBM was measured by the traditional creatinine kinetic method from 24-hour urine and dialysate collection and calculated by the formula described by Forbes and Brunning. The result of LTM and FEBM, as well as their serial changes, were compared by the Bland and Altman method. Multi-variable regression model was used to determine factors associated with the disparity between the two methods.

As expected, male patients had significantly higher LTM and FEBM than females. A moderate positive correlation was identified between FEBM and LTM (r = 0.309). LTM consistently exceeded FEBM, with an average difference of 13.98 kg, and the disparity was more pronounced in males. To investigate the underlying factors influencing this difference, univariate and multivariable linear regression models were utilized, which revealed associations with LTM, residual glomerular filtration rate (GFR) for both genders, age, body weight, total weekly Kt/V in males, and adipose tissue mass in females (Table 1).

Table 1. Multi-variable linear regression models on the factors associated with the discrepancy between LTM and FEBM

	B value	95% CI	P values
Male			
Age	0.229	0.116 to 0.298	< 0.0001
Weight	-2.073	-3.146 to -0.020	0.047
Lean tissue mass	2.212	0.656 to 4.301	0.008
Adipose tissue mass	1.284	-0.204 to 2.743	0.091
E/I ratio	0.500	-4.691 to 65.397	0.089
Serum albumin	0.024	-0.143 to 0.233	0.637
Total weekly Kt/V	-0.247	-6.348 to -1.228	0.004
Residual GFR	0.677	1.666 to 2.827	< 0.0001
Female			
Age	0.082	-0.039 to 0.152	0.513
Lean tissue mass	0.677	0.491 to 0.779	< 0.0001
Overhydration	0.074	-0.283 to 0.782	0.351
Adipose tissue mass	-0.355	-0.353 to -0.108	0.0004
HDL cholesterol	-0.052	-1.397 to 3.025	0.462
Total weekly Kt/V	-0.129	-5.126 to 1.872	0.354
Residual GFR	0.469	0.714 to 2.852	0.002

CI, confidence interval; E/I ratio, extracellular to intracellular fluid volume ration; HDL, high density lipoprotein; GFR, glomerular filtration rate.

Follow-up assessments after 12 months showed no significant gender differences regarding the changes in LTM (ΔLTM) or in FEBM (ΔFEBM). However, ΔLTM generally demonstrated a smaller increase than ΔFEBM. The average ΔLTM to ΔFEBM difference was -4.53 kg, but no significant correlation between the two changes was detected. A modified Bland-Altman plot revealed strong positive correlations between ΔLTM and the ΔLTM-ΔFEBM difference. Notably, ΔLTM alone was independently associated with the ΔLTM-ΔFEBM difference.

It is important to note that in the current study, LTM determined by bioimpedance spectroscopy served as the reference measurement for muscle mass. This choice was made because bioimpedance spectroscopy is a well-established method for assessing muscle mass. Importantly, both our current findings and prior research indicated that LTM measurements obtained through this method are unaffected by hydration status [9]. However, it is noteworthy that the variability in ΔLTM was greater than that of ΔFEBM, with standard deviations of 7.67 kg and 5.60 kg, respectively. This observation suggests that FEBM may offer greater reliability than LTM for the sequential evaluation of skeletal muscle mass. Further investigation into this hypothesis is warranted.

In summary, we concluded that there is a significant difference between LTM and FFBM. This discrepancy was more pronounced in male patients and correlated with LTM and residual renal function, highlighting the limitations of FFBM in assessing skeletal muscle mass.

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A predictive model for treatment effectiveness in refractory peritoneal dialysis-associated peritonitis


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While the incidence of peritoneal dialysis (PD)-associated peritonitis (PDAP) has improved recently, the frequency of refractory PDAP (rPDAP) has not decreased [1]. About 13.8% of patients with peritonitis had not cleared peritoneal dialysate after 10 days of antibiotic treatment [2]. Furthermore, 14% of patients with severely infected rPDAP experienced complications such as dialysate and prolonged abdominal inflammation, necessitating recurrent drainage [3]. In order to preserve peritoneal function in the event that patients with rPDAP return to PD in the future, the 2016 ISPD guidelines advise that patients with rPDAP be extubated as soon as possible [4].

Since only 6.3% of patients with peritonitis resume therapy after being extubated, the decision to remove the catheter is critical [5]. The updated 2022 guidelines include adjustments to the suggestion of “extubating immediately” patients with unclear peritoneal dialysate on the fifth day of peritonitis, but they do not provide a clear advice for when to extubate [6]. However, during the real course of treating peritonitis, physicians and patients frequently put off extubation for a variety of reasons, and there is some inherent risk of treatment failure for any given patient. Nevertheless, occurrences within 5 days after the start of routine antibiotic therapy may also impact it, so we expect the early model to explain both types of data. The prognosis and management of PDAP patients can therefore be improved by early identification of high-risk groups of refractory peritonitis patients with technical failure. Establishing prediction models for the prognosis of PDAP has been commonplace in recent years [7–9]. However, few models could accurately forecast how rPDAP treatment will turn out. The research on rPDAP was mainly focused on the spectrum analysis of pathogenic bacteria [10]. By analyzing the clinical data of rPDAP in PD patients in our center, we explored the factors affecting the prognosis of rPDAP patients and predicted the risk of treatment failure in rPDAP patients. According to the probability of successful treatment, targeted management measures should be taken to reduce the extubation rate of rPDAP, so as to provide decision-making basis for clinical treatment of rPDAP.

During the study period, a total of 1, 397 cases of PDAP occurred in our center, of which 558 cases were diagnosed as rPDAP, 418 cases (74.9%) required hospitalization. Finally, 440 cases with rPDAP were included in our study. Among them 304 cases (69.1%) had been successfully cured, while 136 cases (30.9%) were treatment failure, of which 19 cases (4.3%) died, 85 (19.3%) cases transferred to hemodialysis (HD) and 32 cases (7.2%) were relapse/recurrent peritonitis. Dialysate culture results showed 132 (30.0%) cases were infected with gram positive bacteria, 161 (36.6%) gram negative bacteria.

Based on univariate analysis of training data set, some variables were included in the multivariate analysis of logistics regression. Finally, according the results of multivariate analysis of training data set, previous peritonitis ≤3 times (OR 6.57, 95% CI 2.51–17.22, P <0.001) and were correlated with the better prognosis of rPDAP, while WBC in peritoneal dialysate on the third day of peritonitis (OR 0.98, 95% CI 0.96–1.00, P <0.04), or on the fifth day of peritonitis ≥300 × 10^6/L (OR 0.10, 95% CI 0.04–0.29, P <0.001), the pathogenic microorganism with Gram-negative bacteria (OR 0.29, 95% CI 0.10–0.87, P =0.03) and the duration of PD (OR 0.98, 95% CI 0.97–0.99, P=0.01) were associated with poor outcomes of rPDAP. All these variants were included in the final prediction model (P <0.05).

The nomogram, integrating these factors, demonstrated strong predictive accuracy with a C-statistic of 0.870 (95% CI 0.821–0.918) in the training cohort and 0.785 (95% CI 0.680–0.890) in validation. Calibration and decision curve analyses confirmed its clinical utility.

The practical application of the model is shown in **Figure 1**. The model is based on the assumption of a PD patient: four previous cases of peritonitis, dialysate culture results of Gram-negative organisms, dialysis duration of 48 months, peritoneal dialysate WBC on Day 3 was 2500 × 10^6/L and peritoneal dialysate WBC on Day 5 was 250 × 10^6/L. The scores are 0, 28, 66, 76 and 88, respectively, with a total score of 253. The probability of cure was 0.692 (95% CI 0.416–0.876).

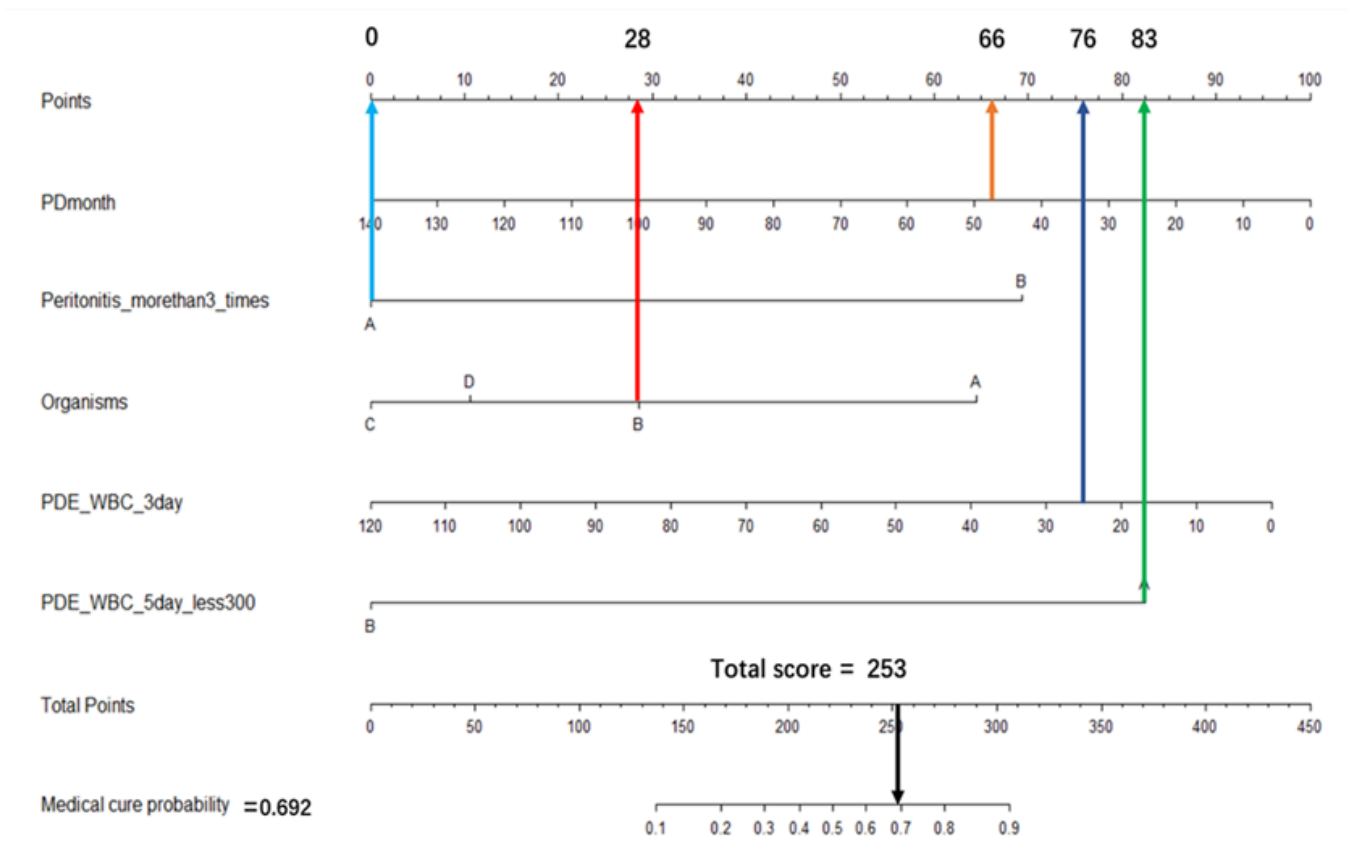

Figure 1. Nomogram for predicting cure of refractory peritoneal dialysis associated peritonitis (rPDAP).

Compared with the previous peritonitis prognosis prediction model, our prediction model may be more accurate, which may be related to the cohort we selected. After initial treatment, there are more conditions to predict the diagnosis of refractory peritonitis than newly occurred peritonitis. In addition, our included sample size has a significant advantage over previous studies of refractory peritonitis. Finally, the application of nomogram can obtain the data needed for decision-making more intuitively and conveniently, and provide intuitive reference for clinical decision-making. For the patients with high cure rate, continuous antibiotic treatment should be given and the observation period of extubation should be prolonged appropriately. If the cure rate is low, it is recommended to transfer to HD and pull out the catheter directly to avoid further complications.

In summary, our study provides a tool for predicting rPDAP treatment success, emphasizing the roles of infection type, dialysis vintage, and early inflammatory markers. By guiding timely clinical decisions, the nomogram may reduce technique failure rates and improve patient survival.

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Impact of Home-Based Exercise on Residual Kidney Function in Peritoneal Dialysis Patients: A Feasibility Multicenter Randomized Controlled Trial

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Introduction

Maintaining residual kidney function (RKF) is critical in patients on peritoneal dialysis (PD), which plays important roles in fluid homeostasis, solute clearance, cardiovascular health, and overall survival [1]. Conversely, reduced exercise capacity is a common, progressive issue associated with increased morbidity and mortality risk in patients with chronic kidney disease, including those on PD. Compared to the studies including patients on hemodialysis, considerably fewer number of studies demonstrated the benefits of exercise in patients on PD, including improvements in exercise tolerance and health-related quality of life [2–5], and the impact of exercise therapy on RKF remains unclear. The present study aimed to evaluate the potential benefits of a home-based exercise program on RKF in patients on incident PD [6].

Methods

This was a multicenter, single-blind, randomized controlled trial (RCT) including participants initiating PD within 3 months of study enrollment. To obtain real-world data that could be generalized to clinical practice, participants aged between 30 and 90 years were eligible whereas those with physical conditions considered contraindications for exercise therapy, including severe cardiovascular disease and uncontrolled hypertension, were excluded. Eligible participants were randomly assigned to the exercise or the control group. The exercise group followed a structured home-based exercise program, whereas the control group received routine care without a prescribed exercise intervention. Participants in the exercise group were instructed to engage in unsupervised aerobic exercise (AE) three times/week and resistance training (RT) twice/week for 24 weeks, which was based on the exercise recommendations for individuals with kidney disease according to the American College of Sports Medicine guidelines. Briefly, AE included unsupervised walking sessions of 20–30 min/day, with a target exercise pace of 40%–60% of the heart rate reserve and a target Borg rating of perceived exertion scale score of 11–13. For RT, the target training range was set to 70% of one repetition maximum, which was close to the weight a person could lift 10–15 times. Participants in the exercise group were instructed to work on different muscle groups, such as latissimus, deltoid, biceps, triceps, quadriceps, and gastrocnemius, for 10 repetitions in one session/day using Theraband® (Hygenic, Akron, OH, USA). The exercise guidance was provided with the direction of the rehabilitation physician and physical therapist, who conducted monthly reviews of the AE and RT target training zones during PD clinic visits and adjusted the program accordingly.

The primary outcome was RKF determined by the residual glomerular filtration rate (rGFR), the gold standard indicator of RKF in patients on PD. The secondary outcomes were urinary biomarkers of CKD progression, such as daily urinary protein excretion and urinary liver-type fatty acid-binding protein (L-FABP) level, incremental shuttle walk test (ISWT) distance to assess exercise tolerance, and glycated hemoglobin. All outcome measures were assessed at baseline and 12 and 24 weeks after baseline, except ISWT, which was assessed at baseline and 24 weeks.

Results

The final analysis included 55 patients, including 25 and 30 patients in the exercise and control groups, respectively. The mean ages and rGFRs were 65.8 ± 14.6 and 68.4 ± 11.1 years and 7.83 ± 6.65 and 6.72 ± 3.97 mL/min in the exercise and control groups, respectively. There cohort did not include patients with anuria and was predominantly male (88% and 83% of the exercise and control groups, respectively).

The linear mixed-effects models adjusted for baseline values revealed no significant differences in the mean rGFR between the exercise and control groups at 12 weeks (−0.40 mL/min, 95% confidence interval [CI] −2.17–1.36 mL/min, p = 0.65) and at 24 weeks (0.65 mL/min, 95% CI −1.15–2.45, p = 0.48) (Figure 1).

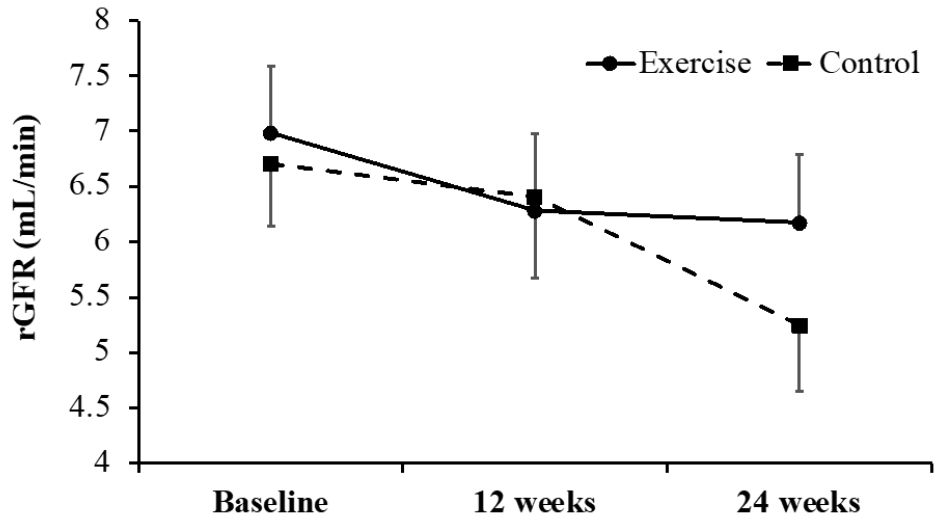

Figure 1. Linear mixed-effects model illustrating the effect of the exercise intervention on residual glomerular filtration rate (rGFR).

Among the urinary biomarkers, the mean urinary protein level at 24 weeks tended to be lower in the exercise group than in the control group (−1.07 g/day, 95% CI −2.29–0.15 g/day, p = 0.09) whereas the change in L-FABP level was not significantly different between the exercise and control groups at 12 or 24 weeks (Table 1). The ISWT revealed a trend toward improvement, whereas the glycated hemoglobin level at 24 weeks was significantly lower in the exercise group than in the control group (37.7, 95% CI −10.1–85.5, p = 0.12 and −0.57%, 95% CI −0.97% to −0.18%, p = 0.005, respectively).

Table 1. Linear mixed-effects model of the exercise intervention on secondary outcomes

	Exercise group*			Control group*			Effect of intervention†			
	Baseline	12 weeks	24 weeks	Baseline	12 weeks	24 weeks	Δ12 weeks − baseline	*P*-value	Δ24 weeks − baseline	*P*-value
Urinary protein (g/day)	2.43 ± 0.36	1.80 ± 0.36	1.40 ± 0.36	2.29 ± 0.33	2.38 ± 0.33	2.34 ± 0.33	−0.70 ± 0.61	0.25	−1.07 ± 0.61	0.09
Urinary L-FABP/creatinine (μg/g)	150.1 ± 18.0	126.3 ± 17.2	141.6 ± 17.2	151.4 ± 17.1	140.0 ± 17.6	158.6 ± 18.4	−12.4 ± 28.2	0.66	−15.8 ± 29.4	0.59
ISWT (m)	252.6 ± 13.2	–	274.7 ± 14.2	250.8 ± 11.6	–	235.2 ± 13.1	–	–	37.7 ± 23.8	0.12
Hemoglobin A1c (%)	6.04 ± 0.12	5.89 ± 0.12	5.65 ± 0.12	5.98 ± 0.12	5.94 ± 0.12	6.16 ± 0.12	−0.11 ± 0.20	0.58	−0.57 ± 0.20	0.005

*Estimated marginal mean and standard error †Effect of interaction term (time × group) with standard error

Discussion

In a previous RCT evaluating the efficacy of home-based exercise in patients on PD, we found that the exercise capacity assessed by ISWT was significantly better in the exercise group than in the control group [2]. However, RKF, which was determined by renal Kt/V, was not significantly preserved in the exercise group compared with the control group, likely due to the inclusion of patients with reduced RKF, especially those with anuria. The *post hoc* analysis excluding patients with anuria revealed that the microalbumin/creatinine ratio and L-FABP levels were lower in the exercise group than in the control group, although RKF assessed by renal creatinine clearance tended to be preserved in the exercise group [7].

However, these results were based on *post hoc* analysis, which has limited internal validity compared to RCTs. Subsequent RCTs of patients on PD did not evaluate the effect of supervised or home-based exercise on RKF [2–4, 8–10], and the present study aimed to determine whether exercise therapy could improve RKF in these patients.

Our findings failed to clearly determine whether our home-based exercise program improved RKF, although the urinary protein levels tended to be reduced in the exercise group, suggesting that these patients might maintain RKF over a longer follow-up period compared to these in the control group.

The study has several limitations, which might have contributed to the inconclusive results. The follow-up period of 6 months was too short to fully assess the impact of the exercise intervention on changes in RKF; possibility of decreased exercise adherence and missing data, especially ISWT, due to the coronavirus disease 2019 pandemic, and the lack of adherence confirmation are other limitations. Future RCTs with longer follow-up periods and confirmation of exercise adherence are necessary to conclusively determine the effect of exercise on RKF preservation.

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The Impact of Shortening Patient–Doctor Contact Duration on Early Peritoneal Dialysis-Related Infections

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Peritoneal dialysis (PD)-related infections are a major complication in patients undergoing PD, often leading to increased morbidity, hospitalization, and, in some cases, transition to hemodialysis [1, 2]. Although non-modifiable factors such as sex, obesity, and comorbidities have been linked to infection risk [3], there has been little research on modifiable factors, such as the duration of patient–doctor contact (PDC).

Given the importance of medical supervision and education during chronic disease management [4–6], it is reasonable to hypothesize that longer PDC duration may enhance patient education, reinforce adherence to aseptic techniques, and facilitate early detection of complications. This study aimed to investigate the association between the duration of PDC and early PD-related infections, including peritonitis and catheter-related infections, in patients initiating PD using prospective cohort data from the Peritoneal Dialysis Outcomes and Practice Patterns Study (PDOPPS) Korea. South Korea joined the PDOPPS to better understand PD treatment practice and their implications for patient outcomes. PDOPPS Korea includes patient data from 20 randomly selected PD centers nationwide [7].

The study analyzed data obtained from 276 incident PD patients between 2020 and 2021, and the patients were classified into two groups based on PDC duration: less than 15 min (shorter PDC group, n = 184) and more than 15 min (longer PDC group, n = 92) [8]. The primary objective of this classification was to evaluate the impact of PDC duration on the risk of PD-related infections, including peritonitis and catheter-related infections, within the first 3 and 12 months of PD initiation.

The incidence of PD-related infections at 3 months was significantly lower in the longer PDC group compared to the shorter PDC group (1.1% vs. 9.8%, *P* = 0.007). Similarly, at 12 months, the infection rate remained lower in the longer PDC group (9.8% vs. 23.4%, *P* = 0.007). The incidence rate was significantly lower (0.12 episodes/patient-year, *P* = 0.010) in the longer PDC group compared to 0.34 episodes/patient-year in the shorter PDC group.

Kaplan–Meier survival analysis demonstrated significantly higher PD-related infection-free survival rates in the longer PDC group compared to the shorter PDC group at both 3 and 12 months (log-rank *P* = 0.008 and 0.007, respectively; Figure 1). The longer PDC group was independently associated with a lower risk of PD-related infections at 3 and 12 months (3 months: adjusted hazard ratio [aHR], 0.11; 95% confidence interval [CI], 0.02–0.85, *P* = 0.034; 12 months: aHR, 0.43; 95% CI, 0.19–0.99, *P* = 0.048; Table 1). Subgroup analysis further revealed a significant protective effect of longer PDC duration in younger patients, those with diabetes, males, and individuals with lower education levels.

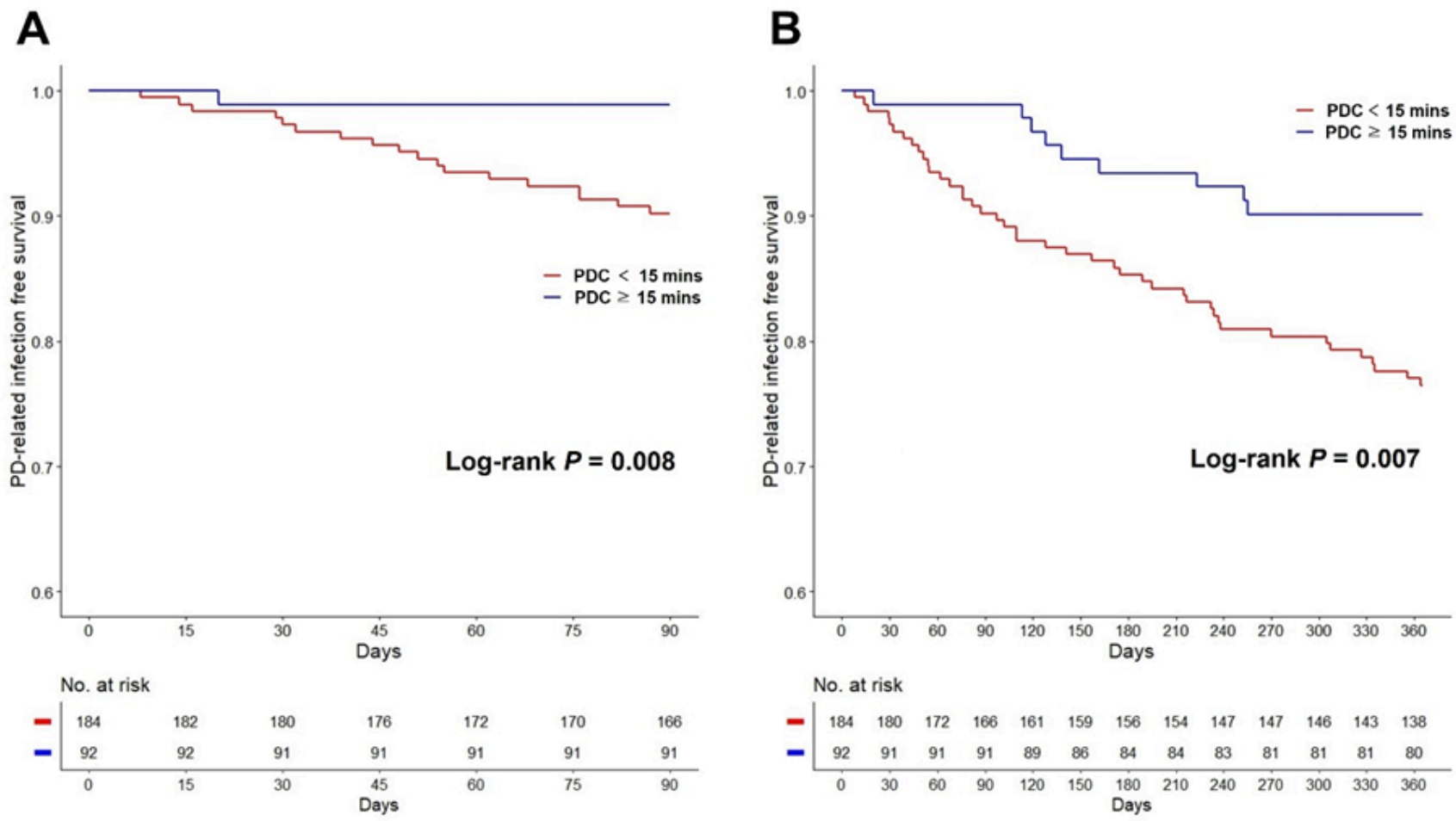

Figure 1. Kaplan–Meier curves for early PD-related infections. (A) PD-related infection-free survival within 3 months. (B) PD-related infection-free survival within 12 months.

Table 1. Cox regression analysis of early PD-related infections within 3 months and 12 months.

Variables	Model 1		Model 2		Model 3	
	HR (95% CI)	*P*	aHR (95% CI)	*P*	aHR (95% CI)	*P*
PD-related infections within 3 months						
PDC ≥15 min	0.11 (0.01–0.80)	0.030	0.11 (0.02–0.85)	0.034	0.10 (0.01–0.78)	0.029
PD-related infections within 12 months						
PDC ≥15 min	0.39 (0.19–0.79)	0.010	0.41 (0.20–0.84)	0.015	0.43 (0.19–0.99)	0.048

Model 1: Unadjusted.

Model 2: Adjusted for age, sex, underlying diabetes mellitus, and congestive heart failure.

Model 3: Adjusted for model 2 plus PD nurse advice after working hours, average duration during a training session, and total training time.
Abbreviations: PD, peritoneal dialysis; HR, hazard ratio; CI, confidence interval; aHR, adjusted hazard ratio; PDC, patient–doctor contact.

Gram-positive bacteria were the most common causative strains in most PD-related infections. Notably, the incidence of Gram-positive peritonitis was significantly higher in the short PDC group compared to the longer PDC

group (47.9% vs. 10.0%, *P* = 0.027). This finding suggests a potential association between a shorter PDC and an increased risk of touch contamination that may occur in the early stages of PD.

Our results consistently show that longer PDC duration was associated with a reduced risk of early PD-related infections among patients initiating PD. Longer PDC duration may allow for more comprehensive patient education, improved adherence to aseptic techniques, and timely identification of complications. In addition, longer consultations provide an opportunity to assess and address patient concerns, thereby strengthening infection prevention measures.

These findings underscore the importance of adequate PDC duration during outpatient PD care. Nephrologists should strive to provide sufficient time for patient counseling, particularly in the early stages of PD. Policy and reimbursement changes that encourage longer PDC duration may lead to improved patient outcomes and reduced healthcare costs by preventing avoidable infections.

Limitations of this study include its observational design, which limits causal inference. Additionally, we calculated PDC duration using the PDOPPS Unit Practices Survey data from each facility, so it reflects the facility's overall PDC duration rather than each patient's individual experience. In addition, variations in individual physician practice styles and patient adherence may have influenced the results. Further randomized controlled trials are needed to validate these findings and establish optimal PDC duration guidelines.

The present study provides evidence that longer PDC duration is associated with a reduced risk of early PD-related infections. Optimizing consultation times is recommended for nephrologists to enhance patient education and adherence, with the ultimate goal of improving PD outcomes. Future research should investigate the cost-effectiveness of extending PDC duration to develop standardized guidelines to optimize patient care.

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Life Participation in patients with Chronic Kidney Disease

Cameron Burnett, Anastasia Hughes, Allison Jaure (nee Tong), Yeoungjee Cho and Angela Ju on behalf of the SONG Life Participation Expert Working Groups

We would like to invite patients with chronic kidney disease to participate the SONG Life Participation (LP) validation survey. The Standardised Outcomes in Nephrology (SONG) Initiative aims to establish core outcomes to be measure in all trials in chronic kidney disease. Life participation has been identified by patients, caregivers and health professionals as a critical outcome of importance. Life participation refers to the ability to participate in activities that are meaningful and important to patients. We aim to assess life participation in a way that is meaningful to patients with CKD, their families and health professionals. To do this we have created the SONG LP measure.

Patients can participate in the study if they:

- have chronic kidney disease not yet requiring kidney replacement therapy (and have not received a transplant);

- are currently receiving dialysis (haemodialysis or peritoneal dialysis).

Participants will be asked to complete an online questionnaire with brief questions about yourself, and meaningful activities. The survey will be completed at three time points (baseline [15 minutes to complete], one-week [2 minutes to complete], and 12- months [10 minutes to complete]).

If they would like to participate, they just need to click the link / QR code (attached flyer) to complete the consent from. They will then be sent the first questionnaire. https://redcap.sydney.edu.au/surveys/?s=P7YP73FKTDFFN7AR

SONG
STANDARDISED OUTCOMES IN NEPHROLOGY

Life participation in patients with chronic kidney disease

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Link: https://redcap.sydney.edu.au/surveys/?s=P7YP73FKTDFFN7AR
If you have any questions please email Anastasia at anastasia.hughes@sydney.edu.au

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