Peritoneal Dialysis in Acute Kidney Injury

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Advantages and Limitations

- Availability
- Ease of administration
- Lack of bleeding risk
- Excellent cardiovascular tolerance
- Low risk of hydro-electrolyte disequilibrium
- Intact peritoneal cavity
- Risk of peritoneal infection
- Protein loss
- Lower effectiveness

Peritoneal Dialysis International 2009;29(2):s62-71)
High dose of CPD provided appropriate metabolic and pH control, with rate of survival and recovery of renal function similar to that seen with dHD. Therefore, CPD can be considered an alternative to other forms of RRT in AKI.

Peritoneal Dialysis International 2009;29(2):s62-71
Comparing CVVHD and Peritoneal dialysis in critically ill patients with AKI: A pilot study

CPD may be a cost conscious alternative to CVVHDF; difference in metabolic and clinical outcomes are minimal.

Peritoneal Dialysis International 2009;31(422-429)
Is PD adequate for hyper catabolic ARF in developing countries?

Both Tidal peritoneal dialysis and Continuous Equilibrating peritoneal dialysis are reasonable options for mild-moderate hyper catabolic ARF

Kidney International 2002;61:747-757
High volume PD for ARF

High dose continuous PD by flexible catheter and cycler was an effective treatment for ARF. It provided high solute removal, allowing appropriate metabolic and pH control and adequate dialysis dose and fluid removal. Continuous PD can therefore be considered an alternative to other forms of renal replacement therapy in ARF.

Peritoneal Dialysis International 2007;27(277-282)
PD in Patients with Shock and AKI
• Mr. SP 22 year old male with no pre-morbid illness presented with

• Loose stools and vomiting for 2 days.

• Altered sensorium for 1 day and referred to our emergency care for management of renal failure.
• Clinical exam was significant for severe dehydration and obtunded sensorium.

• Pulses were not palpable and blood pressure was not recordable.

• He was initiated on fluid resuscitation, ionotropic supports and was initiated on peritoneal dialysis supports in view of severe hypovolemic shock.
• His blood, urine and stool cultures did not grow any organism.

• He was treated emperically with antibiotics and had improved siignificantly over 5 days.

• He was changed to hemodialysis after 3 days of peritoneal dialysis with improved blood pressures.
A CASE OF ACUTE GASTROENTERITIS IN SEVERE HYPOVOLEMIC SHOCK
## INVESTIGATIONS

<table>
<thead>
<tr>
<th>Date</th>
<th>On PD</th>
<th>On HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urea (mg%)</td>
<td>23</td>
<td>100</td>
</tr>
<tr>
<td>s. Creat (mg%)</td>
<td>2.74</td>
<td>8.5</td>
</tr>
<tr>
<td>Sodium(m Eq/l)</td>
<td>134</td>
<td>136</td>
</tr>
<tr>
<td>Potassium(m Eq/L)</td>
<td>4.6</td>
<td>4.6</td>
</tr>
<tr>
<td>Hb(gm%)</td>
<td>17.3</td>
<td>13.5</td>
</tr>
<tr>
<td>T.WBC(/cu.mm)</td>
<td>28,100</td>
<td>20,100</td>
</tr>
<tr>
<td>PLAT.C(l/cu.mm)</td>
<td>4.14</td>
<td>2.49</td>
</tr>
</tbody>
</table>
CASE NO 2

• Mr. Na, a 25 year old male with no premorbid illness, presented to emergency ward in severe respiratory distress and shock.

• History given by attendants was short febrile illness for 2 days followed by oliguria and worsening dyspnoea for a total of 6 days duration.
• Evaluated elsewhere and details are unknown.

• Clinical exam was significant for absent peripheral pulses and BP was not recordable.

• He was intubated and connected to ventilator in view of severe respiratory distress.

• He was initiated on peritoneal dialysis through rigid catheter and later transferred to hemodialysis once his blood pressures had improved.
These are the blood reports as done at the time of admission.

<table>
<thead>
<tr>
<th>Investigative Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>6/1/12</td>
</tr>
<tr>
<td>Blood urea (mg%)</td>
<td>90</td>
</tr>
<tr>
<td>S. Creat (mg%)</td>
<td>4.92</td>
</tr>
<tr>
<td>Sodium (mEq/L)</td>
<td>130</td>
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<tr>
<td>Potassium (mEq/L)</td>
<td>4.9</td>
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<tr>
<td>Hemoglobin (gm%)</td>
<td>15.0</td>
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<tr>
<td>Blood pH</td>
<td>7.36</td>
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<tr>
<td>HCO3 (mEq/L)</td>
<td>10.3</td>
</tr>
</tbody>
</table>
CPD in a patient of Acute on CKD, presenting with AV-dissociation and cardiac dysfunction
Mr. ko, 54 year old male a known diabetic for 7 years, hypertensive for 15 years presented to emergency ward with complaints of worsening azotemia for 7-10 days.

Clinical exam was significant for bradycardia (55 beats/min), hypotension (90/60 mm Hg) and tachypnoea.

Systemic exam showed pericardial rub and bilateral pleural effusion.
ECG SHOWING COMPLETE HEART BLOCK AT ADMISSION
INVESTIGATIONS

• Blood urea: 199mg%
• S.creat: 9.25mg%
• Sodium: 130meq/l
• Potassium: 6.2meq/l
• Hemoglobin: 10.4gm%

• 2D ECHO: mild LV dysfunction, RWMA+
• He was initiated on peritoneal dialysis in view of hypotension and underlying cardiac dysfunction.
ECG while on Temporary Pace maker
1 degree AV Block after removal of TPI
THANK YOU