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CLÍNICA

Nursing Diagnoses in Patients Undergoing Hemodialysis

Diagnósticos de Enfermagem em pacientes submetidos à hemodiálise

Diagnósticos de Enfermería en Pacientes Sometidos a Hemodiálisis

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Keywords: nursing; renal dialysis; nursing diagnoses.

Palabras clave: enfermería; diálisis renal; diagnóstico de enfermería

Palavras chave: enfermagem; diálise renal; diagnóstico de enfermagem

ABSTRACT

Objective: To determine the most common nursing diagnoses in patients under hemodialysis treatment, based on the nomenclature of the North American Nursing Diagnosis Association - International (NANDA-I) 2009-2011.

Method: This is a quantitative, descriptive and exploratory study, accomplished in a hemodialysis clinic in the State of São Paulo, Brazil, with a sample of 50 patients. The study was approved by the Committee of Ethics in Research of the University of Vale do Paraíba, under protocol No. H236/CEP/2009.

Results: We identified 24 most frequent diagnoses, of which six were found in 100% of the sample studied; they were: impaired urinary elimination; impaired skin integrity; risk of infection; risk of ineffective renal perfusion; impaired physical mobility; and risk of electrolyte imbalance.

Conclusion: Determining nursing diagnoses common to subjects submitted to hemodialysis will help nursing professionals deal with chronic renal patients care by providing tools for planning assistance.

RESUMEN

Objetivo: Determinar los más comunes diagnósticos de enfermería en pacientes sometidos a tratamiento de hemodiálisis, basados en la nomenclatura de la North American Nursing Diagnosis Association - International (NANDA-I) 2009-2011.

Método: Este es un estudio cuantitativo, de tipo descriptivo exploratorio, realizado en una clínica de hemodiálisis en el estado de São Paulo, Brasil, con una muestra de 50 pacientes. El estudio fue aprobado por el Comité de Ética de la Investigación de la Universidad del Vale do Paraíba, bajo el protocolo N° H236/CEP/2009.

Resultados: Se identificaron 24 diagnósticos más frecuentes, seis de los cuales se encontraron en 100% de la muestra estudiada; estos eran: eliminación urinaria perjudicada; integridad de la piel perjudicada; riesgo de infección; riesgo de perfusión renal ineficaz; movilidad física reducida; y riesgo de desequilibrio electrolítico.

Conclusión: La determinación de los diagnósticos de enfermería comunes en los sujetos sometidos a hemodiálisis ayudará a los profesionales de enfermería en la atención a los pacientes renales crónicos proporcionando herramientas para la planificación de la asistencia.

RESUMO

Objetivo: determinar os diagnósticos de enfermagem mais frequentes em pacientes submetidos a tratamento hemodialítico, baseados na nomenclatura da *North American Nursing Diagnosis Association-Internacional* (NANDA-I) 2009-2011.

Método: trata-se de estudo quantitativo, do tipo descritivo exploratório, realizado em uma clínica de hemodiálise no interior do estado de São Paulo, com uma amostra de 50 pacientes. O estudo foi aprovado pelo Comitê de Ética em Pesquisa da Universidade do Vale do Paraíba sob número H236/CEP/2009.

Resultados: foram identificados 24 diagnósticos mais frequentes, sendo seis encontrados em 100% da amostra estudada: eliminação urinária prejudicada, integridade da pele prejudicada, risco de infecção, risco de perfusão renal ineficaz, mobilidade física prejudicada e risco de desequilíbrio eletrolítico.

Conclusão: o estabelecimento dos diagnósticos de enfermagem comuns aos sujeitos submetidos a hemodiálise auxiliará o profissional de enfermagem envolvido no atendimento aos pacientes renais crônicos, fornecendo ferramentas para o planejamento da assistência.

INTRODUCTION

Chronic kidney failure (CKF) is characterized by progressive and irreversible loss of kidney function, the main causes of diabetes mellitus and hypertension[1].

Hemodialysis is a process of filtering and blood clearance of not bearable substances such as creatinine and urea, which need to be eliminated from the body deficient in carrying out this function[2]. The procedure is carried out two to four times per week, lasting from two to four hours.

The dedication to the treatment of CKF by hemodialysis entails limitations that interfere with the daily routine of patients, such as job loss, changes in body image, dietary restrictions and hydric[3].

Thus, the nurse in charge of the nursing team has a fundamental role to coordinate assistance, to improve the quality of life for these patients, to personalized care in this process[4].
The nursing staff during hemodialysis develops a continuous observation of the patient, preventing many existing complications. In this sense, it highlights the role of nurses rising early nursing diagnoses (ND) and the implementation of appropriate interventions[2].

To ensure smooth resumption of the patient is essential to implementation of the stages of the Nursing Process (NP) by the nurse, pointing out that one of the essential aspects of their performance in the hemodialysis unit is the provision of systematic care based on a benchmark theoretical[5].

However, the process of development of NP, which is also an instrument approach between the nurse and patient, often collides with the structure of the units providing service due to the small number of professionals, responsible for a large number of patients per session, leading to non-realization of nursing process[5].

Although many nurses have encountered barriers in some institutions for the implementation of the NP, it is perceived by the results of scientific studies that the implementation based on a taxonomy in general the North American Nursing Diagnosis Association - International (NANDA I) meets the needs of CKF patients, supporting and ensuring quality of care provided[5,6].

Conscious nursing should act to prevent and control complications, and be attentive to the biopsychosocial aspects experienced by the subject focus of their care, developing their operations more efficiently with the implementation of the NP in their daily practice.

Thus, this study aimed to determine the nursing diagnoses based on the nomenclature of the North American Nursing Diagnosis Association - International (NANDA I) from 2009-2011[7], more frequent in patients undergoing hemodialysis.

METHOD

There was conducted a quantitative study, of exploratory descriptive type, in a hemodialysis clinic in a town in the State of São Paulo.

The sampling technique was non probabilistic by convenience, which included all patients older than 18 years old undergoing hemodialysis through an arteriovenous fistula (AVF), which signed a consent form after receiving information about the study objectives, ensuring anonymity and freedom to withdraw at any time of realization.

There were considered as exclusion criteria, patients on hemodialysis by double lumen catheter, which had psychiatric problems or even those with communication difficulties.

For data collection visits were conducted in the hemodialysis unit of the clinic day and time determined by the institution, previously scheduled with the nurses responsible for the industry, from February to April 2010.

For the initial stage of research, data collection instrument, which had as its guiding principle for drawing the Theory of Self-Care Orem, proposed by Araújo (2003) in his dissertation was used[8]. This instrument consists of a detailed history of nursing, containing aspects related to the health of the patient, limitations imposed by the disease and physical examination. After collection of the history of nursing, the results were organized, analyzed and identified the diagnoses according to the NANDA I 2009-2011[7].

The study was approved by the Research Ethics Committee of the University of Vale do Paraíba, under the number Protocol H236/CEP/2009 on February 24th, 2010.

RESULTS

There were included 50 individuals, 27 (54%) were male and 23 (46%) females, aged between 20 and 70 years old, and 17 (34%) of the sample were aged between 41 and 50 (Table 1). Among men the average age was 55,8 years old and for women 50,5.

Regarding marital status, 39 (78%) live with their mates (Table 1).

Chronic disease was the most prominent Hypertension (HBP) observed in 38 (76%) patients. Most individuals surveyed (94%) were non-smokers and/or drinkers (Table 1).

The timing requirement for dialysis patients ranged from 1 month to 13 years, with 18 (36%) of subjects in treatment between 6 and 10 years (Table 1). The average treatment period was 4 years and 10 months.

Table 1 - Distribution of socio-demographic variables of the 50 patients investigated. SP, 2010.

Variables	n	%
Gender		
Male	27	54
Female	23	46
Age (years)		
20 – 30	5	10
31 – 40	1	2
41 – 50	17	34
51 – 60	13	26
61 – 70	8	16
70 or +	6	12
Marital status		
Single	3	6
Married	39	78
Separated	4	8
Widower/Widow	4	8
Pre-existing diseases		
HBP	38	76
HBP+ Diabetes Mellitus	12	24
Personal history		
Smoking	3	6
Alcoholism	0	0
Time of dialysis		

1 month - 1 year	12	24
2 - 5 years	13	26
6 - 10 years	18	36
11 years or +	7	14

Considering the cases studied, 24 different nursing diagnoses were identified, according to NANDA I classification 2009-2011, six of them being observed in 100% of the sample, they are: risk of electrolyte imbalance, urinary elimination impaired physical mobility impaired, risk for ineffective renal perfusion, risk of infection and impaired skin integrity (Table 2).

It was observed that from the 24 nursing diagnoses, 17 (70,8%) are classified as real: excessive fluid volume, impaired urinary elimination, constipation, impaired sleep patterns, impaired ambulation, impaired physical mobility, fatigue, activity intolerance, sensory perception (visual), impaired memory, ineffective sexuality pattern, health behavior prone to risk, lack of adherence, impaired dentition, impaired skin integrity, impaired oral mucosa and acute pain, and seven (29,2%) were diagnostic of risk: unstable blood glucose, electrolyte imbalance risk, risk of constipation, risk of ineffective renal perfusion risk, situational low self-esteem, risk of infection and risk of falling (Table 2).

Table 2 - Distribution of the diagnoses found in 50 patients investigated. SP, 2010.

Nursing diagnosis	N	%
Risk of electrolyte imbalance	50	100
Impaired urinary elimination	50	100
Impaired physical mobility	50	100
Risk of renal perfusion ineffective	50	100
Risk of infection	50	100
Impaired skin integrity	50	100
Excessive fluid Volume	42	84
Impaired oral mucous membrane	35	70
Risk of constipation	32	64
Disturbed sensory perception (visual)	32	64
Impaired dentition	32	64
Fatigue	24	48
Ineffective sexuality patterns	24	48
Activity intolerance	23	46
Degraded sleep pattern	20	40
Risk-prone health behavior	20	40
Impaired memory	19	38
Acute pain	19	38
Risk for situational low self-esteem	14	28
Constipation	14	28
Risk of unstable blood glucose	12	24
Lack of adherence	10	20
Walking impaired	7	14
Risk of falls	7	14

As the predominant areas between diagnoses raised, it highlights the number 4, related to activity and rest with six (25%) cases, followed by 11 area, related to

safety and protection of the patient, which is five (20,8%) cases. Domains nutrition and elimination/exchange, had three diagnoses (12,5%) each (Table 3).

Table 3 - Distribution of the number of nursing diagnoses according to their domains. SP, 2010.

Domains	N	%
2 – Nutrition	3	12,5
3 – Elimination/Exchange	3	12,5
4 - Activity/Rest	6	25
5 - Perception/Cognition	2	8,3
6 – Self-Perception	1	4,2
8 – Sexuality	1	4,2
9 - Coping/Tolerance to Stress	1	4,2
10 - Principles of Life	1	4,2
11 - Safety/Protection	5	20,8
12 – Comfort	1	4,2
Total	24	100

We chose to determine the main factors and defining characteristics or risk factors of the six ND submitted by all subjects investigated, and were presented separately licensed for clarity on actual diagnoses (Table 4) and risk (Table 5).

Table 4 - Presentation of actual nursing diagnoses present in all the samples studied, the main defining characteristics and key factors. SP, 2010.

Nursing diagnoses	Defining characteristics	Related factors
Impaired urinary elimination	- Dysuria; - Urinary retention.	- Multiple causes.
Impaired physical mobility	- Limited range of motion; - Slow movements; - Limited capacity to carry out the thick motor skills.	- Decreased muscle strength; - Activity intolerance; - Prescribed restrictions of movements.
Impaired skin integrity	- Disruption of skin surface.	- Mechanical factors; - Changes in water condition; - Unbalanced nutrition; - Change of turgor pressure.

Table 5 - Presentation of Nursing Diagnoses present throughout the sample and its major risk factors. SP, 2010.

Nursing diagnoses	Risk factors
Risk of electrolyte imbalance	- Renal dysfunction; - Water imbalance.
Risk of renal perfusion ineffective	- Kidney disease; - Hypertension; - Diabetes Mellitus; - Advanced age; - Treatment-related side effects

Risk of infection	- Invasive procedures; - Chronic disease.

DISCUSSION

Hemodialysis is a treatment for replacement of blood, palliative filtering therefore not fully recover the health of the patient. The nurse, through the survey of nursing diagnoses, creates individualized systematization of work, offering a better quality of life for the patient[9].

The results of this study comes against the recent scientific literature, which indicates predominance of men aged 41 to 50 years undergoing hemodialysis, and who abstain from use of alcohol, as alcohol may contribute to the elevation of pressure arterial and mean duration of dialysis treatment of 4 years and 10 months, similar to the time mentioned in a previous study of 3 years and 2 months[9].

The Nursing Diagnosis identified here also come against recognized by other studies among chronic renal failure patients[4,9,10]. For example, in the study that analyzed the ND of patients undergoing kidney transplantation in outpatient treatment, among the 38 nursing diagnoses identified six equal the same diagnoses identified in this study, among the 10 that were above the 75th percentile, they are risk for infection, disturbed sensory perception (visual), disturbed sleep patterns, fatigue, acute pain and ineffective sexuality pattern[10].

Thus, in this study, six were from the field activity and rest, especially in this group the diagnosis of impaired physical mobility present in the population at this point it is worth mentioning the complications from diabetes and other limitations of the disease.

Often the AVF brings changes in the daily lives of patients with renal disease due to limitation of possible moves, and, in many situations, it is necessary to conduct further surgeries to obtain other hits[11].

Three found ND referred to the nutrition field, and, among them, the risk of imbalance fluid volume was present throughout the investigated sample volume and excessive fluid in 84% of subjects. Recent study pointed overhydration as a frequent problem in hemodialysis units leading to increased blood pressure and consequent complications during the procedure[12].

Thus, there is frequent use of antihypertensive drugs in many treatment centers, while others combine dietary salt restriction in an attempt to minimize this reality. Recent study followed for one year two groups, one (n = 190) submitted to salt restriction and other (n = 204) with the use of antihypertensive agents. They concluded that patients undergoing dietary salt restriction substantially used less antihypertensive agents and had lower interdialytic weight gain[13].

Therefore, nursing should be an important ally of the patient in an attempt to propose and enforce measures that allow them to control better your nutrition in relation to salt, fluids and nutrients.
In this regard, strengthening ND found on risk of constipation and constipation, an investigation aimed to assess the interdialytic weight gain and its relationship to

malnutrition. The authors found no significant correlations between interdialytic weight gain and indicators of malnutrition in young people , however, in the population over 65 years, the interdialytic weight gain was associated with insufficient food intake, gastrointestinal disorder, functional disability, accompanied by muscle and fat loss in the elderly[14].

Reinforcing aspects related to food intake, we emphasize the oral mucosa ND impaired, impaired dentition. Study evaluated the oral health of CKF patients undergoing conservative treatment (through medication and diet) and hemodialysis had lower prevalence of caries, although more supragingival plaque, the greater number of teeth with attachment loss and tooth loss , compared to healthy population (controls)[15].

Given these findings and aware of the lack of information and population access to dental services, nurses should establish links with public dental health services, paying attention to this aspect of the population, which can compromise their quality of life and direct them to appropriate follow-up, reflected in improved nutritional aspects of hemodialysis patients.

Subsequently, two other diagnoses that affect the entire sample studied were impaired urinary elimination, elimination belonging to the domain and exchange, and the risk for ineffective renal perfusion, the field activity and rest.

Often urine output ceases completely in dialysis patients, but some patients develop presence of residual urine, defined as the production of at least 250 ml of urine per day. Researchers sought to determine the association of the presence of urine with quality of life, mortality and inflammation by means of a cohort study. Among the 734 patients evaluated, 84% residual urine present, and the residual kidney function was associated with improved survival and quality of life, smaller percentage of inflammation and use of erythropoietin; suggesting that this information must be constantly monitored in patients undergoing hemodialysis[16].

Another aspect to be highlighted is the control of water intake, one of the most frequent complications identified, associated with interdialytic weight gain, and that should be observed by the team[4].

Again the nurse plays a critical role in the proper maintenance of the treatment, which reflects significantly on the quality of life of patients, because as pointed out in this and other research on the subject, many of the diagnoses observed in this category of patients are associated with difficulty following the treatment required by the disease[17].

Within the domain safety and security highlight the ND risk of infection and impaired skin integrity.

The AVF is the main vascular access for patients on hemodialysis and its maintenance depends on the care provided by the nursing staff and the patient[4].

The multiple punctures increase the risk of infection, need to be attentive nursing to the characteristics of the ideal access, which should possess adequate blood flow to the completion of dialysis, ensuring long life and, consequently, low

complications[4]. Moreover, it is common to observe AVF that do not work, scars present on current hits and scars of lost fistulas [18].

The ND impaired sensory perception (visual), occurred 64% of the sample investigated in the present study, the decrease in visual acuity is often related to a decrease in quality of life, impairment of daily activities of patients and accidental drops. Previous study found that 95.6% of patients undergoing hemodialysis over 65 years old had visual acuity at lower levels than those expected for their age[19].

Thus, it is thought that the preventive nursing performance as the visual changes will prevent other ND detected as impaired ambulation and risk of falls, which affected 14% respectively of the sample of this research.

Treatment of chronic renal patients still imposes several complications, thus making the establishment of diagnoses and nursing interventions essential to obtain better quality of life [9].

The nurse stands out as team coordinator and must meet the individual needs of the patient, ensuring a multidisciplinary work, and a better match to the hemodialysis treatment, because although coping with kidney disease are lonely, they develop during treatment with the intense relationship with the nursing staff [20].

CONCLUSION

The main diagnoses highlighted in this research were: urinary elimination impaired, impaired skin integrity, risk of infection, risk of ineffective renal perfusion, impaired physical mobility and risk of electrolyte imbalance.

It is noticed so that CKF patients have many nursing diagnoses in common, requiring professional nursing planning to meet the care needs of patients.

To that nurses should use the NP to plan and implement their care in a systematic way, continuously evaluating this process.

This study allows a reflection as common to patients undergoing hemodialysis, which generated the proposed diagnostic features in this research, which will help nursing professionals involved in the care of the chronic renal failure patients, providing tools for care planning.

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