

## Prevention of CKD in Albanian Population

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### Abstract

The prevention of kidney disease should prioritize comprehensive public education about these conditions. This study advocates for the development of a multifaceted information strategy targeting diverse community settings, including workplaces and schools, through mini-discussion sessions, informational brochures, and media campaigns. Promoting an active, healthy lifestyle alongside the importance of regular health check-ups is crucial. Legislative changes could further enhance prevention efforts by making health check-ups mandatory nationwide. Additionally, increasing awareness about hemodialysis procedures is essential; family doctors should provide detailed information to patients, not just nephrologists. This approach is expected to facilitate earlier initiation of treatment via Arteriovenous Fistula (AVF), thereby reducing complications associated with hemodialysis. Furthermore, the routine performance of kidney biopsies by nephrologists is highlighted as a critical step in improving diagnostic accuracy and treatment outcomes in Albania. Overall, this study underscores the need for an integrated approach to kidney disease prevention that combines education, policy reform, and improved clinical practices, ultimately aiming to enhance patient care and health outcomes in the population.

**Keywords:** Chronic kidney disease; Arterial hypertension; Diabetes mellitus; Arterio-venous fistula; Renal replacement therapy

### Introduction

Chronic Kidney Disease (CKD) is a progressive pathology which affects 5%-15% of the population worldwide [1]. Its trend is seen to be increasing in the last 10 years, a trend which has been also observed in the Albanian population [2]. Meanwhile the number of individuals with Renal Replacement Therapy (RRT) exceeds 2.5 million worldwide and it is thought to double in 2030 [3,4]. The incidence of patients with CKD stage V on dialysis is constantly increasing. Annual data coming from the United States show that the prevalence of CKD has an increasing trend with age from 10.5% in patients aged 65-74 years to 23.9% in patients aged 85 years. Males are also more affected than females by CKD. In 2017 the number of new cases of End Stage Renal Disease (ESRD) in this population was 124.000 cases and the incidence ratio was 370.2 per million/year.

### Literature Review

This is a retrospective study, with descriptive and analytical character. The data came from medical records of patients who have received chronic health care at the hemodialysis service during 2019 in the regional hospital of Gjirokastra. These data have been re-evaluated. Patients are followed periodically every month with examinations according to the protocol approved by the Ministry of Health and Social Protection of Albanian Republic. The estimated parameters are expressed with mean  $\pm$  DS.

### Results

The study population consisted of 46 patients diagnosed with end stage renal disease who received chronic hemodialysis service at the Gjirokastra regional hospital during 2019. The average age of the patients was estimate to be 60.9 years, with a predominance of the group 61-80 years respectively 48%. Mostly there were men (63%),

while women were only 37% of the total number. Patients had started the hemodialysis at different periods of time and the longest duration on dialysis was 22 year on a patient transferred from another hemodialysis center to us, while the mean time of all hemodialysis patients was estimated to be 5 years. The percentage of the patients who had started the hemodialysis therapy with 1 year or less was 24% and this was the largest group, while patients survival more than 14 years on hemodialysis was only 7%. The main comorbidity such as hypertension and diabetes mellitus were meanwhile analyzed in these patients. Hypertension was detected in 65% of patients of which 94% were male while 9% suffered from diabetes mellitus of which 75% were male. The distribution of primary diagnoses leading to ESRD was as following: 7 cases with ADPKD, 4 cases with nephrosclerosis, 9 cases with glomerulonephritis (3 with IgA nephropathy, 1 with pauci-immune vasculitis and 5 chronic glomerulonephritis without renal biopsy), 12 cases with chronic pyelonephritis, 3 cases with diabetic nephropathy while 11 patients had no known primary diagnosis. It was observed that the average of hemoglobin levels in blood were over 10 g/dl, while the analysis made by gender showed that women had lower hemoglobin levels with an average of 9.9 g/dl in contrast to men who resulted in an average hemoglobin of 10.5 g/dl. The mean value of total protein was 6 g/dl, where it is noticed that in female patients it

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was lower (average of total plasma protein 5.8 g/dl) compared to male patients when this value was 6.1 g/dl. The most commonly used vascular access was arteriovenous fistula in 87% of patients while 6 patients received hemodialysis through central venous catheters (4 patients with permanent catheter and 2 patients with temporary catheter). But their first vascular access at the start of Hemodialysis (HD) had been a temporary central venous catheter in 80% of the patients.

## Discussion

For 8 years in Albania, the measurement of serum creatinine and blood urea has been introduced in the basic health control of the population, but there is a lack of creatinine clearance, which is essential in the early detection of decreased glomerular filtration. Family physicians who need to evaluate these outcomes are often not fully qualified to assess a patient's glomerular filtration based only on serum creatinine level, failing to detect patients in the early stages of the disease. According to the guidelines of the international nephrology organization, chronic kidney disease goes through 5 stages depending on GFR and albuminuria. The patients with CKD stage 5 respectively with glomerular filtration level below 15 ml/min must undergo renal replacement therapy which is presented in the form of dialysis and renal transplantation [5]. Dialysis for chronic patients in our country is offered in two forms such as hemodialysis and peritoneal dialysis, although there is a larger percentage of patients who select and receive hemodialysis therapy. The regional hospital "Omer Nishani" have been offering hemodialysis service for 15 years and it has been accessible by patients from the region of Gjirokastra but also from the city of Saranda and its surroundings, although initially with limited capacity. The demand for hemodialysis has had an increasing trend following the increase numbers of patients with CKD and respectively only in 2019 this service has been regularly offered to 46 chronic patients [6-8]. Meanwhile, we should mention the fact that the city of Gjirokastra, being a border city and our center is the only one in the southern territory of Albania, has provided access to transit patients who have come on vacation to Gjirokastra and Saranda, mainly during the summer season. Data showing the distribution of primary diagnoses highlight the identification of the patients in advanced stages of chronic kidney disease as well as the lack of diagnostic procedures such as kidney biopsy [9]. So there were 5 patients who were clinically presented with glomerular disease but without histological images and consequently you can allude to their delayed or incomplete treatment. Other cases of glomerular pathology were confirmed by biopsy performed in foreign clinics, thus prompting us to a commitment to performing renal biopsy as a method of diagnosing kidney pathologies. During the analysis of laboratory parameters it was noticed that the average hemoglobin levels in the blood of patients were above 10 g/dl while in the analysis performed by gender it turned out that women had lower hemoglobin values with an average of 9.9 g/dl in contrast to males resulting in an average hemoglobin of 10.5 g/dl. Patients were under chronic treatment according to monthly parameters with iron and erythropoietin. In addition, an important problem was identified as malnutrition where the average value of total protein was 6 g/dl, which is attributed to the increased catabolism that we find in patients with hemodialysis treatment but also to a strict diet [4]. It is already known that energy expenditure in resting conditions in patients with chronic dialysis it is mostly stable, but during the hemodialysis procedure an increase of 12%-20% was observed. This energy waste is also high in the presence of comorbidities such as cardiovascular disease,

hyperparathyroidism, uncontrolled diabetes mellitus and the inflammation commonly found in our patients [10]. Meanwhile, chronic kidney disease itself is considered an inflammatory condition. So, the decline of renal function is associated with the retention of circulating cytokines, AGEs and pro-oxidants which contribute to the creation of a proinflammatory environment [11-13]. Other explanatory mechanisms are hyperactivity of the sympathetic nervous system and inhibition of vagus nerve activity. The process of hemodialysis itself is an accelerating factor of inflammation, although it is not accepted as a major factor because the proinflammatory biomarkers are found to be increased since the stage of pre-renal replacement therapy. Volume overload which could be present at hemodialysis patients as interdialytic weight gain, is known as a contributor to the pro-inflammatory condition. Signs of protein and energy wasting syndrome are observed not only in patients with BMI < 20 kg/m<sup>2</sup>. Also the inflammation markers and the PEW indicators such as PCR and IL-6 are found in all categories of BMI, concluding that the presence of overweight does not exclude the presence of PEW. It should be taken into account that this category of patients have low financial income and so they find it difficult to maintain a balanced food diet but rather it leans towards strict restrictions, leading them to PEW. Again, as with the hemoglobin level this negative trend in terms of total protein level is observed in females (average total serum protein 5.8 g/dl) compared to males in whom this value was 6.1 g/dl. Another evaluated element in this study was vascular access. It was observed that the most commonly used vascular access was arteriovenous fistula in 87% of chronic patients while 6 patients received hemodialysis treatment through central venous catheters. Based on the analysis performed especially for patients who had started hemodialysis only in the last 2 years, we found a difficult situation that their first vascular access had been a temporary central venous catheter. Thus, according to the KDOQI working group, it is recommended that patients undergo surgery to create an autogenous arterio-venous fistula when the creatinine clearance is 25 ml/min and the blood creatinine level is 4 mg/dl or when it is predicted that the patient needs hemodialysis within 1 year. This time allows maturation of the vascular access and prevention of the use of the temporary catheter. Further in patients who are not candidates for native fistula it is recommended to place the PTFE graft at least 3-6 weeks before the onset of HD.

Catherine O., in her study in 2000, showed that 33% of patients had an AV fistula as the first permanent access and 67% had grafts. Meanwhile 66% of patients had started hemodialysis with central venous catheter, 12% with AV fistula and 22% with PTFE graft. This study showed that patients who were more informed and those who had more visits to the nephrologist were more likely to have permanent access before the onset of HD. Data coming from our hemodialysis center shows that 80% of patients had central venous catheter as their first access. Other interesting data come from the annual report of the USA for 2017 where the vascular access used to start hemodialysis was a central venous catheter in 63.4% of cases, arterio-venous fistula in 16.8% and in 3.1% of cases it was an AV graft. In the period 2005-2017 there was an increase in the use of AV fistula as initial access from 12% to 17%. The data coming from our study show once again the lack of information of the population and patients about chronic kidney disease and renal replacement therapy. Many patients have found it difficult to accept the start of hemodialysis by refusing or delaying the creation of arteriovenous fistula, leading to aggravation of their clinical condition. The same situation has occurred in cases

referred late to the nephrologist. It is the nephrologist who informs patients with CDK about the progression of the disease and the need at one stage for the initiation of RRT and especially hemodialysis. But, in no way should be forgotten the role of the family doctor, who has the advantage of following the patients in the early stages of CDK, based on the results of the periodic check-up. A coordination of work by the family doctor and the nephrologist, would bring the screening of cases, early diagnosis and timely referral to the specialist of patients with CDK. Performing continuous information activities in the population but also in the medical staff for chronic kidney disease is very important.

## Conclusion

Prevention of kidney disease should have as a priority the information of population around these pathologies. It is necessary to create an information strategy of the population using mini-discussion sessions at the workplaces and schools, distributing information brochures or using the media or social applications to promote an active healthy lifestyle and the importance of check-up. Maybe it's time to conduct legislative changes which could reverse health check-up in an obligatory form, in our country. Also providing more detailed information about the procedure of hemodialysis by family doctors not only by nephrologists will increase the number of patients who start this treatment through FAV, reducing in this way the number of hemodialysis complications. Also this study shows the importance of performing the kidney biopsy by the nephrologist as a routine procedure in Albania.

## References

1. Zha Y, Qian Q (2017) Protein nutrition and malnutrition in CKD and ESRD. *Nutr* 9: 208
2. de Nicola L, Zoccali C (2016) Chronic kidney disease prevalence in the general population: Heterogeneity and concerns. *Nephrol Dial Transplant* 31: 331-335
3. Liyanage T, Ninomiya T, Jha V, Neal B, Patrice HM, et al. (2015) Worldwide access to treatment for end-stage kidney disease: A systematic review. *Lancet* 385: 1975-1982
4. Bikbov B, Purcell CA, Levey AS, Smith M, Abdoli A, et al. (2020) Global, regional, and national burden of chronic kidney disease, 1990–2017: A systematic analysis for the global burden of disease study 2017. *Lancet* 395: 709-733
5. Stehman-Breen CO, Sherrard DJ, Gillen D, Caps M (2000) Determinants of type and timing of initial permanent hemodialysis vascular access. *Kidney Int* 57: 639-645
6. USRDS (2019) End-stage Renal Disease (ESRD) in the United States. USRDS
7. Carrero JJ, Stenvinkel P, Cuppari L, Ikizler TA, Kalantar-Zadeh K, et al. (2013) Etiology of the protein-energy wasting syndrome in chronic kidney disease: A consensus statement from the International Society of Renal Nutrition and Metabolism (ISRNM). *J Ren Nutr* 23: 77-90
8. Stenvinkel P, Ketteler M, Johnson RJ, Lindholm B, Pecoits-Filho R, et al. (2005) IL-10, IL-6, and TNF- $\alpha$ : Central factors in the altered cytokine network of uremia-the good, the bad, and the ugly. *Kidney Int* 67: 1216-1233
9. Suliman ME, Heimbürger O, Barany P, Anderstam B, Pecoits-Filho R, et al. (2003) Plasma pentosidine is associated with inflammation and malnutrition in end-stage renal disease patients starting on dialysis therapy. *J Am Soc Nephrol* 14: 1614-1622
10. Dounousi E, Papavasiliou E, Makedou A, Ioannou K, Katopodis KP, Tselepis A, et al. (2006) Oxidative stress is progressively enhanced with advancing stages of CKD. *Am J Kidney Dis* 48: 752-760
11. Barreto DV, Barreto FC, Liabeuf S, Temmar M, Lemke HD, et al. (2010) Plasma interleukin-6 is independently associated with mortality in both hemodialysis and pre-dialysis patients with chronic kidney disease. *Kidney Inter* 77: 550-556
12. Enia G, Mallamaci F, Benedetto FA, Panuccio V, Parlongo S, et al. (2001) Long term CAPD patients are volume expanded and display more severe left ventricular hypertrophy than haemodialysis patients. *Nephrol Dial Transplant* 16: 1459-1464
13. Honda H, Qureshi AR, Axelsson J, Heimbürger O, Suliman ME, et al. (2007) Obese sarcopenia in patients with end-stage renal disease is associated with inflammation and increased mortality. *Am J Clin Nutr* 86:633-638