PERITONEAL DIALYSIS IN KETOSIS-SUSCEPTIBLE DIABETES MELLITUS

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Fifty-three patients who entered our chronic peritoneal dialysis (PD) programme since July 1976 were divided into two groups. The ketosis-susceptible (KDM) group comprised 33 patients aged 19.5 to 49.9 years with diabetic nephropathy visceral neuropathy with gastroparesis, diabetic retinopathy with clinical impairment of vision, and frequent episodes of ketoacidosis. The remaining 20 patients (non-KDM group) included six patients with diabetes mellitus aged 45.0 to 66.4 years who in their general status of health did not differ markedly from our non-diabetic PD patients.

Chronic PD commenced after implantation of a chronic peritoneal access and was predominantly done as either manual intermittent PD or reciprocating PD [1] for six to eight hours three times a week.

Complication frequencies were evaluated and cumulative survival rates were calculated using the life table method. The results are given in Table I, together with results reported by Mitchell [2] for haemodialysis (HD) and PD in juvenile onset diabetes mellitus (JODM).

Morbidity directly associated with PD treatments (peritonitis, catheter obstruction) was not significantly different in KDM and non-KDM patients. The higher frequency of catheter replacements in the KDM group suggest that complications were somewhat more severe in these patients. Cumulative survival rates were markedly better in non-KDM than in KDM patients both for overall survival regardless of treatment mode (including subsequent transplants or transfer to HD) and for PD treatment alone.

References

<table>
<thead>
<tr>
<th>Results</th>
<th>KDM</th>
<th>NON-KDM</th>
<th>MAYO PD</th>
<th>JODM HD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic Patient Data</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>n Total</td>
<td>33</td>
<td>20</td>
<td>14</td>
<td>43</td>
</tr>
<tr>
<td>n Male/Female</td>
<td>22/11</td>
<td>8/12</td>
<td>7/7</td>
<td>26/17</td>
</tr>
<tr>
<td>Age range (years)</td>
<td>19.5—49.9</td>
<td>11.1—72.5</td>
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<tr>
<td>Mean ± SEM</td>
<td>33.6 ± 7.2</td>
<td>42.4 ± 17.6</td>
<td>36</td>
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<tr>
<td>Serum creatinine</td>
<td></td>
<td></td>
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<tr>
<td>Mean ± SEM (mg/100ml)</td>
<td>11.4 ± 3.7</td>
<td>13.5 ± 4.7</td>
<td>11.3</td>
<td>12.1</td>
</tr>
<tr>
<td><strong>At Risk</strong></td>
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<tr>
<td>Mean ± SEM (Days)</td>
<td>597.3 ± 258.6</td>
<td>402.3 ± 334.2</td>
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<tr>
<td>Patient years</td>
<td>54.0</td>
<td>22.0</td>
<td></td>
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<tr>
<td><strong>Survived</strong></td>
<td></td>
<td></td>
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<tr>
<td>Mean ± SEM (Days)</td>
<td>305.8 ± 222.4</td>
<td>288.0 ± 250.4</td>
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<tr>
<td>Patient years</td>
<td>27.6</td>
<td>15.8</td>
<td></td>
<td></td>
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<tr>
<td><strong>On PD</strong></td>
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<tr>
<td>Mean ± SEM (Days)</td>
<td>184.0 ± 166.3</td>
<td>144.4 ± 149.9</td>
<td>160</td>
<td>168</td>
</tr>
<tr>
<td>Range (Days)</td>
<td>12—808</td>
<td>6—533</td>
<td>20—709</td>
<td>36—525</td>
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<tr>
<td>Patient years</td>
<td>16.6</td>
<td>7.9</td>
<td>6.1</td>
<td>19.8</td>
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<tr>
<td><strong>Complications</strong></td>
<td></td>
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<tr>
<td>n Peritonitis</td>
<td>18</td>
<td>9</td>
<td>3</td>
<td>—</td>
</tr>
<tr>
<td>% of PD</td>
<td>0.69</td>
<td>0.73</td>
<td>0.15</td>
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<td>Catheter problems</td>
<td></td>
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<td>n Obstructions</td>
<td>33</td>
<td>16</td>
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<td>—</td>
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<tr>
<td>% of PD</td>
<td>1.63</td>
<td>1.66</td>
<td></td>
<td>—</td>
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<tr>
<td>n Replaced</td>
<td>8</td>
<td>2</td>
<td></td>
<td>—</td>
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<tr>
<td>Vision (n patients)</td>
<td>(n = 32)</td>
<td>(n = 20)</td>
<td>(n = 11)</td>
<td>(n = 36)</td>
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<tr>
<td>n Improved (%)</td>
<td>1 (3.1)</td>
<td>0 (0.0)</td>
<td>4 (36.4)</td>
<td>0 (0.0)</td>
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<tr>
<td>n Unchanged (%)</td>
<td>26 (81.3)</td>
<td>19 (95.0)</td>
<td>7 (63.6)</td>
<td>25 (69.4)</td>
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<tr>
<td>n Deteriorated (%)</td>
<td>5 (15.6)</td>
<td>1 (5.0)</td>
<td>0 (0.0)</td>
<td>11 (30.6)</td>
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<tr>
<td><strong>Cumulative Survival</strong></td>
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<td></td>
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<td>% ± SE after X months</td>
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<tr>
<td>Overall X = 3</td>
<td>81.3 ± 7.6</td>
<td>94.7 ± 5.1</td>
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<tr>
<td>6</td>
<td>71.9 ± 9.3</td>
<td>87.2 ± 8.7</td>
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<td>9</td>
<td>55.1 ± 9.7</td>
<td>87.2 ± 8.7</td>
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<tr>
<td>12</td>
<td>51.5 ± 9.9</td>
<td>67.2 ± 14.1</td>
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<tr>
<td>18</td>
<td>26.7 ± 9.4</td>
<td>53.7 ± 16.5</td>
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<tr>
<td>24</td>
<td>26.7 ± 9.4</td>
<td>53.7 ± 16.5</td>
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<td>PD Only X = 3</td>
<td>80.2 ± 8.4</td>
<td>89.2 ± 7.2</td>
<td>74</td>
<td>84</td>
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<tr>
<td>(* = HD)</td>
<td>6</td>
<td>71.7 ± 10.1</td>
<td>89.2 ± 7.2</td>
<td>52</td>
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<tr>
<td>9</td>
<td>44.3 ± 11.1</td>
<td>89.2 ± 7.2</td>
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<td>84</td>
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<td>12</td>
<td>44.3 ± 24.8</td>
<td>89.2 ± 7.2</td>
<td>52</td>
<td>55</td>
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<td>18</td>
<td>22.1 ± 12.4</td>
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<tr>
<td>24</td>
<td>22.1 ± 12.4</td>
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<tr>
<td><strong>Causes of Death</strong></td>
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<tr>
<td>n Deaths (%)</td>
<td>20 (100.0)</td>
<td>5 (100.0)</td>
<td>6 (100.0)</td>
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<tr>
<td>n Vascular (%)</td>
<td>13 (65.0)</td>
<td>3 (60.0)</td>
<td>4 (66.7)</td>
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<td>n Infections (%)</td>
<td>2 (10.0)</td>
<td>1 (20.0)</td>
<td>2 (33.3)</td>
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<tr>
<td>n Other/Unknown (%)</td>
<td>5 (25.0)</td>
<td>1 (20.0)</td>
<td>0 (0.0)</td>
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</table>

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