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Knowledge of nephrological nursing staff on chronic kidney disease-related pruritus

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ABSTRACT

Introduction: Chronic kidney disease-pruritus is the sensation of itching related to the disease without another disease justifying it. Although its prevalence may have decreased, it still persists and is underdiagnosed.

Objective: To analyze the knowledge and usual practice of the nursing staff in our unit on the management of pruritus.

Material and Method: We conducted a descriptive, single-center study in March 2023 using a self-designed survey on the degree of knowledge and usual practice of the nursing staff in our nephrology unit regarding pruritus.

Results: 24 surveys (96% participation): 62.5% women with an age of 43.8±11.8 and 14.2±11.1 years of working experience. A total of 41.6% (n=10) adequately estimated the prevalence of pruritus in our center. A total of 78% (n=21) diagnosed only if the patient reported it, while 50% (n=12) did not use specific assessment scales.
The simple visual analog scale (VAS) 21% (n=5) and the verbal numerical scale of worst itch (WI-NRS) 21% (n=5) were the most widely used. A total of 92% (n=22) and 71% (n=17) had knowledge of the main hygienic-dietary advice and possible causes of pruritus. All respondents considered that chronic kidney disease-related pruritus damaged the patient's quality of life and considered it useful to receive educational training.

Conclusiones: The nursing staff have adequate knowledge about chronic kidney disease- related pruritus. A proactive attitude towards its diagnosis and greater use of specific questionnaires are aspects to improve in our routine clinical practice.

Keywords: pruritus; chronic kidney disease; nephrological nursing.

RESUMEN

Conocimiento del personal de enfermería nefrológica sobre el prurito asociado a enfermedad renal crónica

Introducción: El prurito asociado a la enfermedad renal crónica es la sensación de picor relacionada con la enfermedad sin otra patología que lo justifique. Su prevalencia ha podido disminuir, aunque todavía persiste y está infradiagnosticado.

Objetivo: Analizar el conocimiento y práctica habitual de la enfermería de nuestra unidad sobre el manejo del prurito.

Material y Método: Estudio unicéntrico descriptivo, realizado en marzo de 2023 mediante encuesta auto diseñada sobre el grado de conocimiento y la práctica habitual del personal de enfermería de nuestra unidad de nefrología, sobre el prurito.

Resultados: 24 encuestas (96% de participación). 62,5% mujeres con edad de 43,8±11,8 y 14,2±11,1 años de experiencia laboral.

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Un 41,6% (n=10) estimó adecuadamente la prevalencia del prurito en nuestro centro. Un 78% (n=21) diagnosticaba solo si lo manifestaba el paciente y un 50% (n=12) no utilizaba escalas de valoración específicas.

La escala visual analógica simple (EVA) 21% (n=5) y la escala numérica verbal del peor picor (WI-NRS) 21% (n=5), fueron las más utilizadas. Un 92% (n=22) y un 71% (n=17) tenían conocimiento de los principales consejos higiénico-dietéticos y posibles causas del prurito. Todos los encuestados consideraban que el prurito asociado a la enfermedad renal afectaba a la calidad de vida del paciente y consideraron de utilidad recibir formación educativa.

Conclusiones: Enfermería tiene conocimientos adecuados sobre el prurito asociado a la enfermedad renal crónica. Una actitud proactiva hacia su diagnóstico y una mayor utilización de cuestionarios específicos son aspectos que mejorar en nuestra práctica habitual.

Palabras clave: prurito; enfermedad renal crónica; enfermería nefrológica.

INTRODUCTION

Chronic kidney disease-associated pruritus (CKD-aP) is the sensation of itching directly related to kidney disease, without any another condition justifying it[1]. Although the prevalence of CKD-aP has decreased in recent years, due in part to improvements in dialysis techniques and treatment of kidney patients, it still persists and remains underdiagnosed[1,3]. CKD-aP is associated with a high disease burden and a significant negative impact on patients' quality of life[4,5]. Therefore, it is important to appropriately address the diagnosis and treatment of this symptom.

Nursing staff in hemodialysis (HD) play a fundamental role in the care and diagnosis of CKD-aP by helping to identify this symptom and facilitate its appropriate therapeutic management[2,4,6]. Thus, the knowledge of nursing staff regarding CKD-aP and its appropriate management in daily practice are key factors in the proper handling of this symptom.

The objective of our study was to analyze the level of knowledge and routine practices of the nursing staff regarding CKD-aP in our dialysis unit, with the aim of proposing intervention strategies to improve the care of patients with CKD-aP.

MATERIAL AND METHOD

We conducted a single-center descriptive study during March 2023 at the Consorci Sanitari Terrassa.

A self-designed survey was developed and directed to the nursing staff of our nephrology unit (hemodialysis, peritoneal dialysis, and Advanced Chronic Kidney Disease outpatient clinic) using Microsoft Forms, a corporate application included in the Office 365 package provided by the Center for Telecommunications and Information Technology.

The anonymous and voluntary survey consisted of 14 multiple-choice Likert-type questions, including sociodemographic and professional data as well as various aspects related to the knowledge and routine practical management of CKD-aP in our HD unit: data on estimated prevalence in our unit, the use of specific assessment scales, knowledge of hygiene-dietary recommendations and potential causes of CKD-aP, main prescribed treatments, and training needs **(annex 1)**.

Once data were collected, a descriptive statistical analysis was conducted using SPSS software, version 27 (SPSS Inc., Chicago, IL, United States). Quantitative variables were expressed as mean and standard deviation. Qualitative variables were expressed as percentages or frequency distributions.

The entire study was conducted in accordance with Good Clinical Practice guidelines and the Declaration of Helsinki, following approval and institutional regulations.

RESULTS

A total of 24 out of the 25 nurses in the nephrology unit completed the survey (a 96% response rate).

A total of 62.5% (n=15) of respondents were women, with a mean age of 43.8±11.8 years. The mean professional experience was 14.2±11.1 years. A total of 58.3% (n=14) of the nursing staff worked exclusively in the hospital setting. Another 37.5% (n=9) worked both in the hospital and dialysis centers. The primary area of work was HD, with 83.3% (n=20) of nurses; 12.5% (n=3) worked in the peritoneal dialysis outpatient clinic, and 4.1% (n=1) in the kidney transplant unit.

Regarding knowledge of CKD-aP prevalence in our HD unit (previously reported at 29.7%), only 41.6% (n=10) of respondents were aware of this figure. A total of 37.5% (n=9) underestimated and 20.8% (n=5) overestimated the prevalence of CKD-aP in our unit **(figure 1)**.

When asked about the diagnosis of CKD-aP, respondents could choose more than one answer, resulting in 27 total responses. In 78% (n=21) of cases, pruritus was only diagnosed if the patient self-reported it; 15% (n=4) diagnosed it if directly asked; 4% (n=1) used a non-specific scale or questionnaire; and 4% (n=1) used other methods, such as information from family members.

A total of 50% (n=12) of respondents did not use specific, validated scales to assess pruritus in patients with chronic kidney disease (CKD). Among those who did, the most used

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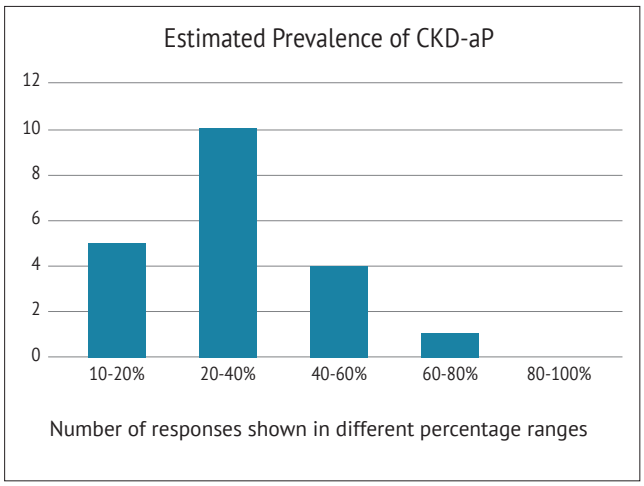

Figure 1. Estimated prevalence of chronic kidney disease-associated pruritus (CKD-aP) in our unit, according to nursing staff.

were the simple visual analog scale (VAS) 21% (n=5) and the verbal numerical rating scale for worst itch (WI-NRS) 21% (n=5). Other scales like the Self-Assessed Disease Severity Scale (SADS) 4% (n=1) and the VAS for worst itch 4% (n=1) were least used **(figure 2)**.

Regarding knowledge of key hygiene-dietary advice and potential etiopathogenic mechanisms of CKD-aP, 92% (n=22) and 71% (n=17) respectively were considered adequately informed. Furthermore, all respondents believed CKD-aP negatively impacted the patients' quality of life.

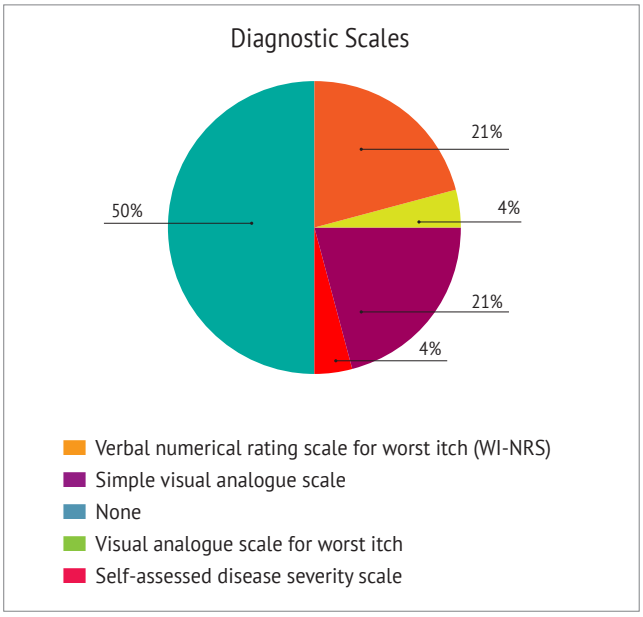

Figure 2. Main scales used by nursing staff for diagnosing chronic kidney disease-associated pruritus (CKD-aP).

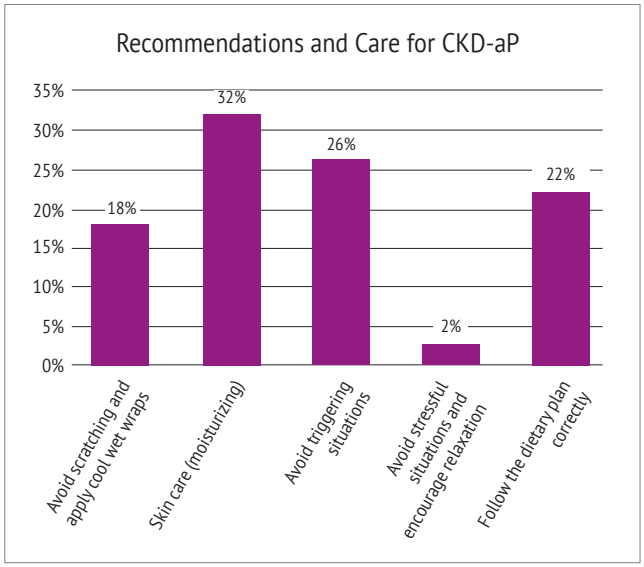

Figure 3. Main hygienic-dietary recommendations and advice provided to patients with chronic kidney disease-associated pruritus (CKD-aP) in our unit.

In terms of the main recommendations made by nursing staff, 68 responses were obtained. In 32% (n=22), skin hydration was advised; in 26% (n=18), avoiding triggering situations; and in 22% (n=15), following the prescribed diet correctly. Less commonly, 18% (n=12) recommended avoiding scratching and applying cool wet wraps, while 2% (n=1) advised avoiding stress and promoting relaxation **(figure 3)**.

Regarding knowledge of routinely prescribed medical treatments, of the 34 responses obtained, antihistamines (47%, n=16) and moisturizing creams (32%, n=11) were most frequently cited. Gabapentin was mentioned by 12% (n=4) and corticosteroids by 9% (n=3). Notably, 62.5% (n=15) of nurses were unaware of any specific treatment currently available for CKD-aP.

Finally, all respondents considered it useful to receive training on CKD-aP. A total of 29 preferences were recorded: 48% (n=14) preferred educational workshops, 24% (n=7) lectures, 21% (n=6) online courses, and 7% (n=2) webinars.

DISCUSIÓN

The results of our study provide valuable insight into various aspects of nursing knowledge and clinical management of CKD-aP in daily practice. Our findings also help identify areas for improvement in training and practice among nurses in our unit to enhance the diagnosis and treatment of this distressing symptom in the HD setting.

We observed a high participation rate, making the results representative of our HD nursing staff. The ease of answering the survey, familiarity with digital tools, and heightened

sensitivity of our unit toward appropriate management of CKD-aP likely contributed to this response rate. This level of participation also reflects a strong commitment from our nursing staff to improve patient care.

Despite high engagement, many respondents were unable to correctly identify the estimated prevalence of CKD-aP in our unit. A significant portion underestimated the reported figure, again highlighting the underdiagnosis of CKD-aP[7,9].

Moreover, only a small proportion of nurses showed a proactive attitude toward diagnosing CKD-aP, with most cases being reported spontaneously by patients.

Nurses play a critical role in addressing pruritus, as they are the health care professionals with the most frequent and close contact with kidney patients. They are ideally positioned to proactively investigate and initiate appropriate treatment for this symptom[4,6,8,10].

Only half of respondents used validated pruritus assessment scales. While the simple VAS and WI-NRS were most frequently used, more specific tools tailored to the patient population should be considered to avoid underestimating the severity of pruritus. It is recommended to routinely evaluate both itch intensity and its impact on quality of life using two self-assessment scales[5,7,9,11]. Thus, implementing the WI-NRS and SADS scales could improve diagnosis and treatment of CKD-aP.

Of note, the strong knowledge among nurses on hygiene-dietary recommendations, including skin hydration, avoiding triggers, and following dietary guidance. These are essential for proper CKD-aP management and improve quality of life significantly[4,5,8,12-14]. However, their effectiveness may vary and should be tailored individually.

Most nurses indicated familiarity with CKD-aP pathophysiology, likely based on its traditional association with mineral bone disorder[1,5,8,14]. However, since the question was dichotomous (yes/no), responses may be overestimated, and newer mechanisms like dysregulation of kappa and mu opioid receptors remain less known among staff.

In terms of pharmacologic treatment, antihistamines and gabapentinoids were most frequently mentioned. However, a significant number of respondents were unaware of newer therapies available in the short term[13,14]. This highlights the need for further training on up-to-date treatment options for CKD-aP.

This need for training was also expressed by our staff, with a preference for workshops and in-person sessions. We plan to implement these training formats in our HD unit.

One strength of our study is the ease and speed of conducting the survey, which revealed potential knowledge gaps in a topic not routinely addressed yet crucial to patient quality of life.

Limitations include the lack of survey validation, single-center hospital-based design, small sample size, and inclusion limited to HD nursing staff. Nevertheless, the study provided detailed insight into our nurses' knowledge and practices related to CKD-aP. Including nurses from other dialysis centers or nephrology units might yield different results, so our findings should be interpreted accordingly.

In conclusion, this study has helped us understand the knowledge and routine practices of nursing staff in our dialysis unit regarding CKD-aP. While our nurses demonstrated adequate knowledge, improvements are needed in fostering a proactive diagnostic approach, increased use of specific assessment tools, and updated knowledge of treatment options. Based on our findings, we will consider ongoing education –particularly through workshops– as a key strategy to improve the diagnosis and management of CKD-aP.

Conflicts of interest

The authors declare no conflicts of interest related to the research, authorship, and/or publication of this manuscript.

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Appendix 1. Questionnaire Used

CST:

TO ANALYZE THE IMPORTANCE OF CHRONIC KIDNEY DISEASE-ASSOCIATED PRURITUS

We would like to understand the current level of knowledge among professionals at our center, CST: Hospital de Terrassa, regarding a symptom that can be disabling for our patients—pruritus associated with CKD. To do so, we invite you to fill out this very short anonymous survey, which will take less than 2 minutes.

The information obtained will be of great interest to all professionals in our society and will help us discover new aspects of this symptomatology.

1. Sex:
- a. Male
- b. Female

2. Age (years):

3. Workplace (select ONE):
- a. Hospital
- b. Dialysis center
- c. Both

4. How many years of experience do you have in the Nephrology unit?

5. Main work areas (multiple options):
- a. Chronic kidney disease without dialysis
- b. Hemodialysis
- c. Peritoneal dialysis
- d. Kidney transplant

6. What approximate percentage of your patients do you believe suffer from CKD-associated pruritus?
- a. 0–10%
- b. 10–20%
- c. 20–40%
- d. 40–60%
- e. >60%

7. How do you identify CKD-associated pruritus? (multiple options)
a. The patient reports it
b. I ask the patient
c. Through a scale or questionnaire
d. Others (specify): .....

8. If you use a scale or questionnaire to diagnose CKD-associated pruritus, indicate which one:
a. Verbal Numerical Rating Scale for Itch (NRS-WI)
b. Visual Analogue Scale for Itch (VAS-WI)
c. Simple Verbal Scale for Itch (EVS)
d. Self-assessed Disease Severity Scale (SADS)

9. Do you know what advice to give to a patient reporting CKD-associated pruritus?
a. Yes
b. No

10. Which of the following are appropriate recommendations for a patient with CKD-associated pruritus? You may select up to 3 options:
a. Avoid scratching and apply cool wet wraps, creams, lotions, or gels
b. Skin care (hydration)
c. Avoid triggers (tight clothing, high ambient temperature, use of perfumed or alcohol-containing/irritant products)
d. Avoid stressful situations, promote relaxation
e. Properly follow the CKD dietary plan

11. Do you know the causes involved in the pathophysiology of CKD-associated pruritus?
a. Yes
b. No

12. Do you consider CKD-associated pruritus an important symptom that affects the quality of life of kidney patients?
a. Yes
b. No

13. If a patient has pruritus, what is the most widely recommended treatment?
a. Moisturizing/anesthetic creams
b. Corticosteroids
c. Opioid antagonists/agonists
d. Gabapentin/pregabalin
e. Immunosuppressants
f. Antidepressants

14. Do you know if there is a specific indicated treatment for CKD-associated pruritus?
a. Yes
b. No

15. Do you think training on the management and diagnosis of pruritus would be useful?
a. Yes
b. No

16. If you answered yes, how would you prefer the training to be delivered?
d. Practical workshops
e. In-person lecture
f. Online course
g. Webinar
h. Other .....

THANK YOU VERY MUCH FOR YOUR PARTICIPATION

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