Nursing diagnoses in chronic renal failure patients on hemodialysis

Diagnósticos de enfermagem em pacientes renais crônicos em hemodiálise

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Keywords
Nursing assessment; Nursing diagnosis; Renal dialysis/nursing; Renal insufficiency/nursing; Renal insufficiency, chronic/nursing

Descritores
Avaliação em enfermagem; Diagnóstico de enfermagem; Diálise renal/enfermagem; Insuficiência renal/enfermagem; Insuficiência renal crônica/enfermagem

Submitted
November 5, 2013

Accepted
February 11, 2014

Abstract

Objective: To identify the most frequent nursing diagnoses in chronic renal failure patients on hemodialysis.
Methods: A cross-sectional study including 178 patients, selected by convenience sample, consecutively recruited. For data collection, interview guides and physical examination were used. An individual process of clinical judgment for the nursing diagnoses was performed and, for better accuracy, the results obtained underwent a process of paired review among the authors.
Results: Twenty-four nursing diagnoses were identified, of which the most frequent were: risk for infection (100%); excessive fluid volume (99.4%); and, hypothermia (61.8%).
Conclusion: The most frequent diagnoses identified were included in the safety / protection and nutrition domains of NANDA-I.

Resumo

Objetivo: identificar os diagnósticos de enfermagem mais frequentes em pacientes renais crônicos em hemodiálise.
Métodos: Estudo transversal com a inclusão de 178 pacientes, selecionados por amostragem de conveniência do tipo consecutiva. Para a coleta foram utilizados roteiros de entrevista e exame físico. Foi realizado um processo individual de julgamento clínico dos diagnósticos de enfermagem e os resultados obtidos passaram por processo de revisão de forma pareada entre os autores, para maior acurácia.
Resultados: Identificaram-se 24 diagnósticos de enfermagem, sendo os mais frequentes: risco de infecção (100%); volume de líquidos excessivo (99,4%); e hipotermia (61,8%).
Conclusão: Os diagnósticos mais frequentes identificados estão inseridos nos domínios segurança/proteção e nutrição.

DOI: http://dx.doi.org/10.1590/1982-0194201400009

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Conflicts of interest: No conflicts of interest to declare.

Introduction

Chronic renal disease is considered a worldwide public health problem. It is diagnosed by decreased glomerular filtration associated with loss of regulatory, excretory and endocrine functions of the kidney. When the glomerular filtration rate reaches values below 15 mL/min/1.73m^2, the patient needs dialysis therapy for survival.[1] Among the treatment modalities, hemodialysis is highlighted, in quantitative terms, which involves the removal of nitrogenized toxic substances from the blood and liquid excesses retained in the tissues of the body.[2]

In the hemodialysis unit, the implementation of the nursing process is fundamental, as it allows nurses to develop a specific plan of care for the patient, the identification and monitoring of adverse effects of treatment, such as the complications from the disease, and the possibility of the development of educational programs for promotion, prevention and treatment.[3]

Nursing diagnoses are clinical judgments about actual or potential individual, family or community responses to health problems / life processes. They are scientific interpretations of collected data, used to guide the planning, implementation and evaluation of nursing care.

The objective of this study was to identify the most frequent nursing diagnoses in chronic renal failure patients on hemodialysis.

Methods

This was a cross-sectional study performed in a dialysis clinic, located in the northeastern region of Brazil.

The population consisted of 330 patients enrolled, regularly monitored and undergoing hemodialysis in the referred clinic. The sample size calculation was based on the formula for finite populations, taking into account the level of confidence of 95% (Z_{∞}=1.96), a sampling error of 5%, population size and prevalence.[4] The sample consisted of 178 individuals. The selection of patients was obtained through convenience sampling of a consecutive type.

The inclusion criteria were: presenting a medical diagnosis of chronic renal disease; being enrolled and undergoing dialysis in the referred clinic; age between 20-65 years; and having adequate physical and mental conditions to participate in the research at the time of data collection. The exclusion criteria were: chronic renal failure patients with other non-related renal diseases that could alter the profile of the human responses of these patients.

For data collection an interview and a physical examination form were used, developed based on Taxonomy II of NANDA International, administered during the hemodialysis session, in the months of October of 2011 to February of 2012.

For structuring of the data, an individual process of clinical judgment for the nursing diagnoses was performed, conducted in two phases: the analysis, which involved the categorization of data and the identification of gaps; and, a synthesis, which was formed by grouping, comparison, identification and relationship of the etiologic factors. After this step, the results passed through a process of paired revision among the authors, to assure a consensual judgment, aiming, therefore, for higher accuracy. Following this, the diagnoses were recorded in a database developed in Microsoft Excel®. A statistical program was used for analysis of the data, which generated descriptive values and the p-value of the Kolmogorov-Smirnov test of normality, in order to verify if the data distribution followed a normal distribution.

The development of the study followed the national and international standards of ethics in research involving human beings.

Results

The nursing diagnoses, distributed by frequency in table 1, had a median value of seven, a minimum of three and a maximum of 15. The value of the Kolmogorov-Smirnov test equal to p <0.001, showed an asymmetrical distribution (non-normal).

Table 1. Nursing diagnoses

Diagnoses	Present n(%)	Absent n(%)
1. Risk for infection	178(100)	0(0.0)
2. Excess fluid volume	177(99.4)	1(0.6)
3. Hypothermia	110(61.8)	68(38.2)
4. Fatigue	84(47.2)	94(52.8)
5. Ineffective self-health management	76(42.7)	102(57.3)
6. Impaired dentition	68(38.2)	110(61.8)
7. Risk for falls	66(37.1)	112(62.9)
8. Impaired physical mobility	63(35.4)	115(64.6)
9. Sexual dysfunction	51(28.7)	127(71.3)
10. Disturbed sensory preception: visual	50(28.1)	128(71.9)
11. Insomnia	45(25.3)	133(74.7)
12. Deficient knowledge	33(18.5)	145(81.5)
13. Chronic pain	28(15.7)	150(84.3)
14. Disturbed sensory preception: auditory	27(15.2)	151(84.8)
15. Ineffective protection	23(12.9)	155(87.1)
16. Situational low self esteem	22(12.4)	156(87.6)
17. Dressing self-care deficit	20(11.2)	158(88.8)
18. Acute pain	20(11.2)	158(88.8)
19. Impaired skin integrity	12(6.7)	166(93.3)
20. Constipation	10(5.6)	168(94.4)
21. Disturbed sensory preception: tactile	5(2.8)	173(97.2)
22. Risk for injury	5(2.8)	173(97.2)
23. Diarrhea	2(1.1)	176(98.9)
24. Imbalanced nutrition: less than body requirements	2(1.1)	176(98.9)

Chart 1 shows the related / risk factors and defining characteristics identified for the nursing diagnoses with relative frequency above 50%.

Chart 1. Nursing diagnoses, related / risk factors and defining characteristics

Diagnoses	Related/ Risk factors	Defining characteristics
Risk for infection	Invasive procedures. Chronic disease	
Fluid volume excess	Compromised regulatory mechanisms. Excess fluid intake.	Azotemia; intake more than output; weight gain over short period of time; decreased hemoglobin; decreased hematocrit; electolyte imbalance
Hypothermia	Exposure to cool environment	Body temperature below normal range

Discussion

The limits of the results of this study are related to the type of non-probability sampling in which the researcher selects the elements to which he has access, assuming that they may, in some way, represent the studied universe.

This study addressed the steps of assessment and nursing diagnosis of the nursing process in the hemodialysis sector. To investigate and diagnose health problems in hemodialysis patients provides a basis for the implementation of the achievement of positive health outcomes.

Brazilian authors corroborate the results, establishing the nursing diagnoses of patients in the hemodialysis sector, with an emphasis on: risk for infection; excess fluid volume; situational low self-esteem; ineffective protection; noncompliance; acute pain; disturbed sensory perception; insomnia; chronic sorrow; deficient knowledge; fear; impaired physical mobility; risk for powerlessness; risk for ineffective renal perfusion; activity intolerance, sleep pattern, disturbed and ineffective health maintenance.[5-8] This corroborates the data found in the current study.

The nursing diagnosis of *risk for infection* is defined as being at risk for being invaded by pathogenic organisms and is slotted in domain 11 (safety / protection) in the infection class of NANDA International.

In order to conduct hemodialysis, the implantation of a vascular access device is necessary. Arteriovenous fistula is the primary vascular access and nursing care for its maintenance and integrity are important for the early detection of inflammatory signs that suggest infection.[7]

The second most frequent diagnosis in the study was *excess fluid volume*. This diagnosis is found in domain two (nutrition) and class five (hydration) of NANDA International, and is defined as increased isotonic fluid retention.

Similar data to this research were found in a study that established nursing diagnoses in hospitalized patients undergoing hemodialysis through the signs and symptoms: edema, excessive weight gain in the interdialytic period, hypertension, tachypnea, pulmonary congestion, heart failure and uremic syndrome.[8]

Excess fluid in patients with renal disease on hemodialysis may lead to complications, such as hypotension and cramps due to the removal of fluids and electrolytes, as well as cardiovascular changes that may be severe and irreversible.[9] Therefore, the nursing staff should be alert to the possible complications that can result in patients with excess fluid volume.

The nursing diagnosis of *hypothermia*, slotted within domain 11 (safety / protection) and in class

six (thermoregulation) of Taxonomy II of NANDA International, has as its definition a body temperature below the normal range.

Hypothermia was detected as a potential complication during dialysis sessions. It is known that the low temperature appears in hemodialysis patients because of cooling of the blood through the extracorporeal circulation, since the line of blood and / or dialysate solution are exposed to room temperature, which causes heat loss by convection.[10]

The usual room temperature of the dialysis sector of the sample remained around 21 to 23°C. Thus, promoting the further warming of the body temperature to maintain it around 37°C is important nursing care for the patient's comfort.

Thus, through the identification of nursing diagnoses in patients on hemodialysis, it is possible to strengthen their applicability in clinical practical, since the diagnoses relate to specific interventions to be implemented in the plan of care of the patients.

Conclusion

Twenty-four nursing diagnoses were identified in chronic renal failure patients on hemodialysis, with the most frequent being: risk for infection, excess fluid volume and hypothermia; these are slotted in the safety / protection and nutrition domains.

Acknowledgements

The National Council of Science and Technology (CNPq) for financing of the research, process 483285/2010-2.

Collaborations

Frazão CMFQ and Silva FBBL contributed to the project design, analysis and data interpretation. Medeiros ABA and Sá JD collaborated with drafting the article and critical review of the relevant intellectual content. Lira ALBC conducted and approved the final of the version to be published.

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