

Palliative Care for Patients with Malignancy and End-Stage Renal Failure on Peritoneal Dialysis

Lv Jing, Xue Wu-Jun, Tan Feng

Division of Nephrology, First Affiliated Hospital of Xi'an Jiaotong University, Xi'an, Shaanxi, China

Address for correspondence: Prof. Xue Wu-Jun, E-mail: drlunwen@163.com

ABSTRACT

Background: Many patients on peritoneal dialysis experience a poor quality of life because of a high burden of comorbid conditions. Dialysisists must pay more attention to reducing a patient's pain and suffering, both physical and psychological and improve the quality of life for the patients as much as possible. A consensus regarding eligibility for palliative care and the delivery of these inventions does not currently exist.

Objective: The present study aimed to describe the implementation of palliative care for end-stage renal failure patients on peritoneal dialysis.

Design: A report on three cases.

Materials and Methods: This study included three outpatients on peritoneal dialysis who received palliative care and died between January 2008 and June 2010.

Measurements: The patients' comorbidities, nutritional status, and functional status were evaluated using the Charlson comorbidity score, subjective global assessment, and Karnofsky Performance Score index, respectively. The Hamilton depression and Hamilton anxiety scales were also employed. The patients' clinical manifestations and treatments were reviewed.

Results: Each patient displayed 11-16 symptoms. The Charlson comorbidity scores were from 11 to 13, the subjective global assessment indicated that two patients were class assigned to "C" and one to class "B", and the mean Karnofsky index was <40. Among these patients, all experienced depression and two experienced anxiety. Low doses of hypertonic glucose solutions, skin care, psychological services, and tranquilizers were intermittently used to alleviate symptoms, after making the decision to terminate dialysis. The patients died 5 days to 2 months after dialysis withdrawal.

Conclusion: The considerable burden associated with comorbid conditions, malnutrition, poor functional status, and serious psychological problems are predictors of poor patient prognoses. Withdrawal of dialysis, palliative care, and psychological interventions can reduce patient distress and improve the quality of life before death, with the care provided.

Key words: Palliative care, peritoneal dialysis, quality of life, symptom burden

INTRODUCTION

Comorbidity is an important predictor of poor outcomes in peritoneal dialysis (PD) patients. Many patients on PD

experience a poor quality of life because of a high burden of comorbid conditions, such as diabetes, cardiovascular disease, tumors, etc.^[1] Some authors believe^[2] that dialysis is a treatment that only prolongs pain and suffering, but does not alter the clinical outcome, despite its high cost. Dialysisists must pay more attention to reducing a patient's pain and suffering, both physical and psychological and improve the quality of life for the patients as much as possible. However, a consensus regarding eligibility for palliative care and the delivery of these inventions does not currently exist. We explored the feasibility of palliative care in PD population through a retrospective analysis of three patients.

Access this article online

Quick Response Code:



Website:
www.jpalliativecare.com

DOI:
10.4103/0973-1075.132636

MATERIALS AND METHODS

Study population

Three outpatients on PD received palliative care in the PD center of the First Affiliated Hospital of Xi'an Jiaotong University were included in this analysis. The patients died between January 2008 and June 2010.

Palliative care intervention

The patients' comorbidities were evaluated by the Charlson Comorbidity Index (CCI), an instrument designed to quantify comorbid illness, with higher scores correlating with more severe illness. Nutritional status was evaluated using the subjective global assessment (SGA), A is defined as good nutritional status, B as mild to moderate malnutrition, and C represents serious malnutrition. Functional status was assessed by the Karnofsky Performance Score (KPS) index which was determined using the full scale (range, 10-100). The KPS was stratified into three functional classes: >80 (patients with normal activity), 50-70 (patients requiring assistance), and <40 (dependent patients, requiring institutional or hospital care).^[3] The Hamilton depression and Hamilton anxiety scales were employed to assess the extent of the patients' depression and anxiety. According to these evaluations, the patients' survival times were estimated. We discussed the patients' survival predictions with the family members and helped them make a decision to start palliative care. Hypertonic glucose solutions, low dialysis fluid infusion, and fewer dialysis exchanges were used to increase water removal and decrease abdominal pressure. Sedatives or analgesics and external therapy were used to ease symptoms. Intermittent blood transfusions were used to reduce anemia instead of administering erythropoietin (EPO). The patients treated by palliative care were visited two times per week, and their clinical information was gathered by daily telephone contact. Health-related advice was provided to the caregivers to alleviate the patients' physical and psychological symptoms.

Case 1

A 70-year-old woman with chronic renal failure, resulting from type 2 diabetes was the first patient in the series. This patient's comorbid conditions included a persistent diabetic foot ulcer, a previous myocardial infarction, a coronary artery bypass, and an incomplete dislocation of the left shoulder joint that resulted in impaired mobility of the left upper limb. The patient was diagnosed with ovarian cancer when PD was started 7 months

previously. The patient was symptomatic for paresthesia, pruritus, insomnia, anorexia, anasarca, extreme fatigue, frequent chest pain, shortness of breath, malnutrition, depression, anxiety, and an overall poor quality of life. For these reasons, the patient decided to withdraw from dialysis. At the initiation of palliative care, the patient's had a CCI of 11, a KPS index of 40, and her nutritional status was B, as evaluated by the SGA. Her psychological assessment, performed using the Hamilton depression scale, was 11 and her Hamilton anxiety scale was 22. After dialysis cessation, extreme paresthesia and panting occurred. Meperidine (50 mg intramuscularly) was administered intermittently to ease the patient's pain. Aloe leaf juice was also rubbed on the patient's skin with warm water. Chlorpheniramine maleate (4 mg, 3 times/day) and clonazepam (0.5 mg, nightly) was used to alleviate itching. Hypertonic glucose (2.5%) solutions (1200 mL) were exchanged 2 times/day with a dwelling time of 2 hours or a 4.25% glucose dialysate once per day, 1200 mL, with a dwelling time of 3 hours. This treatment was designed to increase water removal, relieving the symptoms caused by volume overload and preventing increased abdominal pressure. The patient died 14 days after dialysis withdrawal.

Case 2

Case 2 was a 72-year-old female patient, with chronic glomerulonephritis in the uremic stage, hepatitis C, idiopathic liver cancer, coronary heart disease, chronic bronchitis, cataracts, chronic obstructive emphysema, and a left inguinal hernia. The patient had been on PD for 2.5 years. Five months before her death, her CCI reached 13. She became anuric and experienced 16 symptoms, including severe pruritus, anorexia, fainting, shortness of breath, chest pain, and a productive cough. In addition, her exercise ability had decreased markedly, as indicated by a KPS of 20. Furthermore, her nutritional status had deteriorated notably, as assessed by SGA, to a C. Severe depression occurred, based on a Hamilton depression score of 18. After obtaining consent from the patient and her family, the dialysis prescription was modified to the use of 2.5% glucose solutions, exchanged twice per day, with a reduced instillation volume (1.4 L/exchange) in order to relieve the symptoms of abdominal distention and edema. She stayed in her home with soft light and a quiet environment to help keep her relaxed. Psychological service was performed daily by telephone. The use of estazolam (1 mg/day) helped keep the patient asleep and alleviate her suffering. Two weeks before death, the patient exhibited a decreased blood pressure and weight loss. Glucose solutions (1.5%, exchanged twice per day) were used to maintain an ultrafiltration of 400-600 mL per day,

a weight of 33 kg, and a blood pressure of 80/40 mmHg. At this point, her relatives asked for a complete cessation of dialysis. The patient died 5 days after withdrawal of the treatment, and her family was satisfied with the treatment.

Case 3

This patient was a 49-year-old female diagnosed with uremia secondary to a multiple myeloma and had been on PD for 15 months. After this PD period, she accepted chemotherapy for recurrent multiple myeloma. Her chemotherapy resulted in nausea, vomiting, muscle pain, and a blood pressure that decreased to 96/80 mmHg. Upon termination of chemotherapy, the patient experienced an additional 13 symptoms, including pain, pruritus, fainting, anorexia, productive cough, and shortness of breath. Her complications were so serious that her CCI score was 10. Her nutritional status deteriorated and was assessed by SGA as a C. Furthermore, she could not afford expensive hospitalization. The patient's Hamilton depression score was 19 and her Hamilton anxiety score was 11. The decision to terminate her dialysis was made by the patient and her husband. The dialysis prescription was modified to consist of a 2.5% glucose solution, with dwelling time 4 hours and 2 exchanges/day (1.7 L/exchange), resulting in satisfactory total fluid output: 500 mL by dialysis ultrafiltration and a urine volume of 350 mL. Intermittent transfusions and clonazepam (0.5 mg, nightly) were administered to alleviate her symptoms. The patient was allowed to stay in her home with her family members and kept in touch with the PD center by telephone. After the palliative intervention, the patient's symptoms improved; but the patient died 2 months later.

RESULTS

General patient characteristics

Three female patients were involved in this study. The length of time that each patient had been on peritoneal dialysis ranged from 7 to 30 months. Two patients made use of the health system to pay for dialysis, EPO, 1, 25-dihydroxyvitamin D3, and phosphate binder; 1 patient paid for her own expenses.

Predictors of poor survival

Each patient displayed 11-16 symptoms. The CCI scores ranged from 10 to 13, and the SGA indicated that 2 patients were severely malnourished and 1 was moderately malnourished; the mean KPS index was <40 for all of the patients. Among these patients, all experienced depression and 2 experienced anxiety, which contributed to the decision to withdraw dialysis.

Post-palliative care intervention

Two patients received a 4.25% glucose solution, 2 received 2.5% glucose solutions, and 1 patient was maintained on a 1.5% glucose solution because of hypotension. The volume instilled at each exchange varied from 1200 mL to 1700 mL, according to the patient's abdominal pressure status. The dialysis exchanges ranged from 1 to 3 times per day, while the dwelling time varied from 2 to 4 h. Skin care, clonazepam, estazolam, and meperidine were used for symptom management. The patients died 5 days to 2 months after dialysis withdrawal.

DISCUSSION

The mortality of patients on maintenance dialysis remains unacceptably high and the patient's quality of life is poor. The hallmarks of the end-stage renal failure patients on peritoneal dialysis include a considerable burden of comorbidity conditions, severe symptom burdens, malnutrition, various complications, poor psychological health status, and an unacceptable quality of life.^[2] When patients are at the end of their lives, medical services must be integrated into healthcare education and practices and used as needed.^[4] Palliative care, which originated from the therapy for cancer, may be the method to maximally alleviate the suffering of these patients and improve their health-related quality of life. Pain and symptom management, advanced care planning, psychosocial and spiritual support to patients and their families, and discussion of the ethical issues associated with dialysis withdrawal decision-making are involved in the process of palliative care intervention.^[5]

Reasons for dialysis withdrawal

In the present case series, cancer, severe comorbidities, malnutrition, chronic failure to thrive, unacceptable quality of life, and gross psychological health issues were the reasons for dialysis withdrawal. These reasons were similar to those reported in other studies.^[2,6] The patients in this case series experienced primary liver cancer, multiple myeloma, and ovarian cancer; these diseases were associated with serious pain, pruritus, and poor nutritional status. Therapies such as chemotherapy and radiotherapy cannot be carried out due to poor renal function and thus increase the psychological stress in those patients. Under these circumstances, the most that can be done is to alleviate the patient's distress to the greatest extent possible.

Survival prediction in pre-palliative care

The possible prognoses should be discussed before the initiation of palliative care. Survival time is also difficult to

be precisely determined and depends on comprehensive factors including age, duration of dialysis, nutritional status, physical function, comorbidity burden, and mental health status. These factors were included in the present study to predict patient outcomes before the start of palliative care. These same measures have also been widely used in determining the start of palliative care in other patients on PD.^[3] Together, a variety of medical assessments can reliably identify patients who have a poor prognosis.^[7] One study showed that preserved nutritional status is an important protective factor during the first year of dialysis.^[7] In the present study, the SGA assessment was C in two patients and B in one patients, indicating that all patients were malnourished. Some authors believe that patients with Charlson indexes of >8 should be placed on palliative care.^[3] In the present study, the Charlson indices ranged from 10 to 13. Among all of the comorbidities, the presence of metastatic solid tumors was the strongest factor predicting poor patient outcomes,^[3] similar to the cases in this report. The KPS indexes for the three patients in the present report were all <40 , a score that indicates complete dependence for daily functioning, which was shown in a previous study to increase the 1-year survival rate by 2.34 times.^[7] Among these patients, all experienced depression and two experienced anxiety, both of which have been proven to be associated with poor survival of dialysis patients.^[7-9] Even though all of the patients in the present report had more than two risk factors indicative of poor outcomes, predicting survival is difficult; therefore, the final decision has to be made by the attending physicians, in consultation with the patient and his or her family, when possible.^[6,8]

Ethical issues in palliative care

The question of who should make the final decision and what should be done after making the decision is difficult to answer. Physicians are the experts in diagnosis, prognosis, and treatment options, but the patients are the experts regarding their histories, values, and preferences.^[2] Patients are entitled to refuse a recommended type of treatment and be informed of the medical consequences of their choices. However, once they have made their choice, they should be treated with respect, dignity, courtesy, compassion, and cultural sensitivity.^[5] The goal of palliative care is to alleviate as much suffering as possible for patients at the end of their lives.

Symptom management in palliative care

Excessive symptom burden is a hallmark of severely ill dialysis patients and correlates with their comorbidity burden and health-related quality of life. Symptom

management is based on alleviating the suffering of terminally ill dialysis patients. In this case series, the number of symptoms demonstrated by each patient was from 11 to 16, which is far higher than that reported for ambulatory (9.7)^[10] and hospitalized (11.5)^[11] cancer patients or for patients in another study on palliative care (10.2 ± 5.0).^[3] This indicates that the patients in this report had more severe symptoms and palliative care was accepted later in this study than in the other studies.

Pain management

Pain, resulting from many different causes is common among dialysis patients and may become severe at the end of life. Some authors have reported that uncontrollable pain may develop suddenly during the last hours of life, even when it had not previously been a problem.^[12] The pain in our patients was treated using clorazepam, estazolam, and meperidine, during the last stages of life. Benzodiazepines, which is widely to treat terminal delirium, reduces the risk of seizures and reduces the inability to close one's eyes, were used in the patients in our series. The use of such agents during clinical care may allow a patient to die, in a dignified manner, during their sleep. However, physicians must be alert to drug accumulation when renal clearance is poor,^[13] adding to the patient's delirium and making additional dialysis necessary.

Pruritus management

Up to 40% of dialysis patients experience moderate to severe pruritus. Secondary hyperparathyroidism, hyperphosphatemia, increased calcium-phosphate deposition in the skin, dry skin, inadequate dialysis, anemia, iron deficiency, and low-grade hypersensitivity to products used in the dialysis procedure have been identified as possible causes of pruritus in dialysis patients.^[14] All of the patients in the present study experienced aggravated pruritus, particularly during their last days of life. Insufficient dialysis is believed to be one of the causes of uremic pruritus. We also observed that pruritus was aggravated after dialysis withdrawal. Chlorpheniramine maleate and hypnagogues were used to alleviate itch in this study, as in other published strategies.^[15] Skin care also played a role in the control of uremic pruritus in these patients. Skin moisturizers and aloe juice were recommended to help maintain a cool, hydrated skin.

Volume overload management

Volume overload was a common problem after dialysis withdrawal. If fluid intake was not restricted or intravenous infusion was not controlled, fluid overload

and pulmonary edema were expected to occur within a short time. If death was expected to occur within several days, hypertonic glucose solutions were recommended to increase ultrafiltration and alleviate symptoms.^[13] In our data, 3 patients except 1 who had hypotension received 4.25% and 2.5% hypertonic glucose solutions, exchanged 1-3 times/d, with the instillation of 1200-1700 mL at each exchange, with a dwelling time of 2-4 h. The aims of this treatment were only to increase water removal, instead of increasing solute clearance, and to relieve the symptoms burden caused by volume overload. This approach significantly maintained the patients' body profile upon death, which is especially important in the Chinese culture.

Psychological intervention

Encouragement is often needed for patients facing imminent death. Dying patients experience not only somatic symptom burdens, but also significant psychological stress. Many individuals do not know where to turn for help and may become increasingly fearful and anxious.^[4] In the present case series, all of the patients experienced severe anxiety and/or depression. Communication between healthcare professionals and the patients' relatives is beneficial after the decision to move to palliative care has been made.^[2] Once the patients and their families understand death as a natural process, they become better able to face death calmly.

Environmental factors can play an important role in promoting a dying patient's comfort. Patients in their last days of life would rather stay at home where they were comfortable and conversant. For patients who maintained a relational capacity, the opportunity to say goodbye may be of paramount importance to them. In addition, some clinicians may also find a patient's interest in making financial arrangements for a spouse's continuing care disconcerting. When hospitalization is necessary, the usual restrictions on visitors should be relaxed as much as possible, especially for patients in private rooms. Music, communication with family members, and other patient preferences should be provided to these patients to create a comfortable, family-type environment.

Communication between the medical staff and the patients was critical, in our experience. Patients do not feel abandoned if continuous verbal care is provided.^[4] The patients in this report were treated in their homes. Therefore, daily phone contact, or twice-weekly home visits, with the patients and their caregivers was necessary. These strategies allowed the patient to enjoy family life,

make final arrangements, and also permitted medical staff to monitor the patient and deliver timely treatment guidance.

CONCLUSIONS

Palliative care for patients on PD is an emerging field. The intermittent use of low doses of hypertonic glucose solutions was beneficial for controlling volume overload. Tranquillizers, skin care and psychological services are necessary in the end stage. Further studies should focus on the management of symptoms after dialysis withdrawal in order to alleviate the suffering of the patients and their families and to improve the quality of life as much as possible.

REFERENCES

1. Davies SJ, Phillips L, Naish PF, Russell GI. Quantifying comorbidity in peritoneal dialysis patients and its relationship to other predictors of survival. *Nephrol Dial Transplant* 2002;17:1085-92.
2. Moss AH, Holley JL, Davison SN, Dart RA, Germain MJ, Cohen L, *et al.* Palliative care. *Am J Kidney Dis* 2004;43:172-3.
3. Weisbord SD, Carmody SS, Bruns FJ, Rotondi AJ, Cohen LM, Zeidel ML, *et al.* Symptom burden, quality of life, advance care planning and the potential value of palliative care in severely ill haemodialysis patients. *Nephrol Dial Transplant* 2003;18:1345-52.
4. Erlen JA. Caring doesn't end. *Orthop Nurs* 2003;22:446-9.
5. Andreucci VE, Kerr DN, Kopple JD. Rights of chronic renal failure patients undergoing chronic dialysis therapy. *Nephrol Dial Transplant* 2004;19:30-8.
6. Birmelé B, François M, Pengloan J, François P, Testou D, Brillet G, *et al.* Death after withdrawal from dialysis: The most common cause of death in a French dialysis population. *Nephrol Dial Transplant* 2004;19:686-91.
7. Joly D, Anglicheau D, Alberti C, Nguyen AT, Touam M, Grünfeld JP, *et al.* Octogenarians reaching end-stage renal disease: Cohort study of decision-making and clinical outcomes. *J Am Soc Nephrol* 2003;14:1012-21.
8. Wai L, Richmond J, Burton H, Lindsay RM. Influence of psychosocial factors on survival of home-dialysis patients. *Lancet* 1981;2:1155-6.
9. Shulman R, Price JD, Spinelli J. Biopsychosocial aspects of long-term survival on end-stage renal failure therapy. *Psychol Med* 1989;19:945-54.
10. Chang VT, Hwang SS, Feuerman M, Kasimis BS, Thaler HT. The memorial symptom assessment scale short form (MSAS-SF). *Cancer* 2000;89:1162-71.
11. Vogl D, Rosenfeld B, Breitbart W, Thaler H, Passik S, McDonald M, *et al.* Symptom prevalence, characteristics, and distress in AIDS outpatients. *J Pain Symptom Manage* 1999;18:253-62.
12. Ferris FD, von Gunten CF, Emanuel LL. Competency in end-of-life care: Last hours of life. *J Palliat Med* 2003;6:605-13.
13. Moraes M, Russo G. Thalidomide and its dermatologic uses. *Am J Med Sci* 2001;321:321-6.
14. Neely KJ, Roxel DM. Palliative care/hospice and the withdrawal of dialysis. *J Palliat Med* 2000;3:57-67.
15. Weisshaar E, Mattered U, Mettang T. How do nephrologists in haemodialysis units consider the symptom of itch? Results of a survey in Germany. *Nephrol Dial Transplant* 2009;24:1328-30.

How to cite this article: Jing L, Wu-Jun X, Feng T. Palliative care for patients with malignancy and end-stage renal failure on peritoneal dialysis. *Indian J Palliat Care* 2014;20:137-41.

Source of Support: Nil. **Conflict of Interest:** None declared.