REVIEW

23(96), March - April, 2019

ISSN 2321–7359 EISSN 2321–7367

Medical Science

Outcomes of patients in Peritoneal Dialysis program: Nursing Practice

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Introduction: **The chronic kidney disease and the beginning of dialysis treatment brings to the fore the circumstances which threatens the physical and psychological aspects of individuals. There may be personal, family and social repercussions therefore the need to relearn how to live, in order to meet the demands of a world permeated by technical procedures, consultations and examinations.** ***Objective:*** **To analyze the outcomes of patients in Peritoneal Dialysis program.** ***Material and methods:*** **Systematic review of the literature, using the keywords: "Peritoneal Dialysis," "Nurse Care" and "Nephrology"; and the PICO method. Between 2013/2018 many electronic databases were selected, including the analysis of eight articles.** ***Results:*** **The analyzed studies revealed that the peritoneal dialysis has good acceptance by patients. The peritonitis is the most frequent conditionate to its failure, followed by infection of the outlet port of the catheter. Besides these factors an advanced age and other comorbidities are also factors for the failure of the peritoneal dialysis.** ***Conclusion:*** **It is important the creation of therapeutic and care protocols, that are effective in controlling these occurrences to obtain a proper evaluation. Although the implant is a medical competence procedure, nursing professionals, especially the nurses, are responsible for the training of maintenance of these catheters, which is of great importance.**

INTRODUCTION

The chronic kidney disease (CKD) and the beginning of dialysis treatment brings to the fore the circumstances which threatens the physical and psychological aspects of individuals, there may be personal, family and social repercussions and they need to relearn to live in order to meet the demands of a world permeated by technical procedures, consultations and examinations. The experience of living with a chronic disease (CD) leads the family to reassess their attitudes and practices, to construct meanings, impelling those living with the person affected by the disease to change their patterns of life and to review one's dreams and expectations before the new reality (1).

The peritoneal dialysis (PD) is essentially a modality of care, which allows the patient to control their own treatment and be aware of their own care. The activities developed by the person in charge include: the procedures of dialysis, take care of the catheter, take the medication, following the diet and the limitation of liquids, and maintain vigilance and attentive observation, preventing complications. In this case, nurses have an important educational role which is toprepare patients and families to take the procedures of dialysis, encouraging the patient to be responsible for their care, with the help of family (2-6, 40, 41).

It is worth emphasizing that this change is not always performed by the will of the family, but by conjuncture. And when by reason of the latter, the possibilities of overload that occur physically, emotionally, socially and financially are higher. However, regardless of the reason which motivates the family to assume responsibility for the care of patients with chronic kidney disease, the coexistence of both does not cease to be a relation, which can be imbued with participation or not. When the relationship involves participation, the family remains present in the life of the patient due to their love and faithfulness, giving themselves to the other person and by being present for her/him. However, when the family assumes this role only by conjuncture, the relationship can develop without participation, in which there is no appreciable involvement between both (7).

The nursing staff involved in both HD sessions, as in treatment, in a general way, in patients with CKD in the intensive care unit (ICU) or in the outpatient clinic. Must identify the individual's needs, providing means of care that aimed at a better adequacy of treatment, teaching how

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to care for themselves and thus ensuring a better quality of life, with competence, ability and intervening when complications occur resulting from treatment, even though these complications may lead to death (8,9).

MATERIALS AND METHODS

A systematic review of the literature is one of the methods of research used in the practice of based-evidence and its purpose is to gather and summarize results of research on a given topic in a systematic and orderly manner, contributing to the knowledge of the theme (10,11). The method used was based on PICO strategy (acronym for patient, intervention, comparison and outcomes). This way it maximizes the inclusion of relevant information in different databases, focusing on the research object and avoiding unnecessary lookups (12).

Observing with rigor all steps required in the usage of this method, the time interval between June of 2018 and October of 2018, a protocol was developed for the identification of studies of interest to this work and that consisted of a research on the search engines: Ebsco and B-ONline, and on the following databases: CINAHL Plus, SCOPUS, PubMed/ MEDLINE, LILACS, Scielo, Web of Science, ScienceDirect, Cengage Learning, Academia Search Complete, Phsychology and Behavioral Sciences Collection, John Wiley & Sons, SportDiscus, The Joanna Briggs Institute, U.S. National Library of Medicine, Directory of Open Access Journals, Springer Science & Business Media and Repository of Scientific Open Access of Portugal.

In this study there were no financial resources and no conflict of interest. For the identification of relevant studies, a search strategy was used using the following descriptors: Peritoneal Dialysis AND Nursing practice AND Nephrology. After meeting all these protocol assumptions, some articles, that did not meet the requirements, were phased out, developing methodically a reductive process.

RESULTS

It has been selected for the study eight articles in Table 1.

Table 1 Description of selected studies and main results of investigation

Study	Author(s)/ Year	Main Results
S1: Appraising the outcome and complications of peritoneal dialysis patients in self-care peritoneal dialysis and assisted peritoneal dialysis: A 5-year review of a single Saudi center.	Jamal Saleh Al Wakeel, Mohammed A Al Ghonaim, Abdullah Aldohayan, Saira Usama, Saad Al Obaili, Ahmad R Tarakji, Mohammad Alkhowaiter; 2018 (13)	-The study suggests that PD patients in our center had an agreeable overall outcome, in terms of patient and technique survival. In addition, the occurrence of infectious and noninfectious complications is comparable to other studies and international guidelines. -Assisted PD showed good patient and technique outcome in comparison to patients with self-care PD. -This suggests that assisted PD can be used a viable option for elderly as well as functionally dependent patients.
S2: Comparison of outcomes between emergent-start and planned-start peritoneal dialysis in incident ESRD patients: a prospective observational study.	Wen-Yi Li, Yi-Cheng Wang, Shang-Jyh Hwang, Shih-Hua Lin, Kwan-Dun Wu and Yung-Ming Chen; 2017 (14)	-In late-referred chronic kidney disease patients who have initiated emergent dialysis via a temporary HD (HD) catheter, post-initiation PD can be a safe and effective as a long-term treatment option. -Nevertheless, due to the potential complications and cost concerns, such practice of PD initiation would better be replaced with a planned-start mode by, employing more effective predialysis therapeutic education and timely catheter placement.
S3: Outcomes of peritoneal dialysis patients and switching to hemodialysis: A competing risks analysis.	Jernej Pajek, Alastair J. Hutchison, Shiv Bhutani, Paul E.C. Brenchley, Helen Hurst, Maja Pohar Perme, Angela M. Summers, and Anand Vardhan; 2016 (15)	-The peritonitis caused failure of the technique in 42%, but the failure of the ultrafiltration was responsible by only 6.3%. -The degree of comorbidity of Davies, creatinine and obesity predicted failure of the technique. -Due to deaths by peritonitis, the technical failure was an independent predictor of risk of death. -When the change and time were successful analyzed, for the HD no adverse impact on survival in the adjusted analysis was found. -However, the HD by a central venous pressure was associated with a high risk of death compared to stay on PD or HD through the fistula. -When the sick survives the first 60 days after the failure of the technique, the change to the HD does not adversely affects the results of the patient. -The nature of vascular access has a significant impact on the result after failure of PD.
S4: Risk factors and outcomes of high peritonitis rate in continuous ambulatory peritoneal dialysis patients: A	Tian, Yuanshi; Xie, Xishao; Xiang, Shilong; Yang, Xin; Zhang, Xiaohui; Shou, Zhangfei; Chen, Jianghua; 2016 (16)	-The peritonitis remains one of the main complications of PD. -A high rate of peritonitis affects the survival and mortality of the patients of continues ambulatory peritoneal dialysis (CAPD). -During the study period of 2917, 5 sick-year, 489 episodes of peritonitis were recorded and the overall rate of peritonitis was 0.168 episodes per patient-year. - It was found the rapid occurrence of peritonitis after CAPD and the low level

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retrospective study.		of serum albumin before the CAPD are strongly associated to a high peritoneal rata (HPR). Moreover, the results verified that the HPR was positively correlated with the failure of the technique. -These results can help identify and direct patients who are at higher risk for HPR status at the beginning of the CAPD and to take measures to reduce the incidence of peritonitis and improve outcomes.
S5: Clinical outcomes and mortality in elderly peritoneal dialysis patients.	Tamer Sakacı, Elbis Ahbap, Yener Koc, Taner Basturk, Zuhal Atan Ucar, Ayse Sınangıl, Mustafa Sevınc, Ekrem Kara, Cuneyt Akgol, Arzu Ozdemır Kayalar, Feyza Bayraktar Caglayan, Tuncay Sahutoglu, Abdulkadir Ünsal; 2015 (17)	-The causes of death included peritonitis and/ or sepsis and cardiovascular events. -The average time of survival of patients was 38.9 ± 4.3 months and median survival rates were 78.8%, 66.8%, 50.9% and 19.5% at 1, 2, 3, and 4 years after the start of PD, respectively. -Advanced age, the presence of additional diseases, the increase of episodes of peritonitis, use of CAPD and low levels of albumin and daily volume of urine (<100 ml) at the beginning of the PD were predictors of mortality. -The survival rates of 97.9%, technique were 90.6%, 81.5% and 71% in 1, 2, 3 and 4 years, respectively. None of the analyzed factors was predictors of survival the technique. -Mortality was higher in elderly patients. - mortality in elderly patients included advanced age, the presence of comorbid diseases, increased episodes of peritonitis, use of CAPD, and low albumin levels and daily urine volume (<100 ml) at the initiation of PD.
S6: Clinical Outcomes in Elderly (More Than 80 Years of Age) Peritoneal Dialysis Patients: Five Years' Experience at Two Centers.	Takanori Otowa, Tsutomu Sakurada, Motonori Nagasawa, Sayaka Shimizu, Takeshi Yokoyama, Nagayuki Kaneshiro, Yusuke Konno, Yugo Shibagaki, Kenjiro Kimura, 2013 (18)	-Many elderly PD patients discontinue PD at home within 2 years after initiating therapy. -In elderly patients, it was important to predict short-term issues at the initiation of PD to facilitate early implementation of social services, such as home-visit nursing-care services, at the time of worsening general condition. -The introduction of appropriate renal replacement therapy for end-stage renal disease patients and more information about PD for people who provide supportive care to end-stage renal disease patients were required.
S7: Clinical Outcomes of Peritoneal Dialysis Patients Transferred from hemodialysis: A Matched Case-Control Study.	Li Zhang, Tao Cao, Zhibin Li, Qiong Wen, Jianxiong Lin, Xiaodan Zhang, Qunying Guo, Xiao Yang, Xueqing Yu, Haiping Mao; 2013 (19)	-In comparison with the patients in the group of transfer, the patients of the group without transfer had a higher residual urinary diary page. -The main reasons for the transfer to the PD were problems of vascular access and cardiovascular disease. -The survival of the patient and technical failure rates did not differ significantly between the groups. -The survival rates of patients in 1, 3 and 5 years were 80.0%, 53.7% and 27.6% in the group of transfer and 89.7%, 60.2% and 43.1% in the group without transfer. -Age (10 years) and serum albumin were independent risk factors for long-term survival in patients with pulmonary tuberculosis. -The relative risk of death or failure of the technique was not significantly increased in patients transferred from the HD.
S8: Similar Outcomes With hemodialysis and Peritoneal Dialysis in Patients With End-Stage Renal Disease.	Rajnish Mehrotra, MD; Yi-Wen Chiu, MD; Kamyar Kalantar-Zadeh, MD; et al, 2011 (20)	-For the patients studied, there was no significant difference in the risk of death among those treated with HD or PD during 5 years. -In addition, the greater risk of death among elderly patients with comorbid charge treated with PD dissipated over time, so that, for the cohort of 2002-2004, there was no significant difference in the risk of death in patients treated with HD or PD. -diabetic patients who started dialysis between 1996 and 2001 and were treated with PD had a significantly greater risk of death, regardless of age or additional comorbidity. -The relative risk of death in diabetic patients treated with PD, who began dialysis during 2002-2004, was lower than that observed in previous years for each of the 4 subgroups. -During this period, there was no significant difference in the risk of death for diabetic patients younger, without additional comorbidity, which were treated with HD or PD. -The greater risk of death for patients with PD has been observed in other 3 subgroups of diabetic patients; -The hazard ratios were lower than those recorded in previous years.

DISCUSSION

According to the articles we can see that living the experience of PD means, for the sick, real feelings of uncertainty, anguish and difficulties, since the beginning of the CKD and knowledge about the need of PD. Drastic changes cause disorders in their way of living, destroying their plans for the future. Then to adapt to the new reality, many are grateful

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and hopeful, in spite of suffering and experiencing difficulties. Studies of PD have shown that the dialysis treatment transforms, in a dramatic way, the life of the patient. In addition to that, the physical symptoms of the disease might lead to emotional and/or social disturbance, due to social isolation and the unpredictable course of the disease. Recent studies have focused on the experience lived by the patient, stressing the importance of understanding about the disease and its treatment. These studies clarify the differences between the conceptions of health of patients and professionals, and the imposition of the clinical importance on the imperative peculiar to each patient (3, 7, 11). These facts are consistent with all studies, especially with the study S6. The DRC is considered a public health problem worldwide, whose incidence and prevalence are increasing. Its treatment generates high cost and complexity, involving investments in cutting-edge technologies and professional qualification. Despite all the technological advances, the prognosis of CKD remains poor and the quality of life is also affected (21-23). The life expectancy of individuals with CKD is reduced by the increased risks of cardiovascular disease and this burden falls on both, the individual and society (24). These facts corroborate with the studies S1, S2 and S5.

The PD is a type of renal replacement therapy used in the treatment of CKD patients requiring dialysis which uses the peritoneum, the membrane that is permeable, and dialysis solutions in the peritoneal cavity for the purification of blood through the transport of solutes (25-28). The PD homecare offers benefits to patients, especially the elderly, children, people with locomotion difficulties and the dependent patients, because it is a treatment performed at home and there is no need to travel to the center of dialysis. In addition, the hemodynamic variations are smaller in relation to HD, because the treatment is usually carried out every day and avoid the vascular access, which many times can be a concern. It is noteworthy that this therapy preserves the residual renal function for a longer time, important prognostic factor for the clientele in dialysis (29, 30). These facts corroborate with the studies S1, S2 and S6.

In addition, when compared to the quality of life, it was noticed that the PD is as efficient as the HD. In a review study published in 2015, which analyzed the publications, related to this topic in the last decade, in 11 countries, the PD was more favorable to the quality of life in seven of them, the other four; there were no differences between HD and PD. That relates to the measurement of pain showing that it is lower in patients on PD compared to those of HD (31-33), as demonstrated in the study S7 and S8.

However, for the realization of this therapy, in the case of the patient or their caregivers do not comply with certain requirements necessary for its implementation. This may present a risk to health such as the development of an infectious process of the peritoneum called peritonitis. Among the indispensable requirements cited above, it is worth mentioning: housing conditions, minimally adequate, cleaning and antisepsis of the environment, motivation to perform this therapy and the mastery of the technique by patients (34, 35). Facts that are corroborate the studies S2, S3 and S4.

In this way, it can be inferred that the success of treatment depends, mainly, on the patient or their caregiver, who needs to maintain the treatment and follow the instructions on the various technical and clinical aspects of this therapeutic modality (36). We can verify these facts in all the analyzed studies. The nurse acts in this process by means of systematic actions of guidance, teaching self-care, with support and monitoring of training, especially the abilities of a technical nature and strengthening of other emotional nature.

In addition, the nurse is responsible for the evaluation of nursing made next to individuals who perform the PD. This evaluation concerns the pathophysiological aspects, social, emotional, highlighting the desire of the patient in performing the PD, manual dexterity, the ability to perform self-care, household conditions, the history of abdominal surgeries, plus the discipline, motivation and skills to perform the dialysis procedures (36, 37). Facts that are in agreement with the studies S1, S6. In addition to the evaluation, the nurse in the wake of PD is also responsible for the therapeutic education, which aims at the empowerment of patients and/or their caregivers for the realization of the dialysis procedure in the household, described in the study S6. The technique and patient survival have significantly improved despite increases in patient age, cardiovascular comorbidity, and end-stage renal disease, caused by diabetes. Although older age, diabetes, and cardiovascular comorbidities are not factors that are easily modifiable to improve PD outcomes, results at our institution are encouraging in an era of declining PD utilization (38). Facts that are corroborate the studies S1, S3, S5, S7 and S8.

The impact of the type of vascular access in mortality of patients incidents in HD studies have found that the use of CVC is directly associated with reduced survival, especially during the first 90 days of therapy. Furthermore, there is a greater risk of bacteremia sepsis and hospitalizations in patients using CVC when compared to patients that use arteriovenous fistula (AVF), graft or PD thus. The PD seems to be an option for the urgent initiation of chronic dialysis. This study reinforces and assists the advantage of a chronic renal patient who does not start his therapy using CVC, thus preserving the vascular access and the residual renal function, which can reduce the morbidity and mortality of these patients (39, 40). This data is in agreement with a Study S2.

CONCLUSION

The chronic kidney disease is a disease with epidemiological relevance and its treatment coated with complexity in either medical aspects or in its form of organization. The peritoneal dialysis modality has proved to be a model of interaction - Patient care teams and the privileged area of reinforcement of self-care as a motor for greater therapeutic success and rehabilitation of the patient. From the analysis of the data, it was possible to apprehend the evolution of individuals submitted to PD in the household.

It was possible to verify that the peritonitis is the variable constraint more frequent, followed by infection of the outlet port of the catheter, which reflects the need for the creation of protocols of therapeutic and care that are effective in controlling these occurrences. To assess that although the implant is a procedure of medical competence there are nursing professionals and especially the nurses responsible for the training of maintenance of these catheters. Besides these factors related to an advanced age and other comorbidities, there are factors for the failure of the PD. The nurse nephrologist provides an enhanced care and a distinctive look regarding the clinic of renal patients, because it enables nurses to act with competence and scientific skills that culminates with a specific knowledge and precision. The systematization of nursing assistance becomes more detailed and the nurse identifies more easily the complications generated by the dialysis methods, guaranteeing a more agile and efficient solution. The specific technical procedures are also favoring the improvement in customer care kidney failure. This specialized scientific knowledge ensures a more planned assistance that reflects on the safety of the patient. The fear of dying or having to make HD is present constantly and the trust of the patient in

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the nurse minimizes their fears, promotes greater adherence to treatment, as well as building their confidence so that the patient is able to perform self-care in trade of scholarships and care which is relevant to the bandage.

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Article History
Received: 14 December 2018
Accepted: 20 January 2019
Published: March-April 2019

Citation
ALVES Ana Isabel; FREITAS Carlos; BARRETO Luís; GONÇALVES Ricardo; VIVEIROS Abel; FARIA Sidónio; BARRETO Licínia; VIEIRA Sofia; MARQUES Aurélio. Outcomes of patients in Peritoneal Dialysis program: Nursing Practice. *Medical Science*, 2019, 23(96), 173-178

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