Assisted Peritoneal Dialysis' – Who Does It? And What Is The Relationship To Peritonitis?


Abstract:

This study aimed at retrospectively evaluating the care giver profile in our PD patient and analyzing the occurrence of peritonitis in relation to the relationship of the care giver to the patient and their educational profile. This is a retrospective study. The study duration was from April 1999 to March 2013. The relationship of the care giver to the patients, the educational status of the care givers were related to the occurrence of peritonitis in the patients. Statistical analysis was done using SPSS 17 software and a p value of < 0.05 was considered significant. Total number of patients initiated on PD during this study period was 235. There were 180 men and 55 women. The basic renal disease was Diabetic nephropathy in 140 and non diabetic renal disease in 95. Wife was the care giver in 142 (60.42 %), followed by husband 26 (11%), son 21 (8.9%), daughter 15 (6.38%), home nurse 10(4.2%) and others in 21(8.9%) including daughter in law 7(3%), mother 4(1.7%), sister 3 (1.3%), brother 1 (0.4%), self 2 (0.8%) and other relatives 4 (1.6%). Fifty seven patients had peritonitis and 85 did not with 'wife' as the care provider and among the other care providers 28 had peritonitis and 65 did not and this is not statistically significant (p=0.506 NS). 137 care givers (58.2%) had college level education and 98 (41.2%) were educated up to school level. One hundred fifty (63.8%)patients had no peritonitis during follow up – 86 caregivers were college educated and 64 had school level education. Eighty five patients (36.2%) had one or more episodes of peritonitis – 51 were college educated and 34 had education up to school level.(p=0.118 NS). In our study wife was the principle care provider and there was no significant difference in the peritonitis between 'wife' and the rest. Also the educational status of the care giver does not influence the peritonitis occurrence.

Keywords: Caregivers, Assisted PD, Peritonitis.

Introduction:

Peritoneal Dialysis (PD) utilization is on the decline all over the world in spite of significant increase in the number of patients reaching End Stage Renal Disease (ESRD), especially in the elderly. (1) In Canada, registry data show that, between 1995 and 2002, the absolute number of patients older than 75 years of age starting hemodialysis (HD) per annum rose 300%, while the number of patients starting PD rose only 40%. As a consequence, the percentage of all ESRD patients over 75 years of age initiating PD fell from 30% to 12% (2). In the United Kingdom, a comparison of modality utilization in individuals under 65 years of age and in those 65 years of age and older showed that in 2006, 30% and 17% respectively of incident patients were on PD 90 days after initial treatment (3).
Although peritoneal dialysis (PD) has many advantages, such as ease of training and accommodation, simple facilities, and good mobility, better preservation of residual renal function, fewer chances of infections compared to Hemodialysis and less cardiovascular morbidity and mortality, the procedure is difficult for patients who are physically disabled or noncompliant. Many studies have demonstrated that self-care difficulties contribute to the underutilization of PD as a kidney replacement therapy despite many patients being capable of performing dialysis themselves. The important reason is fear of failure in self-care therapies (4, 5, and 6). The utility of PD increased significantly if someone (nurse or a family member) assists the dialysis therapy (7).

There are very few studies that are available that looked into the care provider status and looked into the differences in outcome in relation to the care provider status. Ching-Hsiu Peng et al studied the peritonitis episodes among the self cared, family member assisted and foreign care giver assisted PD and concluded that patients did better under foreign care givers (8). Issad et al studied peritonitis among the self cared and assisted PD patients and concluded that there is no statistically significant difference among them (9). Lobbedez et al reported higher peritonitis rates in assisted PD patients (10) and Verger et al reported lesser peritonitis in family assisted PD compared to a private nurse assisted dialysis (11).

In India, most of the patients on PD are dialyzed by a family member. The main reason for this is the cultural background in our country where the patient is always cared for by a family member, in spite of additional burden to them. Also hiring a care provider would add to the financial burden on the family, as most patients are self paying for their treatment. Hence the problem of self care is not a big concern. However, not many studies are available from Indian subcontinent where the care giver profile is analyzed in a PD population. We retrospectively analyzed our data on our care giver in our PD population.

**Materials and Methods:**

This is a retrospective study. The study duration is from April 1999 to March 2013. Patients who underwent CAPD initiation in our hospital were included in this study. For almost all our patients one or more of a near relative have volunteered to provide continuous dialysis care to the patient. Only if a near relative is not available and if the patient can take care of himself, we have allowed 'self-care' on PD. If any patient who is financially affordable and he or she has no family member to take care then a nurse care provider to advised to the patient.

We looked into the nature of the care provider (the relationship to the patient), their educational level (school educated and college educated) and compared the peritonitis episodes in relation to the care provider.

Statistical analysis was done with the SPSS.17 software and the 'p' value of <0.05 was considered statistically significant.

**Results:**

Total number of patients was 235. There were 180 men to 55 women. Diabetic Nephropathy was the basic disease in 140 and 95 had chronic kidney disease due to non diabetic renal diseases.

Analysis of the care provider relationship to the patient revealed that 'wife' was the care provider for 142 patients (60.42%). This was followed by the husband 26 (11%), son 21 (11%), daughter 15 (6.38%), home nurse 10 (4.2%), and others 24 (8.8%) that included daughter in law 7 (3%), mother 4 (1.7%), sister 3 (1.3%) brother 1 (0.4%) other relatives in 4 (1.6%) and self 2 (0.8%) (fig.1).
The care providers were also categorized according to the educational status – school educated and college educated, and analyzed the occurrence of peritonitis in them. The school and college level educated caregivers in each group are – wife 67 & 75, husband 9 & 17, son 7 & 14, daughter 11 & 4, nurse 0 & 10 and others 4 & 17 respectively. Overall 98 of them (41.7%) were school level educated and 137 had (58.3%) college level education. Among the school level educated care givers, 34 developed peritonitis and 64 did not. Among the college level educated care givers (137) 51 developed peritonitis and 86 did not. Statistical analysis between them was not significant (p = 0.118) (table1).

**Table 1:**

<table>
<thead>
<tr>
<th>School Level Educated Total (A)</th>
<th>College Educated Total (B)</th>
<th>(A+B) Total (A+B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perit. + Perit. -</td>
<td>Perit. + Perit. -</td>
<td>Perit. + Perit. -</td>
</tr>
<tr>
<td>Wife 27 40 67</td>
<td>30 45 75 142</td>
<td></td>
</tr>
<tr>
<td>Husband 0 9 9</td>
<td>7 10 17 26</td>
<td></td>
</tr>
<tr>
<td>Son 3 4 7</td>
<td>4 10 14 21</td>
<td></td>
</tr>
<tr>
<td>Daughter 4 7 11</td>
<td>1 3 4 15</td>
<td></td>
</tr>
<tr>
<td>Nurse 0 0 0</td>
<td>3 7 10 10</td>
<td></td>
</tr>
<tr>
<td>Others 0 4 4</td>
<td>6 11 17 21</td>
<td></td>
</tr>
<tr>
<td>Total 34 64 98</td>
<td>51 86 137 235</td>
<td></td>
</tr>
</tbody>
</table>

**Fig 2:** Peritonitis Episodes In Relationship To The Care Provider.
**Discussion:**

Though PD has been practiced for over decades all over the world little attention is given to the care givers who perform the dialysis. Few available studies have conflicting results regarding peritonitis in relation to the care provider status. While Ching-Hsiu Peng et al (8) concluded that patients did better with foreign care givers, Issad et al(9) in their study did not find any difference in peritonitis irrespective of the care givers, Lobbedez et al. (10) and Verger et al (7, 11) concluded self cared patients had less peritonitis and nurse assistance had a higher peritonitis rate and a lower technique survival rate.

In our study we analyzed the nature of our care givers retrospectively in our PD population. It is interesting to note that the majority of the care givers are wives and this could largely because most of the patients were men. Husband are the second major care provider followed by children. Only 10 patients (4.25%) had 'nurse care providers' and only 2 patients dialyzed themselves.

Analysis also revealed that 150 patients (63.8 %) did not develop even single episode of peritonitis and 85 patients (36.2%) had one or more episodes of peritonitis. Since our self cared and nurse assisted patients constituted very few patients, we compared the difference in peritonitis between 'wife assisted' and the rest of the patients. We did not find any difference between these two groups - 57 peritonitis episodes with wife as the care provider and 28 episodes of peritonitis with the rest (p= 0.118). This is the first study where the comparison is made between wife and the rest of the care providers.

We also compared the educational status of the care provider to the occurrence of peritonitis. We divided the care providers with 'school level educated' and 'college level educated'. Out of 98 care providers with school level education 34 patients had peritonitis and out of 137 college educated care providers there were 51 episodes of peritonitis and we did not find any statistically significant difference among them (p = 0.118). So far, no study compared this variable.

To conclude, this is the first Indian study where the care provider status is analyzed among the PD population. Wife is the commonest care provider and the peritonitis occurrence is similar between wife assisted and the other care providers. Also the educational status of the care provider does not influence the peritonitis.

**Reference:**


