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دوازدهمین سمینار سراسری  
انجمن علمی نفرولوژی ایران  
**کلیه در شرایط کریتیکال**

۱۸ تا ۲۰ مهر ۱۴۰۳

دانشگاه علوم پزشکی و خدمات بهداشتی درمانی زنجان  
مرکز همایش‌های بین‌المللی روزبه

# PD in AKI

**Iraj Najafi MD.**

Ghazvin Mehr 1403

Iranian Society of Nephrology congress

# PD in AKI

- Peritoneal dialysis has been utilized for acute kidney injury for almost 80 years but has fluctuated in use.
- Misconceptions about the efficacy of peritoneal dialysis persist among clinicians and the general public.
- There is significant evidence that supports the effectiveness of acute peritoneal dialysis in treating kidney injury.



JAMA. 1959;170(8):917-924

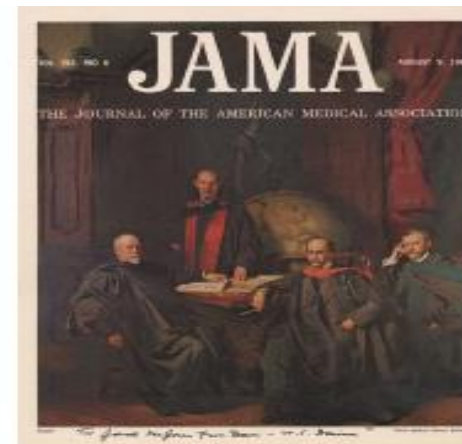
## PERITONEAL DIALYSIS

### 1. TECHNIQUE AND APPLICATIONS

1. Morton H. Maxwell, M.D.;
2. Robert E. Rockney, M.D.;
3. Charles R. Kleeman, M.D.;
4. Mary R. Twiss, R.N.

#### Author Affiliations

1. Los Angeles
2. From the Department of Medicine, University of California at Los Angeles, and Wadsworth Hospital, Veterans Administration Center.



## PD ... the modality first used for the treatment of AKI

... eliminated by a new technique of intermittent dialysis utilizing commercially prepared electrolyte solutions, special catheters, and a "closed system" of infusion and drainage. This was mechanically successful in 76 instances. Conditions treated satisfactorily included acute renal failure, barbiturate poisoning, intractable edema, hepatic coma, hypercalcemia, and chronic uremia. Although less efficient than the artificial kidney on an hourly basis, peritoneal lavage is easier to use over extended periods of time.

# PD in AKI

- In the past 10 years there has been a **resurgence** in the use of acute PD globally,
- PD for AKI in lower resource countries by nephrology organizations through the saving **Young Lives program** and in developed countries by **saving ICU admitted AKI patient** in Covid 19 pandemic.

# What Nephrologist do is not that they think!!!

In a 2018 survey by Ronco et al...

**35%** of the Nephrologist felt that PD was a suitable modality for AKI patients , but only **5%** were actually using the modality!!!!

# PD in AKI

- **Despite comparable outcomes** with the extracorporeal dialysis modalities.
- Peritoneal dialysis (PD) was **seldom considered** a viable option for managing acute kidney injury (AKI) in developed and **resource-rich countries**, where continuous renal replacement therapies (**CRRTs**) are the mainstay of treating AKI.

**George J, Varma S, Kumar S, Thomas J, Gopi S, Pisharody R. Comparing continuous venovenous hemodiafiltration and peritoneal dialysis in critically ill patients with acute kidney injury: a pilot study. Perit Dial Int. 2011;31(4):422–9.**

**PD cost : Access, fluids, equipment and personnel  
US\$ 100 to 200 per day.**

**CRRT access, fluids, equipment and trained personnel  
is higher US\$ 400 to 800 per day.**





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# Urgent Start PD

Iraj Najafi MD

Kish Nephrology Urology congress

۱۶ آذر ۱۳۹۶

# PD in AKI & Urgent start PD

- In the last decade, there has been a growing interest in urgent-start PD for late-presenting ESRD patients starting dialysis immediately after PD catheter insertions.
- Favorable outcomes suggest that PD can be a viable option in more urgent situations

# Urgent Start PD

BUN 120  
Cr 14

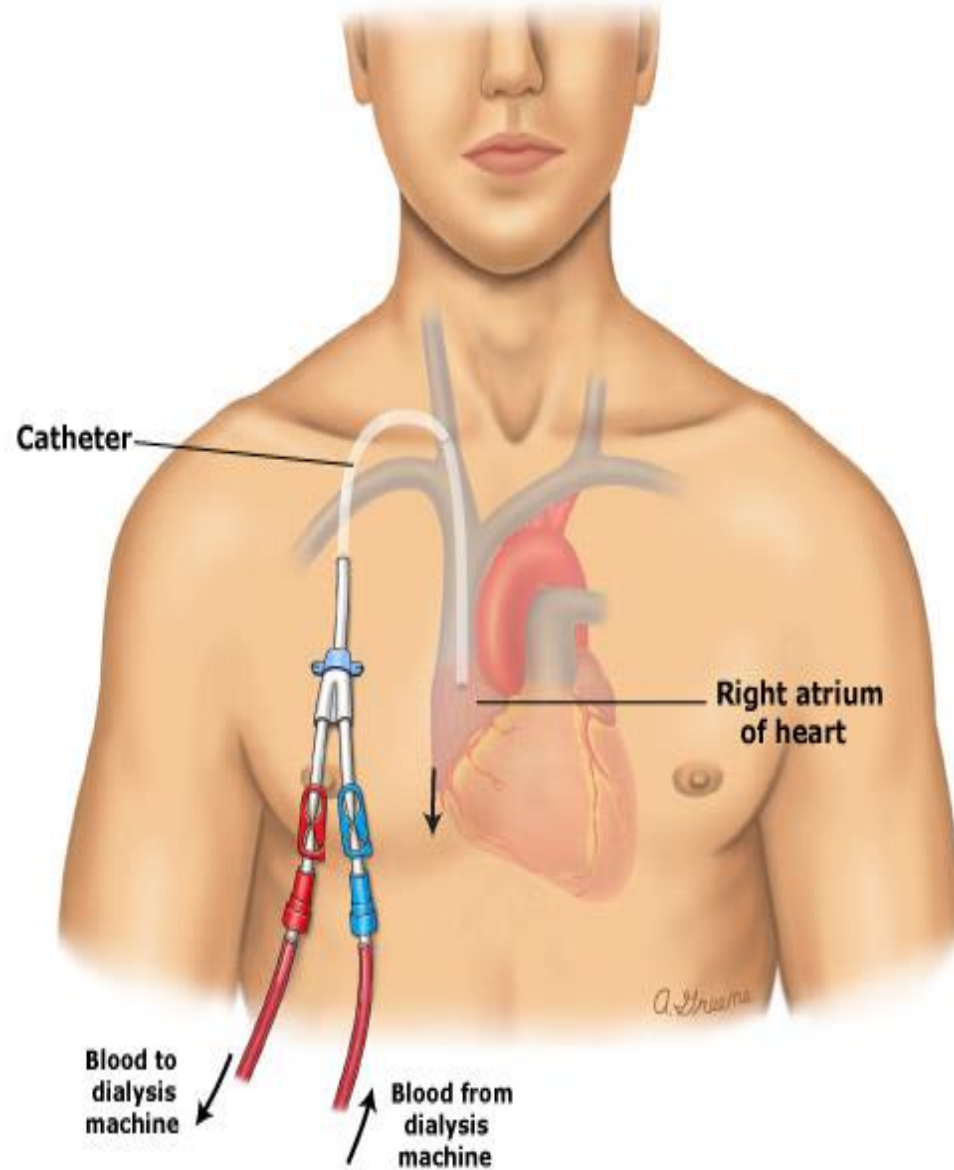


Urgent PD catheter placement



Femoral Catheter  
IJ temporary or tunneled catheter  
Urgent HD

## Urgent start HD



But when this came to market PD lost its patients and loose the game to HD



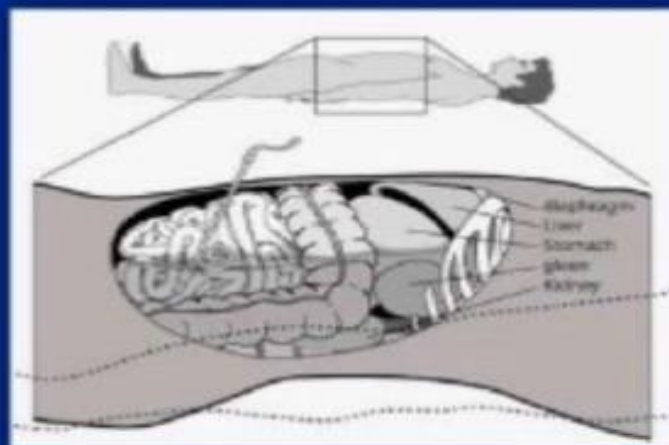
# Urgent Start PD

BUN 120  
Cr 14

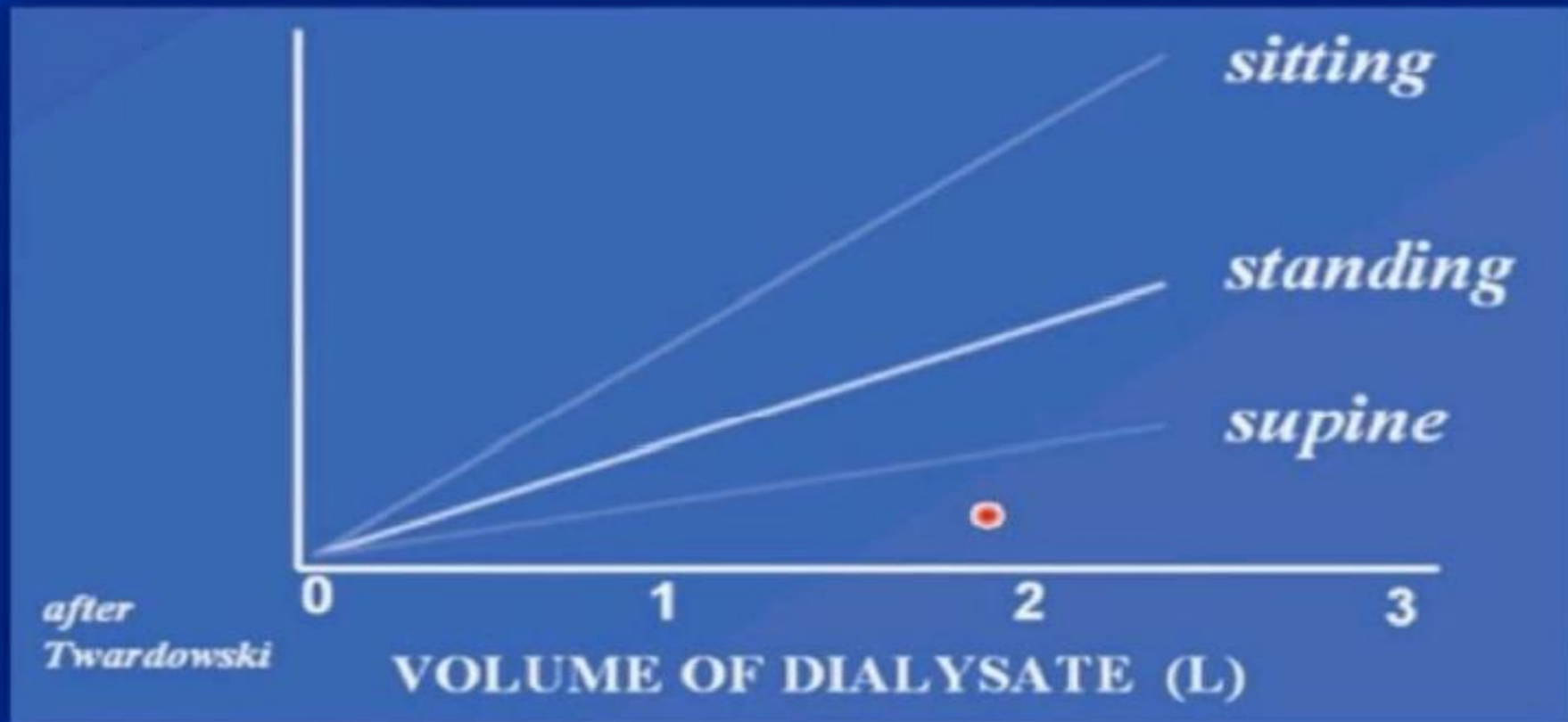
Femoral Catheter  
IJ temporary or tunneled catheter  
Urgent HD

Hospitalized- low volume, recumbent PD  
Outpatient- low volume, recumbent PD

Urgent interventional  
or surgical PD catheter



# Intra-abdominal pressure (in mm Hg) increases with volume and position







## UNPLANNED START ON PERITONEAL DIALYSIS RIGHT AFTER PD CATHETER IMPLANTATION FOR OLDER PEOPLE WITH END-STAGE RENAL DISEASE

Johan V. Povlsen, Anette Bagger Sørensen, and Per Ivarsen

*Dept. Renal Medicine C, Aarhus University Hospital, Aarhus, Denmark*

Unplanned start on dialysis remains a major problem for the dialysis community worldwide. Late-referred patients with end-stage renal disease (ESRD) and urgent need for dialysis are overrepresented among older people. These patients are particularly likely to be started on in-center hemodialysis (HD), with a temporary vascular access known to be associated with excess mortality and increased risks of potentially lethal complications such as bacteremia and central venous thrombosis or stenosis.

implantation for PD) (1). In the US, more than 80% of patients who starts HD start with a CVC (2). Late-referred patients with urgent need for dialysis, often referred to as “parachute” or “crashlanders,” are overrepresented among the older end-stage renal disease (ESRD) population and are particularly likely to be started on HD with a temporary CVC. Unplanned start on HD is associated with excess mortality, an increased risk of infectious (e.g. bacteremia) or mechanical (e.g. central

❖ It can be accomplished with no increased risk to patients with short-term outcomes similar to, if not better than urgent in-center HD

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# Does Acute PD Require a Particular Catheter Insertion Technique?

- Percutaneous PD catheter insertions, blind have compared favorably with surgical and laparoscopic procedures in different studies.
- Are minimally invasive, can be inserted at bedside relatively quickly under local anesthesia, and are often considered the better option for acute PD.

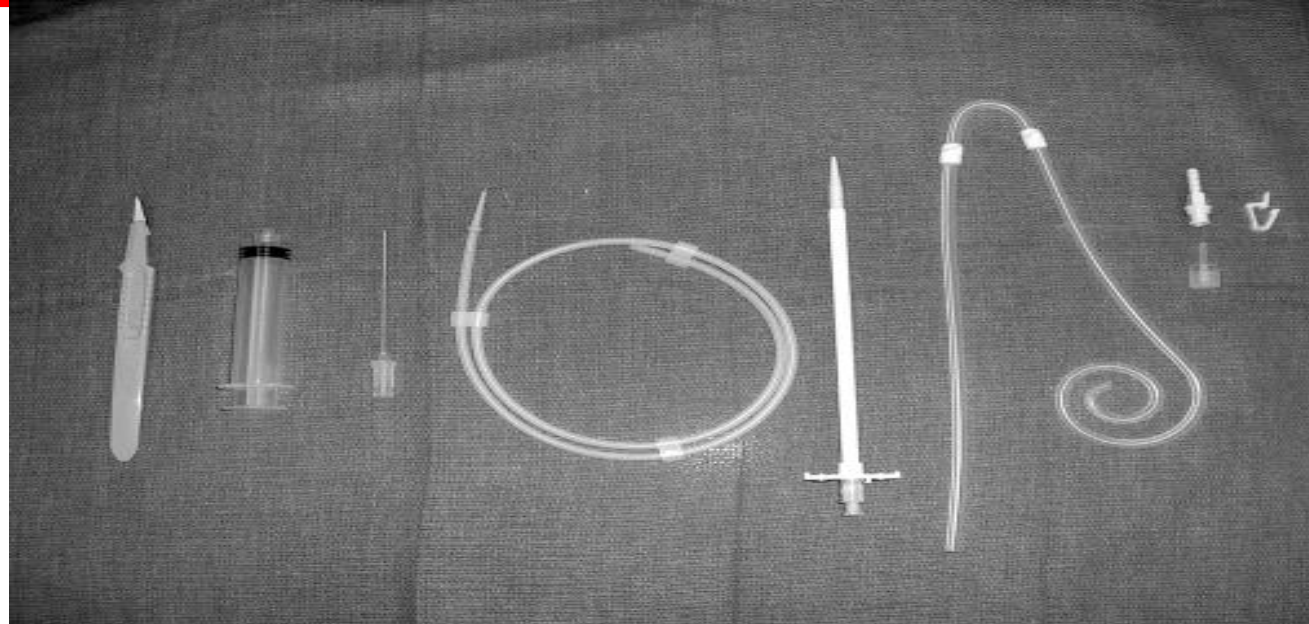
# Does Acute PD Require a Particular Catheter Insertion Technique?

- The Seldinger technique involves the introduction of a soft guidewire into the peritoneal cavity through a needle. A dilator including a peel away sheath is then inserted, through which the PD catheter is placed.
- Insertion by a nephrologist also keeps the process under the control of the clinical team that is directly involved in the patient's care, and this may result in higher rates of PD utilization

# Using not a rigid instrument



Contents of the Quinton insertion kit: #11 scalpel, 10-cc syringe, 18-gauge introducer needle and 10-cc syringe, J/straight guidewire, 16-French **Pull-Apart introducer**, Swan neck curl cath, double-cuffed PD catheter, beta-cap adapter, cap, clamp



Pull Apart Kit could help us to **bed side** emplacement  
Of catheter without general anesthesia



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Peritoneal Dialysis 

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[Perit Dial Int.](#) 2016 Nov-Dec; 36(6): 589–591.

PMCID: PMC5174865

doi: [10.3747/pdi.2016.00091](https://doi.org/10.3747/pdi.2016.00091)

PMID: [27903850](https://pubmed.ncbi.nlm.nih.gov/27903850/)

## Nurse-Performed Local-Anesthetic Insertions of PD Catheters: One Unit's Experience

[Elaine Bowes](#),\* [Bhezad Ansari](#), and [Hugh Cairns](#)

▶ [Author information](#) ▶ [Copyright and License information](#) [PMC Disclaimer](#)

Department of Renal Medicine, King's College Hospital, London, UK

\* email: [elaine.bowes@nhs.net](mailto:elaine.bowes@nhs.net)

## Advantages and disadvantages of Acute PD [5].

<b>Advantages</b>	<b>Disadvantages</b>
Technically simple	Contraindicated in recent abdominal surgery
Less infrastructure	Requires intact peritoneal cavity
Cost effective	May not be effective in severe acute pulmonary edema/hyperkalemia
Avoids vascular access	Peritonitis can occur
Biocompatible	Clearance and ultrafiltration unpredictable
Continuous renal replacement therapy	Concerns for hyperglycemia
Hemodynamic stability	Concerns for impaired respiratory mechanics
Gradual solute removal	Concerns for protein loss

# COSTS in Developing countries

PD cost : fluid (US\$24 to 27) + catheter (Stylet- US\$6.6 or Tenckhoff—US\$30) total 30 to 60 US\$ AND thereafter about 30 US\$ per day

CRRT access, fluids, equipment and trained personnel is higher US\$400 to 800 per day.

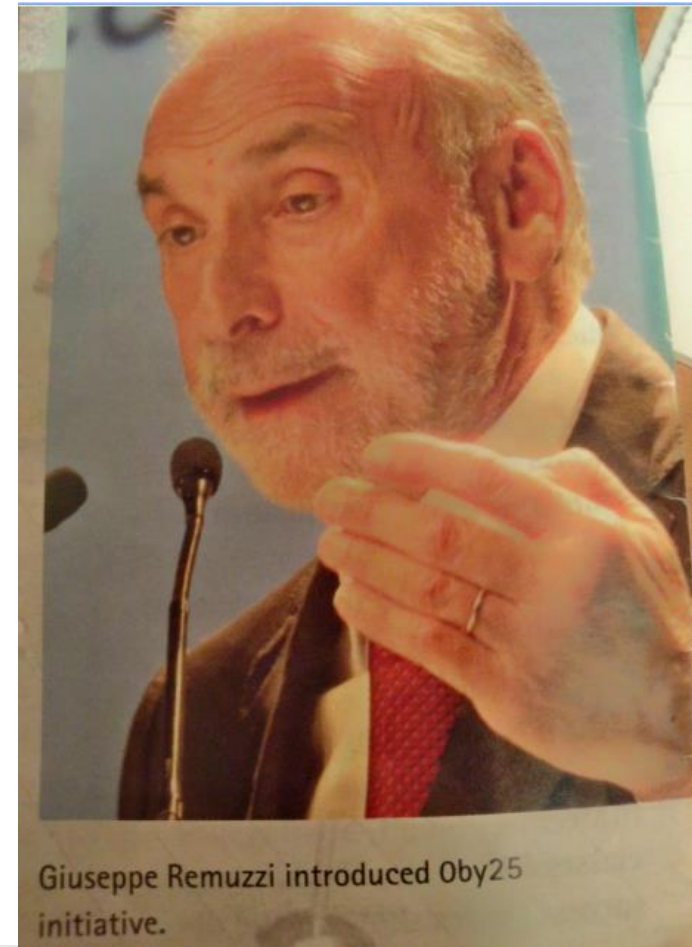
**intermittent HD** around US\$104, with access US\$66.

# We may not be there yet, but we are closer than we were yesterday

- Delivering his talk in WCN<sub>2015</sub> regarding Oby25 initiative



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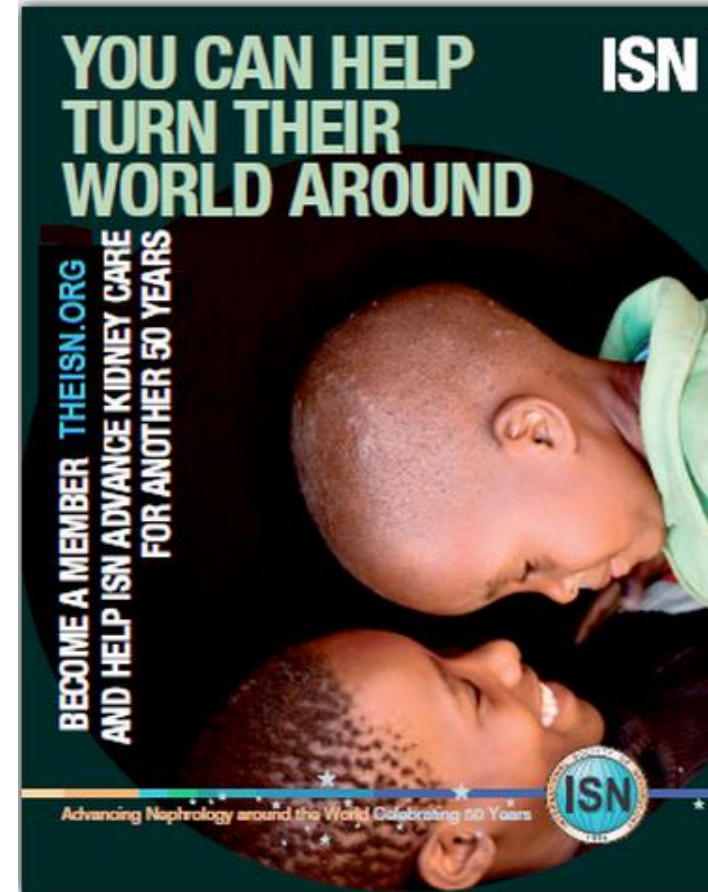
# Giuseppe Remuzzi, M.D. (2013)

- "During my presidency I also wish to put the focus especially on acute kidney injury (AKI) in poor and developing countries.
- The challenges posed by AKI in high-income countries are different from those posed in low-income countries.



# We may not be there yet, but we are closer than we were yesterday

- He continues: "ISN may advocate a human right case statement that 0 people should die of untreated acute kidney injury in the poorest parts of Africa, Asia and South America by 2025



# Oby25-an ISN human rights initiative

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# 0 by 25

## Zero preventable deaths from AKI by 2025



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Help ISN do more

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Advancing Nephrology Around the World



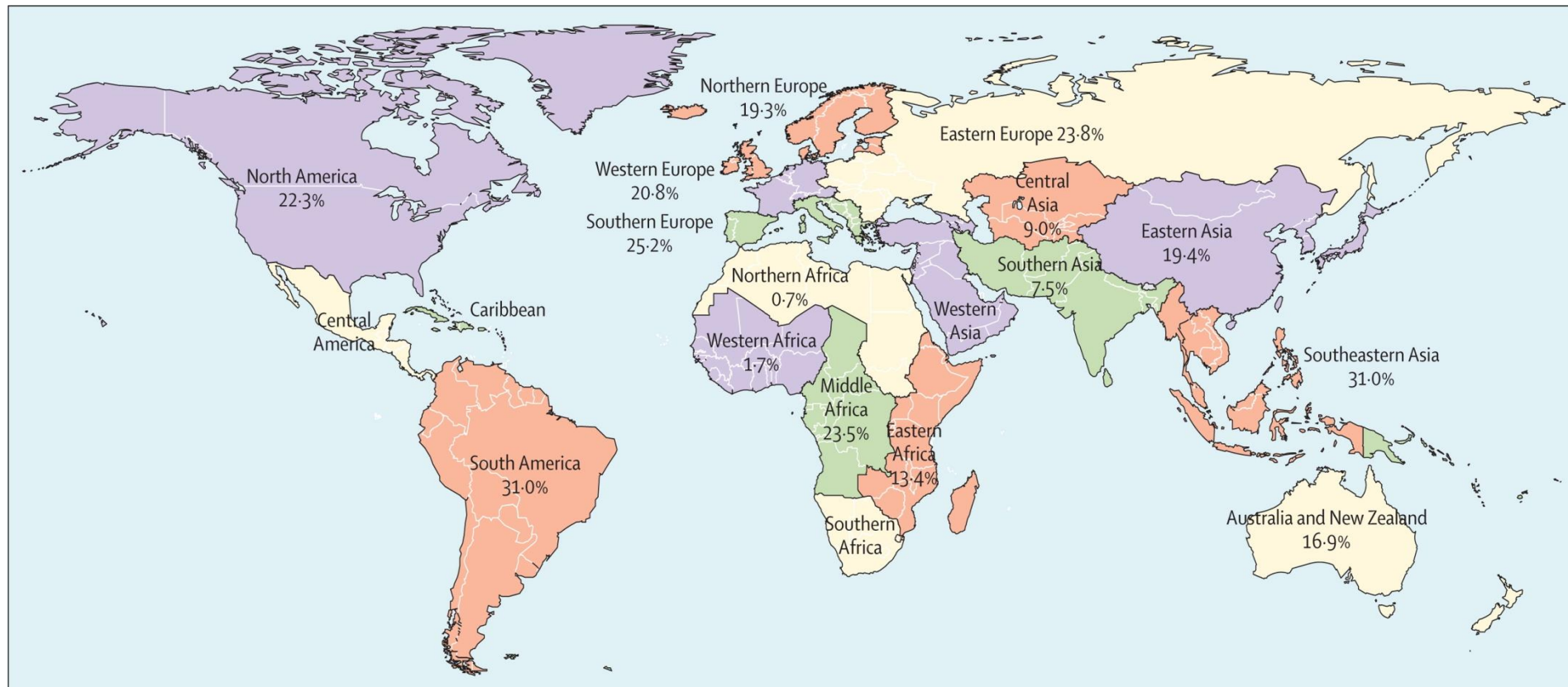
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# Pooled incidence of acute kidney injury (AKI) from our meta-analysis



*The Lancet* 2015 385, 2616-2643 DOI: (10.1016/S0140-6736(15)60126-X)

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THE LANCET



## International Society of Nephrology's 0by25 initiative for acute kidney injury (zero preventable deaths by 2025): a human rights case for nephrology

Ravindra L Mehta\*, Jorge Cerdá\*, Emmanuel A Burdmann\*, Marcello Tonelli\*, Guillermo García-García, Vivekanand Jha, Paweena Susantitaphong, Michael Rocco, Raymond Vanholder, Mehmet Sukru Sever, Dinna Cruz, Bertrand Jaber, Norbert H Lameire, Raúl Lombardi, Andrew Lewington, John Feehally, Fredrik Finkelstein, Nathan Levin, Neesh Pannu, Bernadette Thomas, Elijah Aronoff-Spencer, Giuseppe Remuzzi

Lancet 2015; 385: 2616-43

Published Online

March 13, 2015

[http://dx.doi.org/10.1016/S0140-6736\(15\)60226-X](http://dx.doi.org/10.1016/S0140-6736(15)60226-X)

See Comment page 2551

Joint first authors

### Executive summary

Acute kidney injury (AKI) is a major contributor to poor patient outcomes. AKI occurs in about 13.3 million people per year, 85% of whom live in the developing world, and, although no direct link between AKI and death has yet been shown, AKI is thought to contribute

Disease: Improving Global Outcomes) definitions, which confirms the high incidence and resulting outcomes of AKI, particularly in Africa, Asia, and Latin America, for which data were previously absent. The strong relation between the severity of AKI and consequent mortality is reiterated by our findings and is evident across



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# Saving Young Lives in Africa and Asia



Saving Young Lives is a collaborative project that is developing sustainable programs for treating acute kidney injury (AKI) in sub-Saharan Africa and South East Asia.



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## Advantages and disadvantages of Acute PD [5].

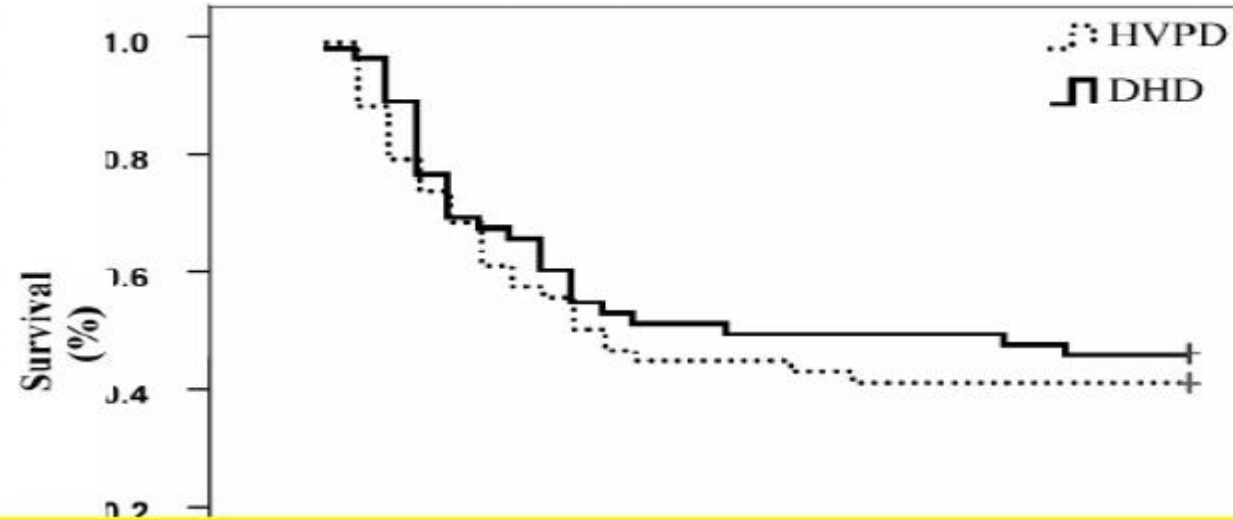
<b>Advantages</b>	<b>Disadvantages</b>
Technically simple	Contraindicated in recent abdominal surgery
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Biocompatible	Clearance and ultrafiltration unpredictable
Continuous renal replacement therapy	Concerns for hyperglycemia
Hemodynamic stability	Concerns for impaired respiratory mechanics
Gradual solute removal	Concerns for protein loss



## CONTINUOUS PERITONEAL DIALYSIS COMPARED WITH DAILY HEMODIALYSIS IN PATIENTS WITH ACUTE KIDNEY INJURY

Daniela Ponce Gabriel, Jacqueline Teixeira Caramori, Luis Cuadrado Martin, Pasqual Barretti, and Andre Luis Balbi

Department of Internal Medicine. University Hospital. Botucatu School of



### Conclusion:

- High doses of CPD provided appropriate metabolic and pH control, with a rate of survival & recovery of renal function similar to that seen with dHD.
- CPD can be considered an alternative to other forms of RRT in AKI.

Gabriel D et al, *Perit Dial Int* 2007

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**Peritoneal Dialysis**  
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## Randomised controlled trials comparing PD and extracorporeal therapies

	<b>Phu, 2002</b>	<b>Gabriel, 2008</b>	<b>George, 2011</b>	<b>Ponce, 2013</b>	<b>Al- Hwiesh, 2018</b>
Comparison	PD versus CVVH	High-volume PD versus daily HD	PD versus CVVHDF	High-volume PD versus daily extended HD	Tidal PD versus CVVHDF
Total number	36 versus 34	60 versus 60	25 versus 25	61 versus 82	63 versus 62
Catheter type	Rigid	Flexible	Rigid	Flexible	Flexible
Mechanical ventilation	NA	68% versus 75%	60% versus	83% versus 87%	62% versus

## Randomised controlled trials comparing PD and extracorporeal therapies

APACHE II score	NA	26.9 versus 24.1	17.7 versus 18.4	27.5 versus 26.7	22.1 versus 21.3
Delivered Kt/V, weekly	NA	3.6 versus 4.7	NA	3.6 versus 4.1	NA
Ultrafiltration, L/day	NA	2.1 versus 2.4	2.8 versus 2.9	1.44 versus 2.4	0.95 versus 1.4
Mortality (%)	47% versus 15%	58 versus 53	72 versus 84	63.9 versus 63.4	30.2 versus 53.2
Renal recovery, %	NA	83 versus 77	NA	93.5 versus 90.3	60.3 versus 35.5
Renal recovery	NA	7.2 versus	NA	9 versus 11	5 versus 8



## PERITONEAL DIALYSIS IN ACUTE KIDNEY INJURY: BRAZILIAN EXPERIENCE

Peritoneal dialysis (PD) was the first modality of renal replacement therapy (RRT) successfully used for patients with acute kidney injury (AKI) (1). In 1970, acute PD was widely accepted for AKI treatment, but its practice progressively declined in favor of hemodialysis techniques until, currently, PD is underutilized for AKI around the world (2–4). Recently, Brazilian experiences with PD in AKI have been published, and interest in using PD to manage selected AKI patients has been increasing.

Here, we review recent literature and studies of PD for the treatment of AKI patients performed at the Botucatu School of Medicine, Sao Paulo State University, Brazil.

significant complications. The main limitations of the study were its single-center nature, its small number of patients, and its lack of a control group.

### PD COMPARED WITH HEMODIALYSIS FOR AKI PATIENTS

Our group also performed a randomized trial in 120 AKI patients comparing HVPD (60 patients) with daily intermittent hemodialysis [dHD (60 patients)] for efficacy and security (6). The HVPD technique was performed as previously described (5), and the dHD technique was performed using a double-lumen central venous catheter



[Clin J Am Soc Nephrol](#). 2013 Oct 7; 8(10): 1649–1660.

PMCID: PMC3789336

Published online 2013 Jul 5. doi: [10.2215/CJN.01540213](https://doi.org/10.2215/CJN.01540213)

PMID: [23833316](https://pubmed.ncbi.nlm.nih.gov/23833316/)

# Use of Peritoneal Dialysis in AKI: A Systematic Review

[Chang Yin Chionh](#),<sup>\*†</sup> [Sachin S. Soni](#),<sup>\*‡</sup> [Fredric O. Finkelstein](#),<sup>§</sup> [Claudio Ronco](#),<sup>\*||</sup> and  
[Dinna N. Cruz](#)<sup>¶</sup>

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# Use of Peritoneal Dialysis in AKI: A Systematic Review

Chang Yin Chionh,<sup>\*†</sup> Sachin S. Soni,<sup>\*‡</sup> Fredric O. Finkelstein,<sup>§</sup> Claudio Ronco,<sup>\*||</sup> and Dinna N. Cruz<sup>||†</sup>

## Summary

**Background and objectives** The role of peritoneal dialysis in the management of AKI is not well defined, although it remains frequently used, especially in low-resource settings. A systematic review was performed to describe outcomes in AKI treated with peritoneal dialysis and compare peritoneal dialysis with extracorporeal blood purification, such as continuous or intermittent hemodialysis.

**Design, setting, participants, & measurements** MEDLINE, CINAHL, and Central Register of Controlled Trials were searched in July of 2012. Eligible studies selected were observational cohort or randomized adult population studies on peritoneal dialysis in the setting of AKI. The primary outcome of interest was all-cause mortality. Summary estimates of odds ratio were obtained using a random effects model.

**Results** Of 982 citations, 24 studies ( $n=1556$  patients) were identified. The overall methodological quality was low. Thirteen studies described patients ( $n=597$ ) treated with peritoneal dialysis only; pooled mortality was 39.3%. In 11 studies (7 cohort studies and 4 randomized trials), patients received peritoneal dialysis ( $n=392$ , pooled mortality=58.0%) or extracorporeal blood purification ( $n=567$ , pooled mortality=56.1%). In the cohort studies, there was no difference in mortality between peritoneal dialysis and extracorporeal blood purification (odds ratio, 0.96; 95% confidence interval, 0.53 to 1.71). In four randomized trials, there was also no difference in mortality (odds ratio, 1.50; 95% confidence interval, 0.46 to 4.86); however, heterogeneity was significant ( $I^2=73%$ ,  $P=0.03$ ).

**Conclusions** There is currently no evidence to suggest significant differences in mortality between peritoneal dialysis and extracorporeal blood purification in AKI. There is a need for good-quality evidence in this important area.

*Clin J Am Soc Nephrol* 8: 1649–1660, 2013. doi: 10.2215/CJN.01540213

\*Department of Nephrology, Dialysis and Transplantation, San Bortolo Hospital, Vicenza, Italy; †Division of Renal Medicine, Changi General Hospital, Singapore; ‡Manik Hospital and Research Centre, Aurangabad, India; §Hospital of St. Raphael, Yale University, New Haven, Connecticut; ||International Renal Research Institute Vicenza (IRRIV), Vicenza, Italy; and ††Division of Nephrology—Hypertension, Department of Medicine, University of California, San

Chionh CY, Soni SS, Finkelstein FO, Ronco C, Cruz DN.  
Use of peritoneal dialysis in AKI: a systematic review.  
*Clin J Am Soc Nephrol*. 2013;8(10):1649–60.

- A systematic review by Chionh et al. published in 2013, concluded that PD was similar to other extracorporeal therapies in AKI regarding mortality.

# ISPD GUIDELINES/RECOMMENDATIONS

## PERITONEAL DIALYSIS FOR ACUTE KIDNEY INJURY

Brett Cullis,<sup>1,2</sup> Mohamed Abdelraheem,<sup>3</sup> Georgi Abrahams,<sup>4</sup> Andre Balbi,<sup>5</sup> Dinna N. Cruz,<sup>6</sup>  
Yaacov Frishberg,<sup>7</sup> Vera Koch,<sup>8</sup> Mignon McCulloch,<sup>9</sup> Alp Numanoglu,<sup>10</sup> Peter Nourse,<sup>9</sup>  
Roberto Pecoits-Filho,<sup>11</sup> Daniela Ponce,<sup>5</sup> Bradley Warady,<sup>12</sup>  
Karen Yeates,<sup>13</sup> and Fredric O. Finkelstein<sup>14</sup>



Liu L, Zhang L, Liu GJ, Fu P. Peritoneal dialysis for acute kidney injury.

*Cochrane Database Syst Rev.* 2017;12(12):CD011457.

- A subsequent Cochrane review reported similar conclusions. PD and extracorporeal treatments were considered equivalent regarding all-cause mortality and renal function recovery.



[Cochrane Database Syst Rev.](#) 2017 Dec; 2017(12): CD011457.

PMCID: PMC6486317

Published online 2017 Dec 4.

PMID: [29199769](#)

doi: [10.1002/14651858.CD011457.pub2](#)

## Peritoneal dialysis for acute kidney injury

Monitoring Editor: [Linfeng Liu](#), [Ling Zhang](#),<sup>✉</sup> [Guan J Liu](#), [Ping Fu](#), and Cochrane Kidney and Transplant Group

West China Hospital, Sichuan University, Department of Nephrology, No. 37, Guo Xue Xiang, Chengdu Sichuan China, 610041

West China Hospital, Sichuan University, Cochrane China, No. 37, Guo Xue Xiang,

# ISPD guidelines for peritoneal dialysis in acute kidney injury: 2020 update (adults)

[Brett Cullis](#)  , [Abdullah Al-Hwiesh](#) , [Kajiru Kilonzo](#), [Mignon McCulloch](#) , [Abdou Niang](#), [Peter Nourse](#) , [Watany Parapiboon](#) , [Daniela Ponce](#) , and [Fredric O Finkelstein](#)   [View all authors and affiliations](#)

[Volume 41, Issue 1](#) | <https://doi.org/10.1177/0896860820970834>

# PD in AKI

- During the **COVID-19 pandemic**, the developed world was confronted with a sudden surge of 50% in critically ill AKI patients and 30% need of renal replacement therapy.
- There were acute **shortages of CRRT** machines and the trained staff to deliver those treatments.
- Centers with established **urgent-start chronic dialysis** programs and **percutaneous PD catheter** insertion facilities and protocols were better positioned to start and deliver PD in ICU.



# What Can We Learn from the COVID-19 Pandemic?

- **The major challenges identified from that experience are as follows:**
  - The timely PD bedside catheter insertions.
  - Lack of trained nursing staff to provide acute PD in the ICU.
  - Lack of experience with acute PD prescriptions.

[Kidney Int Rep.](#) 2020 Sep; 5(9): 1532–1534.

PMCID: PMC7377796

Published online 2020 Jul 23. doi: [10.1016/j.ekir.2020.07.017](https://doi.org/10.1016/j.ekir.2020.07.017)

PMID: [32838084](https://pubmed.ncbi.nlm.nih.gov/32838084/)

# Peritoneal Dialysis for Acute Kidney Injury During the COVID-19 Pandemic in New York City

[Divya Shankaranarayanan](#),<sup>1</sup> [Sanjay P. Neupane](#),<sup>1</sup> [Elly Varma](#),<sup>1</sup> [Daniil Shimonov](#),<sup>1</sup>  
[Supriya Gerardine](#),<sup>1</sup> [Aarti Bhasin](#),<sup>1</sup> [Perola Lamba](#),<sup>1</sup> [Lorenz Leuprecht](#),<sup>1</sup> [Thalia Salinas](#),<sup>1</sup>  
[Cheguevara Afaneh](#),<sup>2</sup> [Omar E. Bellorin-Marin](#),<sup>2</sup> and [Vesh Srivatana](#)<sup>1,3,\*</sup>

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Meta-Analysis

> J Crit Care. 2021 Aug;64:82-90. doi: 10.1016/j.jcrc.2021.03.011.

Epub 2021 Mar 25.

# Renal replacement therapy modality in critically ill patients with acute kidney injury – A network meta-analysis of randomized controlled trials

Xiaoyang Zhou <sup>1</sup>, Pingping Dong <sup>2</sup>, Jianneng Pan <sup>1</sup>, Hua Wang <sup>1</sup>, Zhaojun Xu <sup>1</sup>, Bixin Chen <sup>3</sup>

Affiliations + expand

PMID: 33836397 DOI: 10.1016/j.jcrc.2021.03.011

## Abstract

**Purpose:** This network meta-analysis aims to compare the efficacy and safety of various renal replacement therapy (RRT) modalities in critically ill patients with acute kidney injury (AKI).

Zhou X,... Renal replacement therapy modality in critically ill patients with acute kidney injury:  
A network meta-analysis of randomized controlled trials.  
*J Crit Care.* 2021;64:82–90.

- This meta-analysis concluded no particular dialysis modality, including PD, was superior regarding short-term mortality and renal recovery in critically ill patients with AKI.



[J Clin Med.](#) 2022 Jun; 11(12): 3270.

PMCID: PMC9225088

Published online 2022 Jun 8. doi: [10.3390/jcm11123270](https://doi.org/10.3390/jcm11123270)

PMID: [35743341](https://pubmed.ncbi.nlm.nih.gov/35743341/)

# Peritoneal Dialysis as a Renal Replacement Therapy Modality for Patients with Acute Kidney Injury

[Sana Farooq Khan](#)

Emaad M. Abdel-Rahman, Academic Editor and Alaa S. Awad, Academic Editor

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Division of Nephrology, University of Virginia Health System, Charlottesville, VA 22908, USA;  
[sk4yp@virginia.edu](mailto:sk4yp@virginia.edu); Tel.: +1-434-924-5125

[Perit Dial Int. 2023 Jan; 43\(1\): 13–22.](#)

PMID: [36320182](#)

Published online 2022 Nov 1. doi: [10.1177/08968608221130559](#)

## Outcomes of PD for AKI treatment during COVID-19 in New York City: A multicenter study

[Maryanne Y Sourial](#),<sup>1,2</sup> [Anirudh Gone](#),<sup>2</sup> [Jaime Uribarri](#),<sup>3</sup> [Vesh Srivatana](#),<sup>4,5</sup> [Shuchita Sharma](#),<sup>3</sup>  
[Daniil Shimonov](#),<sup>4,5</sup> [Michael Chang](#),<sup>2</sup> [Wenzhu Mowrey](#),<sup>6</sup> [Rochelle Dalsan](#),<sup>1</sup> [Kaltrina Sedaliu](#),<sup>2</sup>  
[Swati Jain](#),<sup>2</sup> [Michael J Ross](#),<sup>1,2</sup> [Nina Caplin](#),<sup>7,8</sup> [Wei Chen](#),<sup>1,2,9</sup> and New York City Peritoneal  
Dialysis Consortium

Sourial MY, et al, Outcomes of PD for AKI treatment during COVID-19 in New York City: a multicenter study.  
*Perit Dial Int.* 2023;43(1):13–22.

- A retrospective, multicenter, observational study of 259 COVID-19-associated AKI patients in New York.
- There were fewer deaths in the PD group (43%) compared to the extracorporeal dialysis group (60%).
- Fully adjusted Cox regression analysis showed that the PD group had a significantly lower mortality risk (hazard ratio of 0.48; confidence interval 0.27–0.82;  $p$  0.008).

Review

> Clin Kidney J. 2022 Sep 11;16(2):210-217. doi: 10.1093/ckj/sfac201.

eCollection 2023 Feb.

# Peritoneal dialysis for acute kidney injury: back on the front-line

Brett Cullis <sup>1</sup> <sup>2</sup>

Affiliations + expand

PMID: 36755845    PMCID: [PMC9900590](#)    DOI: [10.1093/ckj/sfac201](#)



# What Is the Adequate Acute PD Prescription and Dialysis Dose?

- The updated ISPD guidelines have suggested that acute PD must be individualized according to the patient's needs, targeting a weekly Kt/V of 2.2–3.5.

# What Is the Adequate Acute PD Prescription and Dialysis Dose?

- During the COVID-19 pandemic, incremental PD prescriptions were used by some investigators.
- Starting with three 500 mL exchanges with a dwell time of 45–90 min. The fill volume was gradually increased to 2 L over 48 h. The fill volume was reduced to 1.5 L when the patient was put in a prone position and increased back to 2 L in a supine position. The total daily volume varied between 10 and 25 L.

[Blood Purif.](#) 2024 Jan; 53(2): 71–79.

PMCID: PMC10836743

Published online 2023 Nov 17. doi: [10.1159/000535243](https://doi.org/10.1159/000535243)

PMID: [37980897](https://pubmed.ncbi.nlm.nih.gov/37980897/)

# Is It Time to Give Peritoneal Dialysis Its Due Place in Managing Acute Kidney Injury: Lessons Learnt from COVID-19 Pandemic

[Muhammad M. Javaid](#),<sup>a, b, c</sup> [Adel Ekladius](#),<sup>d, e</sup> and [Behram A. Khan](#)<sup>f</sup>

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# Is It Time to Give Peritoneal Dialysis Its Due Place in Managing Acute Kidney Injury: Lessons Learnt from COVID-19 Pandemic

Muhammad M Javaid <sup>1 2 3</sup>, Adel Ekladius <sup>4 5</sup>, Behram A Khan <sup>6</sup>

Affiliations – collapse

## Affiliations

- 1 Monash Rural Health Mildura, Monash University, Melbourne, Victoria, Australia.
- 2 Department of Renal Medicine, Woodlands Health, Singapore, Singapore.
- 3 Clinical School, Deakin University, Melbourne, Victoria, Australia.
- 4 Department of Medicine and Acute Assessment Unit, Canberra Hospital, Garran, Australian Capital Territory, Australia.
- 5 Faculty of Health and Medical Science, University of Western Australia, Perth, Washington, Australia.
- 6 School of Medicine, National University of Singapore, Singapore, Singapore.



# Conclusions

- PD is a safe, viable, and effective treatment option for AKI.
- The experience from the COVID-19 pandemic showed that with a collaborative approach between intensivists, nephrologists, radiologists, and surgeons, acute PD programs could be developed in the majority of hospitals in developed countries.
- Acute PD can provide an alternative treatment option for patients with AKI and be helpful in times of crisis and resource-limited situations.

# Conclusions

- It also highlighted the need to review the current management strategies for AKI in developed countries and consider incorporating PD as a viable tool for suitable patients.
- This article, attempts to clarify some misconceptions about PD in AKI, and argues in favor of developing acute PD programs.

# متشكرم

انشاء الله موفق باشيد