

Evaluation of a pre-peritoneal dialysis assessment and education programme

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Abstract

This study formally evaluated our pre-peritoneal dialysis (PD) programme to identify the benefits and challenges of the pre-PD period for patients and families and to discover aspects of the programme which required modification. Evaluation methods included retrospective analysis of patient data, including demographics, issues and outcomes. Patient stories were collected and analysed to ascertain the patients' experiences of the programme and preparedness for PD.

Data for 94 patients were analysed in this study. The average age was 61.6 years and the average eGFR at entry onto the pre-PD programme was 11 mmol/L. The main issue identified for 34 (36%) patients was poor eyesight and 30 (32%) had more than one issue. There were no patients in this study group who were rejected as suitable for a trial of PD. Of the 94 patients, 63 patients progressed to PD with an average time to PD catheter insertion being 61 days. Patient stories revealed three themes: "Support and guidance", "Making the best of a bad situation" and "Lots to learn". Overall, patients were satisfied and welcomed the support of the PD nurses, but, at times, found the information overwhelming.

Modifications have been made to the pre-PD programme and it will remain an integral component of pre-dialysis care with the aim of enabling a smooth and supported transition to PD.

Keywords

Pre-peritoneal dialysis education and assessment, pre-peritoneal dialysis pathway.

Introduction

The use of peritoneal dialysis (PD) has been in decline in Australia over the last decade (Blake *et al.*, 2013; Brown *et al.*, 2013). This is in part due to the increase in the frailty of our patients and the increase in the availability of satellite haemodialysis (HD) centres. In our unit there has always been an emphasis on home therapy first and our PD patient numbers have stayed steady and recently started to climb in comparison with the Australian average. Twenty-four per cent of our dialysis patients are on PD, compared to 19% reported nationally at the end of 2011 (Brown *et al.*, 2013).

Approximately 60% of patients enrolled in our renal service's pre-dialysis programme choose PD as their dialysis option. Once a patient who chooses PD progresses to stage 5 CKD, they commence on a PD pathway, which involves assessment and intensive education. This PD pathway is also offered as early as possible to patients who start dialysis urgently to allow for the smooth transition to PD from HD or acute PD.

Effective and timely preparation of patients for impending dialysis is an imperative in our PD service and it is assumed that patients will start PD well prepared and thus have fewer difficulties with training and lifestyle adjustment. The pre-dialysis period can be very stressful for patients and the stress levels influence dialysis modality choice and preparedness (Harwood *et al.*, 2010; Lo *et al.*, 2008). This is taken into account and support and education are commenced early to allow for optimum patient and family involvement. It is also ideal for patients to receive education before cognitive skills are compromised by more advanced symptoms of renal failure; for example, uraemia (Morton *et al.*, 2010; Bernardini *et al.*, 2006).

The significance of a pre-PD assessment in the literature is to identify whether patients are suitable and likely to succeed at home dialysis (Blake *et al.*, 2013; Home Dialysis Central, 2011; Chow, 2005; Chow & Bennett, 2001). The *Match D: Method to assess treatment choices for home dialysis* is a tool designed to assist health care workers in identifying patients suitable to

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perform home therapies (Home Dialysis Central, 2011). The Australian version of the tool was introduced subsequent to the development of our assessment tool and includes a check list for suitability criteria for self-PD, either continuous ambulatory PD or automated PD and stresses the need to encourage PD after assessing and eliminating barriers. Similarly, the main aim of our pre-PD assessment is to identify any issues that will impede successful PD initiation early and put strategies in place to rectify or modify them.

The pre-PD program

The pre-PD programme serves a number of purposes. Firstly, it provides the opportunity for patients and family to meet the PD staff who will be training and caring for them. The first interview is the first step in the development of a therapeutic relationship with the patient and family (Luongo & Kennedy, 2004). Secondly, the patient and family are educated regarding types of PD, training regime, patient roles, supply of equipment and fluid and pre- and post-PD catheter insertion management. They are supplied with a number of learning resources and encouraged to ask questions. The delicate balance of offering adequate information without overwhelming the patient is a challenge for the PD nurses (Luongo & Kennedy, 2004).

Thirdly, a thorough assessment is performed including a review of hearing, vision, dexterity and mobility. Any impairment is not seen as a deterrent to PD, especially in the elderly and the implementation of assisted PD can overcome many of these barriers (Brown, 2011; Tesar, 2010). Social supports and other psychosocial parameters are also addressed. The patient's support system, especially in the elderly is one of the keys to successful PD initiation (Chanouzas *et al.*, 2012; Lenci & Campbell, 2010).

The fourth action is the determination of *Staphylococcus aureus* (*Staph A*) status via a nasal swab to allow time for eradication therapy. Nasal carriage of *Staph A* is associated with an increased risk of *Staph A* exit site infection, tunnel infections, peritonitis and catheter loss (Bender *et al.*, 2006; Piraino *et al.*, 2005). If a

patient has a positive culture, they will commence a week of mupirocin nasal cream application, withhold the cream for one week and then have a repeat nasal swab. If the repeat nasal swab is positive, the same treatment is repeated until the culture is negative (Bender *et al.*, 2006; Piraino *et al.*, 2005). As the initial culture may yield a false negative, a nasal swab is repeated prior to catheter insertion in all patients (Bender *et al.*, 2006).

Lastly, a check of vaccination status ensures that patients have undergone vaccination for hepatitis prior to dialysis initiation (Johnson *et al.*, 2009). Table 1 summarises the components of the pre-PD programme.

The initial pre-PD education and assessment process is conducted by the PD clinical nurse consultant or PD clinical nurse specialist and usually takes two to three hours to complete in one session or more. Once the patient and family have received the education, they are linked in with the service and are supported through the next phase — catheter insertion.

Issues and challenges raised during the assessment process are logged in an action plan to the patient's nephrologist, pre-dialysis nurse and in some instances the interventional nephrologist or vascular surgeon inserting the PD catheter. Some actions will be required by the patient, the carer or family, the nephrologist, general practitioner or the surgical team. The social worker and dietitian have been involved in the pre-dialysis process since the patient's initial visit and they might be called upon to have input into solving particular issues so that dialysis commencement runs as smoothly as possible.

The formal pre-PD programme incorporating patient assessment and education was commenced in 2009. After four years, there is enough data to formally review the programme. This paper presents our formal evaluation of the pre-PD programme, which was undertaken to identify the benefits and challenges of the pre-PD period for patients and families and to discover aspects of the programme which required modification.

Table 1: Components of the pre-PD assessment and education program

| | |
|--|--|
| The pre-PD programme provides the opportunity for patients and families to: | |
| 1. Meet the PD nurses and other key staff | |
| 2. Receive education regarding: | <ul style="list-style-type: none"> • the training regime • patient/carer roles and responsibilities • supply of equipment and fluids • catheter insertion — pre- and postoperative management • home dialysis support |
| 3. Undergo assessment including: | <ul style="list-style-type: none"> • dexterity • mobility • social supports and other psychosocial parameters • hearing and vision |
| 4. <i>Staph A</i> status via a nasal swab is determined so that there is time for eradication therapy | |
| 5. A check of vaccination status ensures that patients have undergone hepatitis vaccination prior to dialysis initiation | |
| 6. A number of learning resources are given and questions encouraged | |

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Methods

Ethics approval was granted to undertake a low, negligible risk research study in November 2013. Data collected on patients enrolled in the pre-PD programme were analysed to ascertain the number of assessments conducted, the demographics of age, eGFR on initial enrolment and the number of issues assessed for action prior to dialysis commencement. The outcomes following initial enrolment were also identified.

Patient and family satisfaction with the programme was evaluated through six patient/carer stories, which were transcribed and themed. The patient story interview was an opportunity to hear the opinions, experiences, perceptions and fears of patients, their families and carers.

Only patients who were known to the service and enrolled on the pre-dialysis programme were included for analysis. Patients who were late referrals (<3 months prior to dialysis commencement) were excluded from the study.

Results

Data analysis

In total, 160 patients have undergone initial assessment and education for PD since 2009. Of these patients, 94 were enrolled in the pre-dialysis programme and had commenced a pre-PD pathway. It was these 94 patients who were included in this evaluation.

Of the 94 patients' assessment information analysed: there were 60 males and 34 females. The average age was 61.6 years, with an age range of 24–87 years. The Average eGFR on assessment was 11 mmol/L (range 3–23 mmol/L). There were 10 (10%) patients who attended an initial appointment at eGFR >15 mmol/L, 45 (48%) patients at eGFR 10–15 mmol/L and 39 (41%) were seen at eGFR <10 mmol/L.

Initial assessment and education was performed with an interpreter in five instances and in most cases a family member or carer was present. In regard to issues discovered during the initial assessment, 30 (32%) patients assessed had no issues identified. The main issue for 34 (36%) patients was poor eyesight. Two or three issues including vision or hearing deficits, dexterity and/or mobility issues and problems with lack of support or inability to have time off work for training purposes were identified in 30 (32%) patients. There were no patients in this study group who were rejected as suitable for a trial of PD. Four (1%) patients assessed had four or more issues identified. Of these four, one patient died before catheter insertion and three progressed to PD with a carer trained.

Patient outcomes

Of the 94 patients, 63 patients progressed to PD with an average time to PD catheter insertion being 61 days and a range from 0 to 578 days. At the end of 2013, 31 patients had not progressed to PD. Of the 31 that had not commenced PD, seven remained active on the pre-PD pathway, two underwent a pre-emptive transplant, six commenced HD (satellite or home HD) due to

changing their preferred option over time and 10 opted for no dialysis and the Renal Supportive Care Programme. Six patients died or transferred out of service before the planned PD commencement. Table 2 presents a summary of patient outcomes.

Table 2: Outcomes for 94 patients who were on the pre-PD pathway

| Outcome | n= |
|----------------------------------|----|
| Progressed to PD | 63 |
| Did not progress to PD | 31 |
| Remain on a pre-dialysis pathway | 7 |
| Pre-emptive transplant | 2 |
| Commenced HD | 6 |
| Renal supportive care | 10 |
| Died/transferred or lost to FU | 6 |

Patient stories

Six stories were collected from patients/carers following commencement of PD and prior to completion of training. The plan was to take 10 stories, but it was identified following six that the findings were identical and the same information was repeated. The interviews were held in a quiet area away from the main unit. All participants signed a consent form prior to providing their story. The average time for the stories was 12 minutes.

The patient and/or carer was asked: "What was your experience of starting PD?"

If they required further prompting, they were asked the question: "Do you think you were well prepared for PD?"

The patients' responses were scribed and then transcribed for analysis and the major themes were:

“Support and guidance”:

Lots of information was provided but felt it was surmountable with help of PD nurses and family.

I was given clear and easy to understand resources.

I was taken by the hand and told I could do it.

“Making the best of a bad situation”:

I did not want dialysis — nobody does.

I did not want to have dialysis but I felt prepared and supported by the PD nurses.

You just have to relax and learn.

“Lots to learn”:

There was lots of information.

I could not concentrate so I am lucky my family came too.

Discussion

Most problems which preclude patients for PD can be overcome. Patients who are unable to have PD due to past

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surgery or lack of carer have been counselled within the pre-dialysis programme to choose HD or the renal supportive care pathway. This results in patients embarking on the pre-PD pathway with a clear decision for PD and the desire to perform a home-based therapy.

The pre-dialysis period is a very stressful time for patients. Patients have described the period as overwhelming and the information required to process as equally burdensome. They appreciate receiving the information early so that they can synthesise it and start dialysis as prepared as possible.

The theme, *lots to learn*, was identified as needing some action. Traditionally, the initial education material was presented over a period of two to three hours dependent on patient need. The information provided commences with the basic concepts of PD and patients and family often have many questions, leading to an extension of the allocated interview time. In an effort to minimise the time the patient and family spend in one-on-one didactic education, the programme has been modified. Firstly, all patients receive information regarding the PD process during their pre-dialysis clinic appointments. Patients are requested to reread the pertinent information prior to initial interview and compile a list of questions requiring clarification. This provides more structure for the initial interview and aids in addressing the individual learning needs of the patient. The time period for the education session has been capped at two hours with a 10-minute break. If the education or assessment is not complete in the two-hour session, the patient will return for another interview. There is no limit to the amount of time the patient/family might need to cover the key principles and assimilate the information. The process is structured around the individual patient's learning needs.

Patients do not mind receiving the information early when eGFR <15 mmol/L but it has been identified that the renal function of some patients on the pre-PD pathway remains stable over a number of years. For this reason, the education and assessment is repeated yearly or as indicated.

Although the pre-PD pathway commences at eGFR \leq 15 mmol/L, some patients attended for education and assessment earlier because they had specifically requested to meet the PD staff or have intensive education to assist in decisions regarding modality choice. An eGFR between 10 and 15 mmol/L remains the most appropriate window for education and assessment and allows for a switch to HD and vascular access creation if the patient changes his/her decision or physical circumstances change and they can no longer perform a home therapy. It can be difficult for patients with an eGFR <10 mmol/L to comprehend and retain the information discussed as cognitive skills are compromised by more advanced symptoms of renal failure and the anxiety leading up to catheter insertion. This finding supports those of Morton *et al.* (2010) and Bernardini *et al.* (2006). Patients that experience a sudden decline in renal function will always have education, even if it is immediately prior to catheter insertion.

Conclusions

Findings reveal that if pre-PD assessment and education is conducted in a timely manner there is time to mitigate issues regarding training. Patients who were enrolled in the pre-PD programme and were tracked on the pre-PD pathway felt supported and ready to commence dialysis.

The pre-PD programme will remain an integral component of pre-dialysis care with an aim of enabling a smooth and supported transition to PD. Evaluation of the pre-PD programme will be integrated into our yearly review of the PD service to ensure that we are providing the best possible support and evidence-based care for our PD patients.

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