

Significance of choosing the right solution for peritoneal dialysis.

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Introduction and Significance

Chronic kidney failure is a long-term condition whereby kidney function declines progressively. Decline of kidney function can be diminished by maintaining good blood pressure control and anemia management [1]. Nurses play an important role in teaching, training, assessment, and management of Peritoneal Dialysis (PD) treatment. According to Kazancioglu [2], the PD nurses should continuously assess the quality of the peritoneal dialysis that patients receive and evaluate the treatment outcomes. Reviewing current patient clinical outcomes is critical in assessing quality improvement; therefore, greater attention has to be paid to such outcomes because success of PD treatment will depend very strongly on the efforts and commitment of healthcare teams. Kazancioglu [2] further notes that adult education is affected by chronic diseases and nursing education on peritoneal dialysis is crucial as nurses have to educate and provide guidance to patients who are responsible of their treatment at home. Furthermore, effective peritoneal dialysis can only be achieved by providing suitable dialysis which includes assessment of ultra-filtration, number and timing of exchanges, and residual renal function [2].

Strategic Priority Area

The goal of this quality improvement project is to improve peritoneal dialysis (PD) treatment therapy by increasing nursing knowledge in identifying the right peritoneal dialysis solution according to patient symptoms. Choosing the right solution is of paramount importance because it will improve the patients' condition and in effect potentially decrease their length of stay in hospital, and potentially decrease the progression of current disease conditions. When an inappropriate solution is chosen it can lead to dehydration or fluid overload; the former can cause electrolyte imbalance, confusion, hyperthermia and constipation (fatal if not diagnosed), whilst the latter can lead to shortness of breath, congestive heart failure, swelling of ankles and lower legs, and skin breakdown. This quality improvement fellowship project is aligned with University Health Network's (UHN) current strategic focus on patient safety. In particular, the link between selection of PD solutions and the hospital acquired condition (HAC) of patients' falls. When the patient's fluid removal during peritoneal dialysis is more than is required, the patient will have low blood pressure and this can lead to falls in hospital. As per best practice guidelines on falls and fall prevention, one of the risk factors for falls is hypotension [3].

Many nurses on my unit were not exposed to PD within their formal education programs and were thus unfamiliar with best practice in the care of PD patients. Sufficient knowledge of PD therapy and the appropriate care needed has high potential for improving patients' outcomes since nurses also play a role in patient education. However, even when patients receive adequate education about PD, Kazancioglu [2] contends that they will have difficulty retaining the acquired information. This is evidenced by my own observations when patients sometimes end up in the emergency department with fluid overload or dehydration which could have been prevented by choosing the right solution at the right time.

Given that patients also like to be independent and want to undertake their own therapy at home, Kazancioglu [2] asserts that with supplementary information and choices the patient should be able to choose their own solution which would help achieve effective dialysis treatment— and this would naturally reduce hospital visits and admission.

Current Knowledge

Currently, within my practice area, we provide care for nephrology patients who need renal replacement therapy such as peritoneal dialysis. We also care for transplant patients, some of whom develop chronic kidney disease post-transplant, and as a consequence then require renal replacement therapy. The nephrology and transplant inpatient unit has 58% newly graduated nurses with less than two years of clinical experience. In the majority of cases, these nurses did not have any prior experience providing peritoneal dialysis nor did they receive any formal education on the provision of the therapy. As noted by Kazancioglu [2], since nurses are an integral part of the care team for this patient population, it is essential that they have the education and knowledge required to provide the effective PD treatment that patients require.

Current state of practice was assessed in the provision of peritoneal dialysis by conducting chart audits for peritoneal dialysis documentation. A nursing and nephrology residents' survey was conducted to assess current staff knowledge and learning needs in relation to PD. The nurses were given eight knowledge based questions about peritoneal dialysis. Based on the results, an education workshop was developed and facilitated on peritoneal dialysis treatment for nurses. A separate education session was facilitated for the nephrology residents. The education workshop was thirty to forty minutes long and 30 out of 33 nurses participated. Small pocket cards were also

generated containing information about PD solution selection and signs of symptoms of dehydration and fluid overload. A responsibility profile for PD champions was also developed which included proper documentation of target weight, present weight, and blood sugar levels (if the patient has diabetes) before each exchange, documenting intake and output, practicing as per UHN policies and procedures to prevent peritonitis, chart auditing for right documentation and right solution selection and effectiveness of the therapy, discussing with fellow nurses the chart auditing results, as well as being a resource to colleagues for any knowledge gaps about PD. Other responsibilities include: Helping to ensure 24-hour ultra-filtration rate is documented and highlighted by the PD nurse each night, informing nephrologists about the 24-hour ultra-filtration before noon so that the nephrologists could change the PD order if needed and updating and ensuring accuracy of the PD census. Staff knowledge was assessed post-workshop through evaluation surveys and chart audits.

Inter-Professional Collaboration/Care and Healthy Work Environment

In many cases, nurses follow the doctors' orders without critically reflecting on their assessment of the patient's symptoms and lab values, when providing PD treatment. Even though solutions are ordered by the nephrologists, there is an opportunity for nurses to work with the nephrologists to influence solution selection and ensure patients receive the appropriate therapy. By identifying the right solutions, nurses will be able to collaborate with nephrologists and when nurses receive peritoneal dialysis prescriptions, they will have better knowledge about the peritoneal solution and they will be able to offer meaningful input in decision making and this will ultimately lead to better patients' care.

When nurses have the right knowledge, skills and judgment, they will be able to identify the right solutions which will lead to better patient outcomes, and this can result in improved employee satisfaction, employee engagement and overall job satisfaction.

Results and Discussion

Results post interventions

A total of 22 nurses participated in the survey pre-workshop containing 8 knowledge based questions about PD. Less than 1% of the staff answered all the questions correctly. The post workshop survey consisted of the same 8 questions, and 33 nurses participated and 100% of them answered all the questions correctly.

Qualitative feedback from nurses

Pre-work shop:

1. "Nurses need help and they do not ask when they need it"
2. "I think that the project will lead to quality improvement not just on the unit but across UHN"

3. "This project is very relevant on this floor; it will be a great educational opportunity for novice nurses"
4. "Give nurses more autonomy and an opportunity to use critical thinking in a clinical setting that has been used more often"

Post workshop:

1. "We have the knowledge to assess a patient's needs for proper solution"
2. "I am competent and knowledgeable in assessing the needs for appropriate PD solution"
3. "More confident when issues arise; I will be more of a resource"
4. "Better understanding of the difference in PD bags"

Residents also participated in the survey. Pre-education session, they identified the need for improvement in documentation and a desire to have PD orientation. Post education session, they reported that the education received provided them with a better understanding of solution selection and that documentation was much clearer.

Inter-professional collaboration/care

By identifying the right solutions, the nurses will be able to collaborate with residents when deciding on appropriate peritoneal solutions for patients. When nurses receive peritoneal dialysis prescription they will have better knowledge about the peritoneal solution and will be able to provide input to decision making- this will lead to improved patient care.

Sustainability plan:

1. Posters, quick reference pocket cards and electronic resources available for nurses about PD therapy
2. Ongoing education/ yearly update about PD therapy for nurses by APNE
3. Continued chart auditing by PD nursing champions every Sunday
4. Creation of PD nursing champions and responsibility profile
5. Ongoing education sessions for new residents/ fellows by nurse practitioner

Overall outcomes of this project

1. Increased nursing knowledge about PD treatment
2. Improved nursing assessment of patients' volume status and peritoneal solution selection
3. Increased confidence for nurses in delivering appropriate PD therapy
4. Improved collaboration between nephrology team and nursing with regards to PD solution selection

Indirect outcomes

1. Improved patient clinical outcomes
2. Increased patient safety and satisfaction
3. Decreased length of hospital stay
4. Promotion of early discharge

Conclusion

In Conclusion, significance of choosing the right solution for peritoneal dialysis plays an important role for an effective peritoneal treatment and for improved patient care.

References

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3. http://rnao.ca/sites/rnaoca/files/Prevention_of_Falls_and_Fall_Injuries_in_the_Older_Adult.pdf

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