Acute PD for AKI
Important Considerations
GNYHA Webinar - 4/24/2020
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Chair, Quality Improvement and Education, NTDS
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
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

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

- Shortage of HD/CRRT machines or supplies
- Shortage of trained dialysis nurses
- Shortages of PPE
- Specific patient care issues in Covid-19

- What is your PD infrastructure?
- Who are your PD resources?
- Is a cycler-based approach feasible?
- Does PD address a unique need(s)?
Consideration #2: Standardize, then individualize

- 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.

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

Consideration #4: Prescription of acute PD in AKI

- 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

36-44L

12-24L

2014 ISPD acute PD guidelines

[https://ispd.org/ispd-guidelines/](https://ispd.org/ispd-guidelines/)
Consideration #4: 2020 ISPD acute PD prescription protocol

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.

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Session 2</th>
<th>Session 3</th>
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<tbody>
<tr>
<td>Therapy: Tidal 90% or</td>
<td>Therapy: CCPD/IPD</td>
<td>Therapy: CCPD/IPD</td>
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<tr>
<td>CCPD/IPD (NO TIDAL)</td>
<td>(Time: 16 hours</td>
<td>(Time: 16 hours</td>
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<tr>
<td>Time: 12 - 18 hours</td>
<td>Total Vol: 20,000mls -</td>
<td>(dependent on drain pain)</td>
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<tr>
<td>Total Vol: 20,000mls TO</td>
<td>30,000mls</td>
<td>Time: 12 TO 16 hours</td>
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<tr>
<td>30,000mls</td>
<td>Fill Vol: 1200-1600mls</td>
<td>Total Vol: 15,000 to</td>
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<td>(no leaks in ITU)</td>
<td>25,000mls</td>
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<tr>
<td></td>
<td>Last Fill: 0mls</td>
<td>Fill Vol: 1.51 to 2.5l</td>
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<td>Cycles: between 9-14</td>
<td>Last Fill: 1000 to</td>
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<td></td>
<td>Dwell Time: approx. 20-39mms</td>
<td>1500mls</td>
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<td>9 Patient specific</td>
<td>Dextrose: Different</td>
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<tr>
<td></td>
<td>Select Dextrose strength</td>
<td>(Extraneal)</td>
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Reference: Johan V. Poulsen and Per Iversen. How to start the late referred ESRD patient urgently on chronic
doi:10.1093/ndt/gfl192