Acute PD for AKI
Important Considerations

GNYHA Webinar - 4/24/2020

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Disclosures

- I am a full-time employee of Nephrology Care Alliance
- I am a part-time contracted employee of Cleveland Clinic
- My presentation and opinions are my own and do not represent the view or position of my employers, nor should they be treated as specific medical advice
- 2020 ISPD guideline updates referenced from ISN-ISPD Webinar 4/23/2020 and soon to be available at: https://academy.theisn.org.

Background

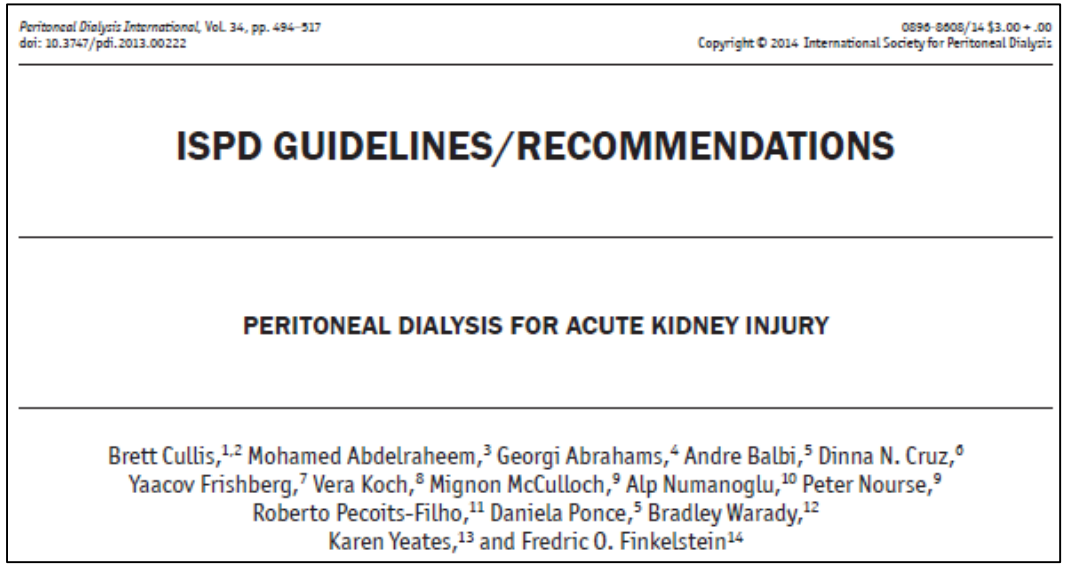
- PD should be considered a suitable method of treatment in AKI
- Advantages include minimal fixed infrastructure, lower cost, simplicity
- Clinical advantages are more gradual solute and fluid removal, lack of need for anticoagulation, and avoidance of BSI
- Little or no difference in mortality, though solute/fluid removal lower[1]
- Despite these theoretical advantages, acute PD for AKI has been mainly utilized in developing countries and low resource settings
- Switching costs in U.S. have been too high to promote acute PD use

Cochrane Database Syst Rev. 2017 Dec 4;12:CD011457.

Consideration #1:
Have clarity about what you are solving for

Shortage of HD/CRRT machines or supplies	What is your PD infrastructure?
Shortage of trained dialysis nurses	Who are your PD resources?
Shortages of PPE	Is a cycler-based approach feasible?
Specific patient care issues in Covid-19	Does PD address a unique need(s)?

Consideration #2: Standardize, then individualize



Peritoneal Dialysis International, Vol. 34, pp. 494–517
doi: 10.3747/pdi.2013.00222

0896-8608/14 $3.00+.00

ISPD GUIDELINES/RECOMMENDATIONS

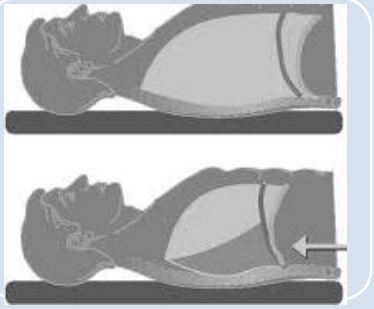
PERITONEAL DIALYSIS FOR ACUTE KIDNEY INJURY

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

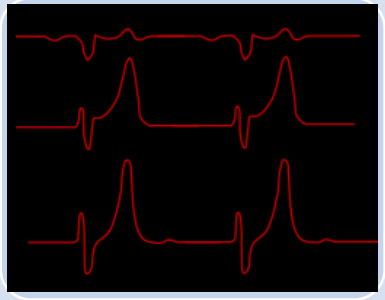
https://ispd.org/ispd-guidelines/

- Utilize ISPD guidelines for PD catheter insertion and AKI
- Identify “must haves” for successful therapy
- Talk with ICU, surgery, and IR about implementation
- Don’t let perfect be the enemy of good
- Short term PD can save lives

Consideration #3: Patient specific factors



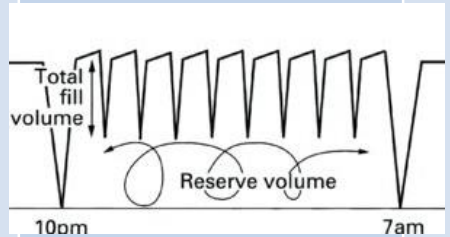
IPP in ARDS may alter respiratory dynamics and require increased PEEP



Severe hyperkalemia or lactic acidosis may not be suitable for PD

Dialysate leak and peritonitis risks are concerns but can be mitigated

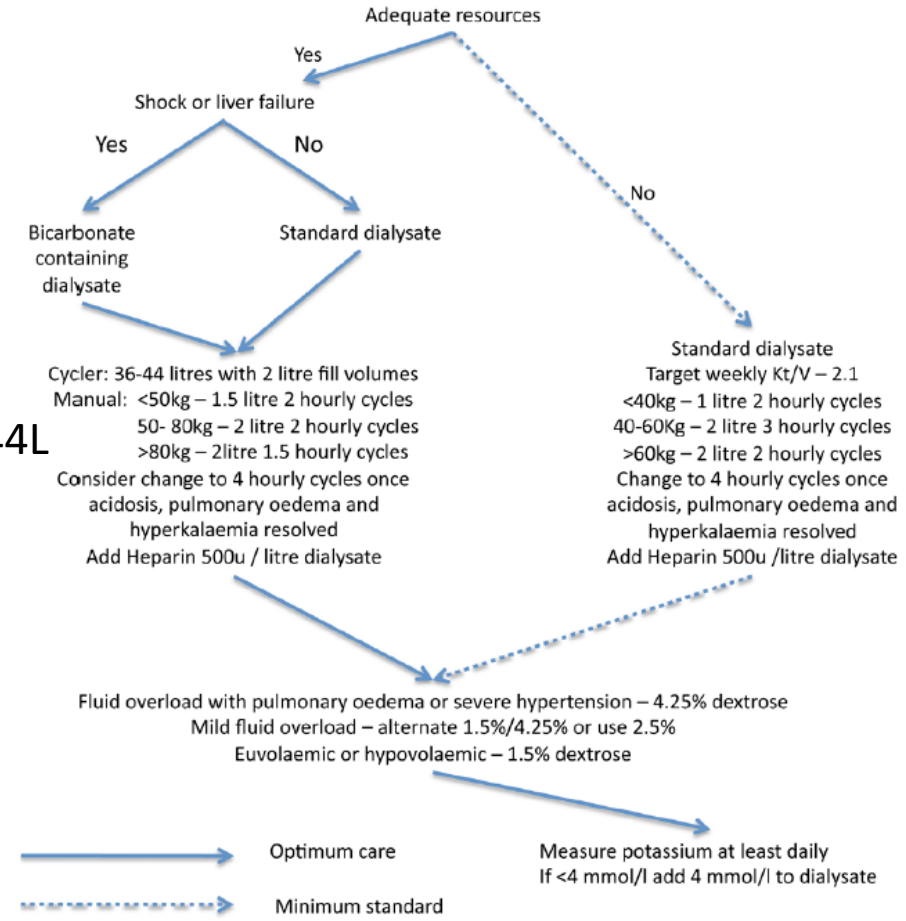
If usual surgical approaches are unavailable percutaneous PDC placement is an option[1]



Anticipate flow related problems and adopt strategies, including tidal PD and FMS

[1]Abdel-Aal AK et al. Best practices consensus protocol for peritoneal dialysis placement by interventional radiologists. Peritoneal Dialysis International 2013

Consideration #4: Prescription of acute PD in AKI



36-44L

12-24L

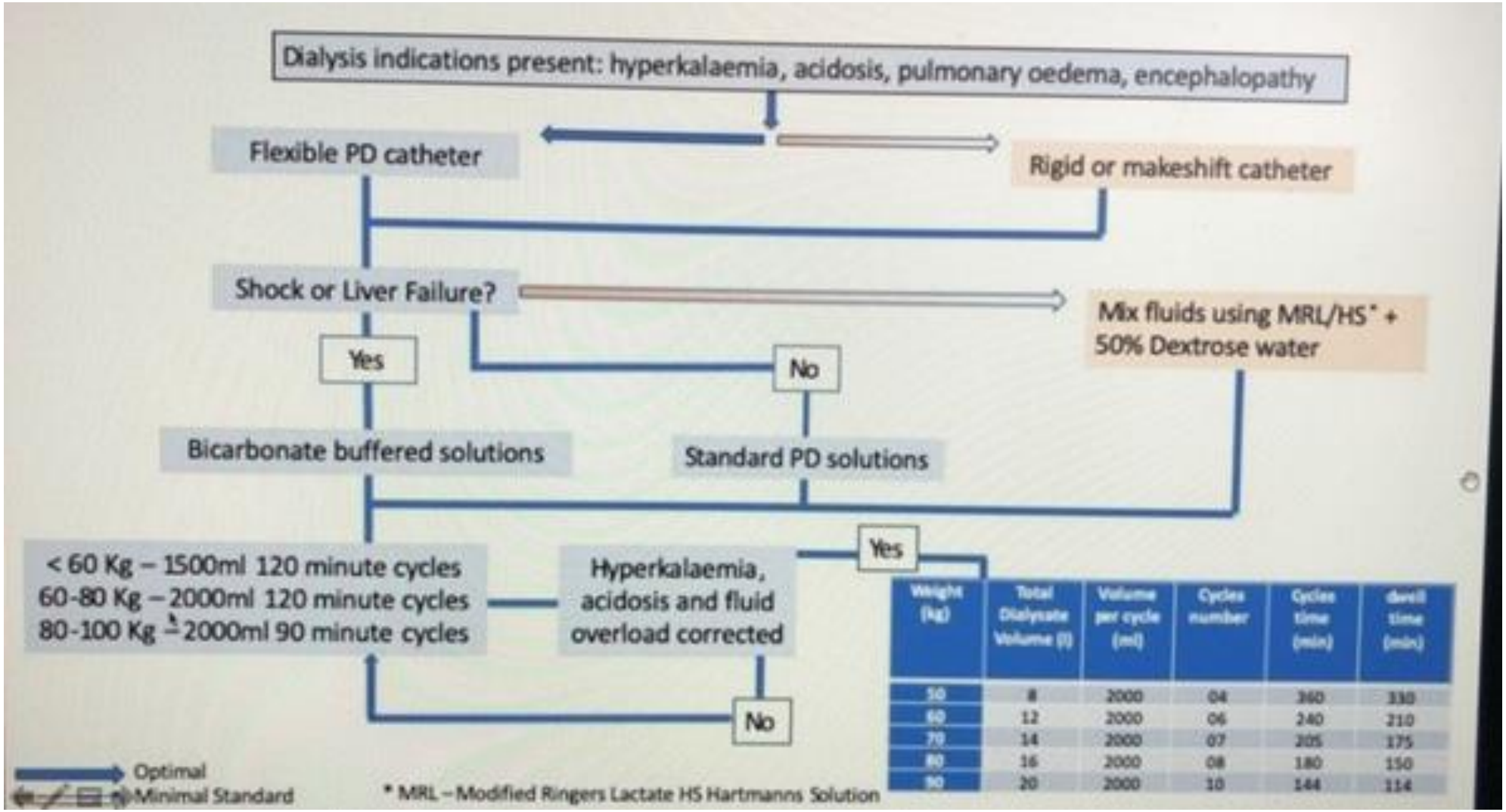
2014 ISPD acute PD guidelines

- During initial 24 hours, short cycle times may be needed to more rapidly achieve solute/fluid targets
- 2014 algorithm shown here
- 2020 Guidelines (not released yet)
  - Kt/V 3.5 target equivalent to daily HD
  - Kt/V 2.2 target may be equivalent to higher doses
  - Tidal PD using 25L daily with 70% tidal is equivalent survival to CVVHDF at 23ml/kg/hr effluent dose

https://ispd.org/ispd-guidelines/

Consideration #4: 2020 ISPD acute PD prescription protocol

Slide from Dr. Brett Cullis ISN-ISPD Webinar 4/23/2020 – soon to be available at: https://academy.theisn.org.



Sample protocol: King's College, U.K.

King's Kidney Care

King's College Hospital NHS Foundation Trust

Acute Peritoneal Dialysis on Intensive Care Units protocol

17th April 2020

Elaine Bowes, Senior Clinical Nurse Specialist

Hugh Cairns, Consultant Nephrologist

Claire Sharpe, Consultant Nephrologist

The plan below is for guidance but may need to be adjusted according to the patient's fluid status', metabolic dysfunction and ventilation status. All patients should be reviewed by a nephrologist daily and the prescription altered as necessary.

Session 1	Session 2	Session 3
Therapy: Tidal 90%or CCPD / IPD (NO TIDAL) Time: 12 - 18hours Total Vol: 20,000mls TO 30,000mls Fill Vol: 1200- 1600mls(no leaks in ITU Last Fill: 0mls Cycles: between 9 -14 Dwell Time: approx. 20-39mins 9 Patient specific Select Dextrose strength	Therapy: CCPD/IPD Time: 16 hours Total Vol: 20,000mls-30,000mls Fill Vol: 1500- 2000mls Last Fill: 0mls Cycles: 9 to 20 Dwell Time: 20 mins to 1:15	Therapy: CCPD/IPD **Or** Therapy: CCPD/IPD (dependent on drain pain) Time: 12 TO 16 hours Total Vol: 15,000 to 25,000mls Fill Vol: 1.5l to 2.5 l Last Fill: 1000 to 1500mls Dextrose: Different (Extraneal)

Reference; *Johan V. Povlsen and Per Ivarsen. How to start the late referred ESRD patient urgently on chronic APD. Nephrol Dial Transplant (2006) 21 [Suppl 2]: ii56–ii59*
doi:10.1093/ndt/gfl192

https://renal.org/wp-content/uploads/2020/04/KCH-Renal-Covid-Acute-PD-on-ICU-protocol-final.pdf