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PHARMACOLOGICAL PROFILE OF PEOPLE WITH CHRONIC KIDNEY FAILURE IN HEMODIALYSIS: A STUDY IN A CITY IN THE WESTERN AMAZON, BRAZIL

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ABSTRACT

Objective: to analyze the pharmacological profile of patients with Chronic Renal Insufficiency (CRF) undergoing hemodialysis in a dialysis unit in a municipality in Rondônia, Western Amazon, Brazil. ***Method***: It is a descriptive, applied, transversal research with a quantitative approach. The research was carried out at the Dialysis Centerof a city in the State of Rondônia, Western Amazonia Brazil. The sample included 92.3% of patients assisted at the Dialysis Center. Data were collected from two sources: data from medical records composed of variables of socio-economic characteristics and data from patients composed of variables of clinical and pharmacological characteristics. ***Results***: Of the 120 patients who were part of the sample, 63% are men and 37% women; 75% of patients are between 18 and 58 years old; 82% are married; 58% receive sick pay; 55% have a monthly income of 1 to 2 minimum wages; 70% live in other locations outside the headquarters of the Dialysis Center and low education predominates. Systolic arterial hypertension (SAH) is the major cause of CRF (57%); The relative frequency of SAH as the underlying disease (62%), SAH comorbidity (78%), hematocrit change (98%), anemic corrective MP (98%), access condition = fisture (95%), report of another pathology (73%), alteration of phosphorus (48%) and phosphorus correcting PM (48%) were the main clinical characteristics found. Dialysis time from 6 months to 2 years (46%) and more than 2 years to 5 years (38%) prevails. As for pharmacological characteristics, 100% use drugs; 60% understand the guidelines; 50% receive pharmaceutical guidance; 80% know how to describe the drugs; 95% seek medical assistance; 80% follow the prescriptions; 60% use 3 to 4 medications daily. ***Conclusions***: The reality of patients with CRF in this study does not differ much from other Brazilian realities. It is essential the role of the pharmacist who with their attributes can influence the understanding of the importance of treating underlying diseases, early diagnosis and the practice of self-care. The results presented show several aspects of the population of patients with CRF in the Amazon scenario, which will serve to support decisions to improve care for these patients, including the creation and long-term maintenance of a comprehensive registration system with data and information from socioeconomic, clinical and pharmacological characteristics, in addition to the monitoring and monitoring of patients in an environment outside the treatment center, the analysis and dissemination of epidemiological data on patients with CRF undergoing renal treatment at the Dialysis Center.

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INTRODUCTION

Chronic renal failure (CRF) is a slow and insidious disease that results from the irreversible reduction in the quantity and function of the nephrons, the main functional unit of the kidneys. The destruction of nephrons can be a consequence of specific underlying etiologies, such as genetic abnormalities, autoimmune diseases, glomerulonephritis or exposure to toxins. It can also result from a set of progressive mechanisms caused by inflammatory processes associated with systemic arterial hypertension and diabetes[1]. For Brunner and Suddarth[2], chronic renal failure (CRF) is a progressive and irreversible deterioration of renal function, in which the body's ability to maintain metabolic and hydroelectrolytic balance fails, resulting in uremia or retention of urea and other nitrogenous waste in the blood. According to Santos[3], chronic renal failure (CRF) is a morbid condition that modifies the normal cellular actions of the kidneys, altering body homeostasis. The progressive loss of kidney function leads to abnormalities that may threaten the individual's life. The patient with CRF presents, in addition to kidney damage, other covered pathologies that impair the condition, making treatment difficult. According to Ribeiro *et al*[4], renal failure is defined when the kidneys are not able to remove metabolic degradation products from the body or perform regulatory functions. The substances normally eliminated in the urine accumulate in the body fluids as a result of impaired renal excretion, and lead to a disruption in the endocrine and metabolic functions, as well as hydroelectrolytic and acid-base disorders.

The term chronic renal failure (CRF) refers to a syndromic diagnosis of progressive and generally irreversible loss of renal clearance function, that is, of glomerular filtration. It is a clinical syndrome caused by the progressive and irreversible loss of kidney functions. It is characterized by the deterioration of the biochemical and physiological functions of all systems of the body, secondary to the accumulation of catabolites (uremic toxins), alterations in the hydroelectrolytic and acid-base balance, metabolic acidosis, hypovolemia, hyperkalaemia, hyperphosphatemia, anemia and hormonal disorder, hyperparathyroidism, infertility, growth retardation, among others[5]. For Oliveira, Guerra and Dias[6], chronic renal failure (CRF) consists of kidney damage and progressive and irreversible loss of kidney functions, thus, glomerular function, tubular function and endocrine function. In its most advanced stage the kidneys are unable to maintain normality. CRF is divided into six functional stages according to the patient's degree of renal function. These stages range from the stage where individuals do not have kidney damage and maintain their normal kidney function, but fit within the risk group, to stage five that includes the individual with kidney damage and end-stage or dialysis kidney failure. According to Santos; Pontes[7], CRF is defined by glomerular filtration below 15 ml / min. For Hostetter; Rennke and Brenner[8], chronic renal failure (CRF) is a clinical syndrome resulting from progressive kidney injury, of diverse etiology. Regardless of the initial nature of the insult, once a certain degree of kidney damage has been reached, affecting more than 50% of the nephrons, functional deterioration of the organ is inevitable, even if the initial aggressor factor is removed. Diniz[9]; Harmon[10] claim that, as severely damaged nephrons are unable to regenerate, functional recovery does not occur. There is then a slow and inexorable worsening of kidney function and, with it, the progressive loss of homeostatic and metabolic functions exerted by the kidneys. Conservative treatment of patients with renal failure aims to slow the progression of the injury and adopt measures to prevent and / or compensate for changes caused by reduced renal function. Therapeutic measures should be started early in the course of renal dysfunction[9; 10; 11]. Brunner and Suddarth[2] report that the common signs and symptoms of renal failure (IR) are: cardiovascular manifestations, dermatological symptoms and other systemic manifestations, observed in diagnostic findings that there is a reduction in the glomerular filtration rate, sodium and water retention, acidosis, anemia and calcium and phosphorus imbalance that leads to serious complications and potential for kidney failure.

According to Brenner; Clarkson[12], the therapy of patients with RI tends to delay the onset of terminal kidney disease, which, exceptionally, turns out to be fatal. Treatment consists of hemodialysis, outpatient chronic peritoneal dialysis and kidney transplantation. It is noted that patients with CRF undergoing dialysis often need a wide range of medications[13; 14; 15]. According to Brunner; Suddarth[16], the urinary system plays several essential roles for normal body homeostasis. These functions include the formation of urine; excretion of waste products; regulation of the excretion of electrolytes, acids and water; and self-regulation of blood pressure. Riella[17] makes reference to the kidneys, which according to this author, the kidneys are two organs, resembling the shape of a reddish-brown bean grain, located in the retroperitoneal space, one on each side of the spine, in such a way that its longitudinal axis runs parallel to the psoas major muscle. Brunner; Suddarth[16] add that at this point, serum creatinine and urea increase, the kidney loses its ability to concentrate urine and anemia develops. The patient may report polyuria and nocturia. The third stage, called end-stage kidney disease (DRET), as the name reports, is the final stage of chronic kidney failure, and occurs when there are less than 10% of nephrons functioning normally. All normal kidney regulatory, excretory and hormonal functions are severely impaired. DRET is evidenced by elevated serum levels of urea and creatinine, as well as by electrolyte imbalances. When the patient reaches this point, dialysis is usually indicated. Many of the symptoms of uremia are reversible with dialysis. For Ribeiro *et al*[5], in advanced forms of CRF, virtually all organs and tissues suffer from their effects. There is an accumulation of toxic substances in the internal environment, either by defective excretion or by excess production due to metabolic disorders. CRF causes changes, including anasarca, bone changes, changes in mental acuity and sleep rhythm, changes in intraocular pressure, cardiac changes and hypertension. CRF can be treated initially through conservative therapies, such as: dietary treatment, medication and blood pressure control.

The dialysis program will be indicated when conservative treatment is not able to maintain the patient's quality of life and when there are important signs and symptoms of uremia[5;18]. For Higa[19], patients with CRF on a hemodialysis program are led to live daily with an incurable disease that requires them to undergo a painful and long-term treatment that causes, along with the evolution of the disease and its complications, limitations and even greater changes and of great impact, which affect both the quality of life itself and that of the family group. Every patient's life routine is modified due to the limitations imposed by the treatment of the disease, and brings changes that include dietary restrictions, difficulties to remain in employment, reduced social activities, difficulty in communication between family members, concerns about the younger ones, mainly, with marriage, procreation and sexual desire, limited life expectancy, showing depression and fear of death because it is a chronic kidney disease. And, finally, loss of self-esteem and alteration of self-image. In the face of so many and profound changes, the patient is often marginalized by family and friends who do not understand or, at other times, do not accept a "patient without a cure"[20]. Currently, CRF is a disease with a high rate of morbidity and mortality worldwide. The progressive increase in the incidence of CRF is partly due to the increase in the prevalence of some chronic-degenerative diseases, especially systemic arterial hypertension (SAH) and diabetes mellitus (DM)[21]. Maintaining hemodialysis patients involves high costs and is a matter of great concern on the part of government agencies, which, in Brazil, subsidize 95.0% of this treatment[22]. According to Chaves *et al*[23] people with chronic diseases suffer changes in the lifestyle they were used to, such as social isolation, reduced physical activity, need for adaptation, an ambiguous feeling between fear of living and dying, and loss of autonomy related to constant treatment that can occur at home, in clinics and in some cases there is hospitalization. The patient's reactions come from his social, cultural context and from his personal beliefs and values. In a relatively short period of time, the outlook for patients with chronic renal failure has changed completely. However, several aspects of the CRF approach, in all age groups, need to be improved[24]. Countless times, patients are diagnosed and referred late, implying the absence of vascular access,

various metabolic disorders and cardiovascular complications at the time of dialysis initiation[25]. According to Burkart[26], despite the better quality of dialysis treatment, mortality rates are high. Dialysis patients have a life expectancy 16% to 35% lower than the general population, matched for age and sex. According to Soares *et al*[24], the perspective of patients with CRF in underdeveloped countries is much more bleak. Public resources directed to health are, in general, scarce and poorly used. There is a correlation between per capita income and the prevalence of treated CRF patients. In other words, there is an unknown proportion of patients who are undiagnosed or for whom treatment is not available. For Chugh and Jha[27], in addition to the insufficient number of dialysis centers, there is a lack of equipment and material, dialysis machines are obsolete, capillary reuse is not standardized and the remuneration for the health team is inadequate. For Soares *et al*[24], there is still a complex range of factors that need to be analyzed, aiming at a better approach for patients with CRF. Among these, better dialysis adequacy and increased kidney transplantation (new drugs and more accurate immunosuppression schemes). All of these factors have been intensively studied in recent years, resulting in a slow but persistent improvement in the quality of treatment and in patient survival. For Burkart[26], among the factors that have received little attention are the quality and systematization of conservative treatment, that is, before renal replacement therapy. According to a study "Treatment modalities for ESRD patients. USRDS. United State Renal Data System", in the pre-dialysis phase, measures should prioritize intervention in risk factors and comorbidities that may accelerate the loss of renal function, combined with an appropriate nutritional approach, the careful assessment of anemia, metabolic disorders and acid-base, in addition to educational and support programs for family members and patients[28]. Added to this is the guarantee of an adequate vascular access, and the indication of renal function replacement therapy in "optimal" time.

Given the potential benefits of conservative treatment, multidisciplinary assessment and treatment of chronic renal patients, at an early stage of renal function deterioration, is recommended. Unfortunately, it is estimated that only 20% receive some specialized support before dialysis starts[29]. Soares *et al*[24] points out that the delay in referrals almost always results in emergency dialysis, leading to longer hospitalization at the beginning of the process, associated with increased morbidity and mortality. Late referral also prevents a series of measures, such as the appropriate choice of treatment method to replace renal function, preparation and psychological support for patients and family members, generating the onset of traumatic dialysis, without adequate vascular access, with all its consequences negative. Thus, the establishment of interdisciplinary teams specialized in the approach to CRF is a desirable process that, associated with the awareness of the primary care team for an early referral, can contribute to improving the quality of life and survival of patients with this chronic disorder. Still in relation to treatment with hemodialysis, Sánchez *et al*[30]; Martínez *et al*[31] explain that it is the most common substitute modality, characterized by a complex therapeutic regime that directly influences the quality of life and the valuation and physical condition, since it negatively interferes with well-being, occupational functioning, spirituality and health and work activities. In this sense, Rudnicki[32] explains that hemodialysis treatment entails several changes, bringing, in addition to physical limitations, a variety of feelings that have a noticeable impact on psychological and emotional aspects. Thus, people with chronic renal failure undergoing hemodialysis initially have negative affects in relation to treatment, since it is continuous and does not lead to the solution of the problem.

Hemodialysis treatment is the most common substitute modality, characterized by a complex therapeutic regimen that directly influences quality of life and recovery and physical condition, as it negatively interferes with well-being, occupational functioning, spiritual and health life and work activities[30;31]. In this sense, Rudnicki[32] explains that hemodialysis treatment results in several changes, bringing, in addition to physical limitations, a variety of feelings that have a noticeable impact on psychological and emotional aspects.

Thus, people with CRF undergoing hemodialysis initially have negative affects in relation to treatment, since it is continuous and does not lead to the solution of the problem. According to Silva *et al*[33], those undergoing hemodialysis treatment must try to overcome the difficulties inherent to the disease and, for this, they must resort to coping strategies, or coping, that is, behavioral and cognitive skills used to control demands arising from the internal and external environment. This would make it possible to manage the stressful event, as well as to control, reduce or eliminate emotional responses. Among these techniques, we highlight family support, attachment to religion or belief, denial, avoidance and resilience[33]. Sesso; Gordan[34] announce that although the importance of having reliable data on RRT is recognized, the systematic collection of data from dialysis patients has been a challenge for most countries, especially in developing countries. According to these authors, there are countless difficulties in obtaining this information, particularly of an economic nature, so that it is feasible to maintain a research team working in an organized system of collection, analysis and dissemination of data in the long term[34]. Paraguassu-Chaves *et al*[35] already warned about the difficulties in doing scientific research in the Brazilian Amazon.

These difficulties are confirmed by the Brazilian Society of Nephrology[36]. According to the SBN, the need to have data on patients in Renal Replacement Therapy (RRT) is imperative, as they are fundamental for the knowledge of the reality of dialysis treatment and the identification of problems in the provision of therapy that need to be addressed. The problem of chronic renal failure is undoubtedly of concern throughout the world, in Brazil and in Rondônia, in the Western Amazon. Relationships between health and other aspects of economic, social and political life in the region are increasingly prominent and complex. Consequently, the practice of health research, a fundamental aspect in the improvement of health systems and policies, is a determining factor in the development of the Brazilian nation. Health, and health research, are urgent needs of our developing Brazil, and in particular of the Amazon region[37]. Regional health needs in the Amazon must be considered when drafting the National Health Agenda, with a view to producing material and procedural goods aimed at the development of social policies at all government levels. Therefore, research is fundamental for the construction and / or (re) targeting of public health policies. The assessment of the health situation in a given region allows to characterize, measure and explain the profiles of health-disease needs and problems of that population; to know possible social responses organized in front of them; identify health needs, priorities and policies, as well as assess the impact of interventions; formulating strategies for promotion, prevention, control, and building prospective healthscenarios, is what the Brazilian Ministry of Health advocates[37]. Considering the need to know a contextual reality of patients with chronic renal failure in an Amazonian part, this study aims to analyze the pharmacological profile of patients with chronic renal failure (CRF) in hemodialysis assisted in a dialysis unit in a city of Rondônia, Western Amazon, Brazil.

METHODS

This is a descriptive, applied, cross-sectional study with a quantitative approach. The research was carried out at the Dialysis Center of a municipality in the State of Rondônia, Western Amazonia Brazil. The sample included 120 patients. The subject and the sample of the research were the patients on hemodialysis, obeying the inclusion criteria: having time on hemodialysis treatment greater than 6 months, being over 18 years old, having cognitive and verbal capacity and agreeing to participate in the research by signing the Term Informed Consent Form. It was adopted as an exclusion criterion to have treatment time of less than 6 months, to be under 18 years old and not to have signed the Free and Informed Consent Form. Data collection took place through two sources: data from medical records and data from patients. In relation to the data in the medical record, the dialysis clinic was first exposed to the board of directors of the dialysis clinic for the purpose and benefits that the research brings both to patients, to science and to the improvement of the service offered by the

Dialysis Center. After authorization by the technician responsible, data relevant to patients undergoing hemodialysis were collected from medical records, such as: treatment time, age, sex, city of origin, education, basic disease and medications they use, results of laboratory tests in the last 6 months, among other aspects socioeconomic conditions. In laboratory tests, only results with biochemical changes were analyzed, such as: hematocrit, hemoglobin, urea pre and post hemodialysis, sodium, potassium, calcium, phosphorus, glycemia, alkaline phosphatase, total proteins and fractions, vitamin D, total cholesterol and fractions, triglycerides, between others. The collection of patient data was carried out with the application of a questionnaire after signing the informed consent form. 120 patients of both sexes were interviewed, 37% female and 63% male. The interviews were conducted with about 1 to 5 patients per day in different periods. A structured instrument was applied to the research subjects, consisting of the following variables: medication used; compliance with the guidelines provided by the doctor; times to take medications; recommended medication doses; medical assistance when symptoms appear irrelevant or in extreme cases, and possible self-medication process. The variables were presented in the form of relative frequencies. The research complied with ethical aspects as required by the Ministry of Health to conduct research with human beings in accordance with resolution 466/12, of the National Health Council. The research project was submitted to the Ethics and Research Council (CEP) of a private Higher Education Institution. Each patient was given a free and informed consent form, with clarifying information necessary for their participation, demonstrating the relevance of the research and giving the patient freedom to participate or not, ensuring confidentiality of information as well as anonymity. The procedures performed ensured reliability, privacy and protection of the participant's image.

RESULTS AND DISCUSSION

The survey included a sample of 120 (92.3%) chronic renal patients on hemodialysis out of a total of 130 patients written on hemodialysis during the study period and who met the inclusion criteria. According to the analogy of the information collected from medical records and the questionnaire applied to patients, the data were classified into: socioeconomic characteristics, clinical characteristics and pharmacological characteristics with an emphasis on the most prevalent variables.

Socioeconomic Characteristics: Of the 120 patients who were part of the sample, 63% are men and 37% women. The data referring to sex in Renal Replacement Therapy (RRT) by hemodialysis is confirmed by Cherchiglia *et al*[38] when stating that patients who start RRT on hemodialysis are predominantly male. In the study by Sesso *et al*[39] the distribution of dialysis patients by sex / gender showed 57.7% in men and 42.3% in women. Ribeiro *et al*[40] in a research carried out in a capital of a state in the Northeast region of Brazil, found that the majority of patients are male (67.2%). In the study by Santos[3] in Ariquemes, there was also a male predominance with 63.3%. The predominance of males in renal treatment found in this study is similar to those found in other studies carried out in the Region and in Brazil. The distribution by age group revealed that 75% of the patients are in the age group of 18 to 58 years old, therefore, a relatively young population. These data corroborate with the age groups noted in the study by Santos[3], which had a prevalence in the age of 39-58 years 43.4%; followed by 18-38 years old 30%; 59-78 years old 20% and greater than 78 years old 6.6%. According to Marques; Pereira; Ribeiro[41]; Barbosa; Junior; Bastos[42]; Rolim *et al*[43]has evidence on the average age of patients undergoing renal therapy in Brazil, ranging from 49.3 to 53.9 years. Ribeiro *et al*[40] found a predominance of patients with CRF in the age group 40 to 59 years old (40.6%). Sesso *et al*[39] revealed in their study that 63.6% of the patients are between 19 and 64 years old. According to Simonetti; Ferreira[44] after 40 years of age, there is a physiological functional decline that increases throughout life and can be influenced by several factors such as physical, organic, genetic, lifestyle, environment, educational and socioeconomic conditions. The individual then is predisposed to acquire chronic diseases. Regarding marital status, 82% of patients are married, 9% single, 5% widowed and 4% separated / divorced. Santos[3] in his study at the Ariquemes Dialysis Center in Rondônia, revealed that 70% of patients are married, 23.4% single, 3.3% widowed and 3.3% separated. According to Peres *et al*[45]; Castro *et al*[46]; Barbosa; Junior; Bastos[42] the majority of patients with Chronic Renal Insufficiency (CRF) in Brazil are married, followed by single patients. This picture is confirmed by Ribeiro *et al*[40], who found 60.9% of married patients undergoing treatment in a nephrology unit.

Regarding the occupation of patients, 58% receive sickness benefits, 20% are retired, 8% are unemployed, 9% are self-employed and 5% are employed and working. These findings are similar to those found by Santos[3] who, in a research in Ariquemes, found that 50% of hemodialysis patients receive sickness benefits, 27% are retired, 13% are unemployed, 6.7% are self-employed and 3.3% are employed and working. Regarding the patients' income, 1 to 2 minimum reference wages predominate (55%), followed by 2 to 5 minimum wages (30%) and more than 5 minimum wages with 15%. The findings of Santos[3] with 52% with 1 to 2 minimum wages, 30% with 2 to 5 minimum wages and 15% with more than 5 minimum wages, are similar to those found in the present study. Ribeiro *et al*[40] in the study "Epidemiological profile of patients with chronic renal failure undergoing hemodialysis therapy" found a predominance of patients with 1 to 2 minimum wages (67.2%), this income arising in most cases of retirement benefits associated with sickness aid. It is noteworthy that 32.8% of patients who have an income below 1 minimum wage, report not having any type of income (housewives and unemployed). Factors related to the disease process in chronic kidney patients were evidenced, demonstrating that 80% have personal income below 2 minimum wages, which characterizes low socioeconomic level[40]. It can be said that this is a group of sick people with low economic Power. The family composition predominates with up to 5 people in the family (70%) and more than 5 people in the residence with 30%. These findings are corroborated by Santos[3] who found the same relative frequency.

Of the patients with chronic renal failure treated in this study, the majority (70%) live outside the city and municipality of Ariquemes, where the Dialysis Center is located, and only 30% live in the city of Ariquemes itself or in the municipality of Ariquemes. As for the patients' place of residence, Santos[3] found that 66.7% live outside the city and the municipality and only 33.3% live in the city of Ariquemes. These data are very similar. This means that the Dialysis Center, despite being located in the city of Ariquemes, serves patients in the surrounding cities and other locations. Unlike the current study, Ribeiro *et al*[40] found 64% of patients on hemodialysis in a capital city in a state in the Northeast of Brazil residing in the city where the Dialysis Center is located. The evaluation of the level of education found a frequency of 20% with incomplete primary education; 25% with complete elementary school; 25% have completed high school; 20% with incomplete high school and 10% with a college degree. In the study by Ribeiro *et al*[40] also found a low level of education among patients with CRF. According to Ribeiro *et al*[40] the education of the individuals surveyed was 53.1% with incomplete or complete primary education and a rate of 328% of illiterate and semi-illiterate. Thus, it was possible to observe, through patient reports, greater difficulty in understanding the recommended guidelines, given by the health team and the extension of the hemodialysis procedure, which can further compromise the health status of the patient being treated. Already in the study of Lara; Sarquis[47] developed in Curitiba, capital of the state of Paraná, showed that approximately 67% of the sample obtained only access to basic education. Santos[3] quantified 36.7% with incomplete primary education; 23.3% with complete elementary school; 16.7% with complete high school and 13.3% with incomplete high school. Patients with incomplete elementary education added to those with complete elementary education reaches 45% and with complete high school and incomplete high school it reaches 45% of the patients with chronic renal failure in this study. It can be said that the predominant level of education is low (Table 1).

Table 1. Socioeconomic characteristics

Gender	Fr%	Resident with how many people	Fr%	Place of residence	Fr%
Men	63	With up to 5 people	70	Ariquemes	30
Women	37	+ of 5 people	30	Does not reside in Ariquemes	70
Age Range	Fr%	Marital Status	Fr%	Income	Fr%
18-38	25	Married	82	1 to 2 minimum wages	55
39-58	50	Not married	9	2 to 5 minimum wages	30
59-78	20	Separated/ Divorced	4	+ 5 minimum wages	15
+ que 78	5	Widower	5		
Education	Fr%	Occupation	Fr%		
Incomplete elementary school	20	Receives sickness AID	58		
Complete primary education	25	Retirees	20		
High school	25	Unemployed	8		
Incomplete high school		Freelancers	9		
Graduated	10	Employees working	5		

Fr% Relative frequency

Table 2. Clinical features of CRF

Main causes	Fr%	Dialysis time	Fr%
Systolic Arterial Hypertension (SAH)	57.0	6 months to 2 years	46.0
Polycystic Kidney Disease (DRPA)	12.0	+ 2 years to 5 years	38.0
Diabetes Millitus (DM)	12.0	+ from 5 to 8 years	9.0
Systemic Lupus Erythematosus (SLE)	4.0	+ from 8 to 11 years	4.0
Others	15.0	+ 11 years	3.0
Clinical features	Fr%		
SAH as the underlying disease	62.0		
SAH comorbidity	78.0		
Alteration of Hematocrit	98.0		
M.P Anemic Corrector	98.0		
Access Condition = Fistula	95.0		
Reports Another Pathology	73.0		
Phosphorus Alteration	48.0		
M.P Match Broker	48.0		

Fr% Relative frequency

Table 3. Pharmacological characteristics

Use medicines	Fr%	Understand the Guidelines	F%	Receive Pharmaceutical Guidance	F%
Yea	100.0	Yea	60.0	Yea	50.0
No	0.0	No	40.0	No	50.0
They know how to describe medicines	F%	Know Indications	F%	Comply with prescriptions	Fr%
Yea	80.0	Yea	80.0	Yea	80.0
No	20.0	No	20.0	No	20.0
Seek Medical Assistance	F%	Makes use of self-medication	F%	Makes use of Teas / Medicinal Plants	F%
Yea	95.0	Yea	15.0	Yea	20.0
No	5.0	No	85.0	No	80.0
Daily medication quantity	F%				
3 to 4 daily	60.0				
Other quantities	40.0				

Fr% Relative frequency

According to Santos[3], CRF causes important limitations to patients and this often leads to early retirement and retirement due to therapy. Patients with chronic renal failure on hemodialysis need to undergo RRT three times a week for a period of 3 to 4 hours, thus hampering assiduous work by these patients. Barbosa Studies; Junior; Bastos[42] and de Rolim *et al*[43] show that the vast majority of Brazilian patients on Renal Replacement Therapy (RRT) have low purchasing power, which should influence their quality of life, with regard to obtaining medicines and food. According to Lara; Sarquis[47] the population undergoing hemodialysis is inactive, from an economic point of view, as it has no source of income, which can greatly compromise its treatment, since work activity has a fundamental role in man's life. Still according to Lara and Sarquis[47], low-income conditions are justified by the difficulty of maintaining employment, due to the time spent on hemodialysis. Many patients use at least 6 hours a day for treatment, because after 4 hours of hemodialysis, it takes approximately 2 more hours for the recovery of immediate symptoms after treatment, which results in the patient's difficulty maintaining a bond employment during your treatment.

Clinical Features: Systolic arterial hypertension (SAH) is the major cause of CRF in the studied population, representing a relative frequency of 57% of cases, followed by polycystic kidney disease (PADD) 12% and diabetes millitus (DM) 12%, systemic lupus erythematosus (SLE) 4% and other diseases with 15%. In the study by Santos[3] in this same dialysis center, 50% of the cases of systolic arterial hypertension (SAH) were found to be the major cause of CRF, followed by polycystic kidney disease (PADD) with 14% and diabetes millitus (DM) with 12% . In the research by Ribeiro *et al*[40] it was found that the main underlying diseases for CRF are arterial hypertension (38%), followed by the association of two pathologies - hypertension and diabetes - which corresponds to 23%, with only diabetes corresponds to a total of 8%. In addition to these, other diseases are related to loss of renal function, such as glomerulonephritis (6%), polycystic kidneys and lupus with 5% each. With regard to other causes that add up to 15%, the following stand out: kidney stones, pyelonephritis, medication abuse, renal agenesis, bilateral renal hypoplasia and accidents that led to the loss of one of the kidneys. Studies by Associations of chronic kidney patients[48] showed an approximation with results already obtained in other publications, which point as main causes of CRF arterial hypertension, diabetes mellitus, family history of CRF, advanced age, glomerulopathies, polycystic kidney disease, autoimmune diseases , systemic infections, recurrent urinary infections, obstructive

uropathies and neoplasms. Numerous studies have pointed out that arterial hypertension and diabetes are responsible for about half of the pathologies of patients undergoing dialysis in Brazil. Hypertension, related to diabetes, is closely linked to insulin-mediated water and sodium reabsorption and sympathetic hyperactivity, as well as to an increase in the availability of intracellular calcium. Insulin has a direct vasodilatory effect and resistance to this effect also contributes to high blood pressure, causing an overload on the kidneys, which leads to the loss of its functions[48;49].

According to studies by Andreoli and Nadaletto[50]; Maragno *et al*[51]; Silva and Souza Junior[52] among the main causes of chronic kidney diseases are systemic arterial hypertension (SAH), diabetes mellitus (DM), kidney diseases and uropathies, such as recurrent urinary infections, obstructions and urinary stones. For the Brazilian Society of Nephrology[36], diabetes is a basic disease in 25.7% of CRF cases in Brazil, occupying second place, right after Systemic Arterial Hypertension (SAH). For Zanetti *et al*[53], attention to diabetes and its complications is a priority for public health worldwide. In this sense, prevention of diabetes mellitus must be carried out at different levels of health care, by detecting individuals at risk - primary prevention, identifying undiagnosed cases - secondary prevention, and by treating individuals already affected by the disease in order to prevent acute and chronic complications - tertiary prevention. According to Teixeira; Zanetti; Pereira[54] one factor to consider is that the long-term progression of diabetes mellitus leads to complications involving several organs, called micro and macrovascular complications, that is, nephropathies, retinopathies, neuropathies and cardiovascular complications, which impose well-founded nursing care in the comprehensive approach to the person with diabetes. As for SAH, Bortolotto[55] states that SAH and kidney function are related, and hypertension can be both the cause and the consequence of a kidney disease. SAH is present in most kidney diseases, mainly in glomerulopathies and diabetic nephropathy. The prevalence of SAH, determined when kidney disease is detected, increases progressively as renal function deteriorates, so that in the terminal or dialysis phase of CRF almost all of the kidney patients are hypertensive. According to this same author, the main mechanism of SAH in CRF is related to the progressive loss of renal capacity to excrete sodium, resulting in saline and volume overload.

According to Ribeiro *et al*[5], there are other pathologies that make up a group of diseases, which together, represent a higher percentage in relation to the underlying diagnosis diseases of CRF. For this author and collaborators, the other causes of CRF that can be mentioned are urinary tract diseases, vascular diseases, medications, toxic agents, environmental and occupational agents (lead, cadmium, mercury and chromium), but diabetic nephropathy and hypertension are the most common causes. the most common causes, representing 23.2% of the total, the highest percentage in relation to these pathologies, according to a survey by the Brazilian Society of Nephrology[36]. In the census prepared by the Brazilian Society of Nephrology[36], glomerular diseases represent 15.7% of the total as a disease of basic diagnosis of CRF. Carmo *et al*[56] confirms the statement by demonstrating that glomerular diseases are among the main causes of dialysis therapy worldwide. On this subject, the National Kidney Foundation[57] report that glomerulonephritis is a group of diseases that cause inflammation and damage the kidney's filtering units and that these disorders end up contributing to kidney failure.

The main clinical characteristics presented by the patients are: Relative frequency of SAH as a base disease (62%), SAH comorbidity (78%), alteration of the hematocrit (98%), anemic corrective MP (98%), access condition = fisture (95%), report of another pathology (73%), alteration of phosphorus (48%) and phosphorus correcting MP (48%). Santos[3] found the following findings: SAH as a base disease (50%), SAH comorbidity (70%), alteration in hematocrit (96.7%), anemic corrective MP (96.7%), access condition = fisture (93.3%) , report of another pathology (73.3%), alteration of phosphorus (46.6%) and phosphorus correcting MP (46.6%). The findings of the two studies find some similarity. Sesso[58] in his study reports a 35% proportion of arterial hypertension followed by diabetes with 29% as a diagnosis of CRF. Analyzing the findings of this research, Santos[3] points out that the main changes in the exams were: decreased hematocrit values as well as hemoglobin and elevated ferrentin; phosphorus elevation; the prescriptions found in the medical records were in accordance with the alterations in the exams. No prescriptions for patients' daily use medications were found in the medical records. Dias; Camargo[59] observed that SAH represents the highest percentage as a basic disease of CRF in relation to DM, GN and other pathologies, being represented by 35.8% of the total. Correction of anemia was more frequent than decreased phosphorus in these patients. This is due to the fact that drugs used as anemic helpers or correctors such as alpha-erythropoietin and iron hydroxide are administered to patients after or at the end of the HD section; while the Sevelamer phosphorus corrector is delivered to the patient for use at home, thus it is not possible to say whether they really use the medication correctly[3].

Dialysis time prevails from 6 months to 2 years (46%), more than 2 years to 5 years (38%) and more than 5 years to 8 years (9%), from 8 to 11 years (4%) and more than 11 years of treatment (3%). Santos[3] found the prevalence of dialysis time from 6 months to 2 years (44.3%), more than 2 years to 5 years (36.7%) and more than 5 years to 8 years (10%). Ribeiro *et al*[40] found similar results. Patients with a hemodialysis treatment period of up to 1 year corresponds to 38%, between 3 and 4 years of treatment there has been a decline to 17% and only 3% remain using the hemodialysis machine for more than 10 years. With unspecified cause, deaths related to complications inherent to treatment, kidney transplants and transfers to other hemodialysis services may be involved. In addition, there are factors that hinder the treatment of CRF. Among the factors mentioned as complicating the treatment are the effects caused by the treatment, which represented 25% of the complaints, by the patients presenting symptoms after the session such as weakness, asthenia and fatigue[4]. This situation is directly related to the fact that a large part of the studied population has less than 1 year of hemodialysis treatment, where the greatest effects are found due to the adaptation of the organism to therapy. Next, the patients complained about the transport, being represented by 23%. The time spent in each session and its frequency of 3 times a week, are reasons for complaints by 11% of patients, who report not having time, nor willingness to perform activities of daily living that they previously performed. 8% of patients, on the other hand, reported other causes, such as financial difficulties and the absence of companions. CRF produces physiological and functional changes, resulting from decreased physical activity, muscle weakness, anemia, metabolic changes, as well as impairing quality of life[40]. In contrast, research carried out in Anápoles, in the state of Goiás, which shows that among the difficulties encountered, the availability of medicines (51%) is the main reason for patient complaints, followed by transportation (20.5%) and time spent for each session (14.5%). Those who reported dependence on treatment and had no complaints corresponded to 3% each[60].

The authors Pinheiro and Alves[61] already warned about predisposing factors such as stress, inadequate diet, smoking, use of estrogenic hormones, obesity, physical inactivity and the lack of health control that make the increase in blood pressure inevitable. While Associations of chronic kidney patients[48] deal with Brazilian statistics compared to other countries. Brazilian statistics are compatible with those of other countries in Latin America and smaller than those of the United States, which show diabetes and arterial hypertension as causes of CRF in three quarters of patients on dialysis. This difference can be explained by the large number of elderly patients in developed countries, since life expectancy is higher, and also by the eating and cultural habits of these countries that favor the onset of these diseases[48]. Pharmacological characteristics: Among the male and female patients participating in this study, 100% use medications. 80% know what the medicines they use are used for, with about 85% of men reporting that they know the drug's indications while approximately 75% of women report knowing the indications. 80% of patients know how to describe medications and of these 85% of men and approximately 75% of women claim to know the description of

the medications. When asked if they follow the prescriptions, 80% say yes. Do they strictly follow the prescriptions of the medications?. In this variable, women predominate with more than 90% while men approach 70%. When asked if they receive pharmaceutical guidance, 50% say they receive the appropriate guidance at the dialysis center itself and 60% say they understand the guidance. Male patients were the most reported to receive pharmaceutical guidance (58%) while women were less frequent with 37%. Similar to the frequencies of the guidelines, male patients who understand the guidelines have a frequency of 58% and 37% women. When asked about the amount of daily medications, 3 to 4 daily medications prevailed with 60%. Male patients consume more daily medications than women, in a proportion of 58% for the consumption of 3 to 4 daily medications against 45% for women. Only 15% of patients say they practice self-medication, however 80% say they use teas and medicinal plants. Patients report that they seek medical help (95%) when necessary (Table 3). Santos[3] found similar findings. In Santos[3]3 research 80% affirm that they know what the medicines are for, 80% know how to describe the medicines and 76.6% take the medicines correctly. 80% reported that they do not self-medicate and 20% assumed to use over-the-counter medications; 33.3% use teas and herbal medicines and 66.7% do not use. Even though 80% of respondents reported not using medication without a prescription, there is a disagreement when compared to the use of teas and herbal medicines, believing that 13.3% of those who reported not self-medicating use these substances.

Studies by Garabeli *et al*[13]; Madalozzo *et al*[14]; Vaz *et al*[15] point to evidence that patients with chronic renal failure use several concomitant drugs, including teas and medicinal plants. For these authors, given the perception that patients with kidney disease use many medications and often do not know their indication and others do not obey medical guidelines, and for a better response to pharmacotherapy of chronic renal patients undergoing hemodialysis, it is essential to survey the pharmacological profile.

CONCLUSION

The number of patients with chronic renal failure seen at the Reference Dialysis Center in this study grows exponentially each year. Depending on the severity of renal impairment, many of the nephropathies can progress to severe states of morbidity and even death. Systematized care in the pharmacy area is an instrument that can bring great benefits to patients, who need intensive care in this new stage of life, struggling to survive. The main results found according to the instruments applied in relation to socioeconomic characteristics were as follows: Of the 120 patients who were part of the sample, 63% are men and 75% are between 18 and 58 years old; 82% are married; 58% receive sick pay; 55% have a monthly income of 1 to 2 minimum wages; family composition predominates with up to 5 people in the family (70%); the majority (70%) live outside the city of the Dialysis Center where they undergo treatment; level of education with a relative frequency of 20% with incomplete elementary school and 25% with complete elementary school and; on hemodialysis three times a week for 3 to 4 hours. Systolic arterial hypertension (SAH) is the main cause of chronic renal failure in the population studied, representing a relative frequency of 57% of cases. The main clinical characteristics presented by the patients are: Relative frequency of SAH as a base disease (62%), SAH comorbidity (78%), alteration of the hematocrit (98%), anemic corrective MP (98%), access condition = fisture (95%), report of another pathology (73%), alteration of phosphorus (48%) and phosphorus correcting MP (48%). Dialysis time from 6 months to 2 years (46%) and more than 2 years to 5 years (38%) prevails.

One hundred percent of patients use drugs. 80% know what the medicines they use are used for, with about 85% of men reporting that they know the drug's indications while approximately 75% of women report knowing the indications. 80% of patients know how to describe medications.85% of men and approximately 75% of women claim to know the description of medications. 80% follow the prescriptions of the medications, 50% receive the appropriate guidelines at the dialysis center and 60% claim to understand the guidelines. Male patients consume more daily medicines than women, in the proportion of 58% for the consumption of 3 to 4 daily medicines against 45% for women. Only 15% of patients say they practice self-medication, however 80% say they use teas and medicinal plants. Patients report that they seek medical help (95%) when necessary. The reality of patients with chronic renal failure in this study does not differ much from other Brazilian realities. It is essential the role of the pharmacist who with his attributes can influence the understanding of the importance of treating basic diseases, early diagnosis and self-care practice. The results presented show several aspects of the population of patients with chronic renal failure in the Amazon scenario, which will serve to support decisions to improve care for these patients, including the creation and long-term maintenance of a comprehensive system of data and information recording with the socioeconomic, clinical and pharmacological characteristics, in addition to the monitoring and follow-up of patients outside the treatment unit, the analysis and dissemination of epidemiological data on patients with chronic renal failure undergoing renal treatment in a Dialysis Center.

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