

Bulletin de la Dialyse à Domicile

Home Dialysis Bulletin (BDD)

International bilingual journal for the exchange of knowledge and experience in home dialysis

(English edition) (version française disponible à la même adresse)

Evaluation of professional practices in the management of anemia and nutrition in peritoneal dialysis patients: About a single-center experience

(Evaluation des pratiques professionnelles dans la prise en charge de l'anémie et la nutrition chez le patient en dialyse péritonéale : à propos d'une expérience monocentrique)

Manon Geeraert¹, Justine Schricke¹, Raymond Azar¹

¹Hôpital Alexandra Lepève, service dialyse péritonéale, DUNKERQUE

To cite: Geeraert M, SCHRICKE J, Azar R. Evaluation of professional practices in the management of anemia and nutrition in peritoneal dialysis patients: About a single-center experience. Bull Dial Domic [Internet]. 7(4). Available from DOI: <https://doi.org/10.25796/bdd.v7i4.84593>

Summary

Since the French law of March 4, 2004, healthcare professionals in both the medical and paramedical fields have been participating in developing the evaluation of professional practices (EPP). This initiative forms part of a broader ongoing effort to enhance medical practices.

The EPP is an essential tool for improving the quality of care and guaranteeing patient safety. This assessment can be individual or collective. It aims to target one or more themes to correct any discrepancies between the care provided to patients and a set of standards for care and management.

We have consistently carried out EPPs since 2012, mainly on anemia and nutrition in peritoneal dialysis patients. Through this work, we wish to demonstrate our interest in conducting EPPs in the follow-up of peritoneal dialysis patients.

Keywords : Anemia, Peritoneal Dialysis, EPP, Nutrition

Résumé

Dans une démarche constante d'amélioration des pratiques médicales, depuis la loi du 4 Mars 2004, en France, les professionnels de santé, qu'ils soient du domaine médical ou paramédical, participent au développement des évaluations des pratiques professionnelles (EPP).

L'EPP est un outil incontournable pour améliorer la qualité des soins et garantir la sécurité du patient. Cette évaluation peut être individuelle ou collective. Elle vise à cibler un ou différents thèmes afin de corriger les écarts entre les soins prodigués aux patients par rapport à un référentiel de soins et de prise en charge.

Nous effectuons les EPP, de manière constante depuis 2012, essentiellement portée sur l'anémie et la nutrition des patients en dialyse péritonéale. Au travers de ce travail, nous souhaitons montrer l'intérêt de la réalisation des EPP dans le suivi des patients en dialyse péritonéale.

Mots-clés : Anémie, Dialyse péritonéale, EPP, Nutrition



INTRODUCTION

The evaluation of professional practices (EPP) in medicine is an approach aimed at improving medical practices and implementing corrective and/or preventive actions, following an analysis of current practices and any deviations from the guidelines established by the Haute Autorité de Santé (HAS) [1] in France and/or learned societies. This is a global approach, as highlighted by a recently published general review [2].

Anemia and undernutrition are present in a large number of peritoneal dialysis patients, which is why personalized monitoring is necessary to adapt treatments to each patient according to indicators and clinical status.

At the heart of our nursing profession and in collaboration with other health-care professionals, we are committed to improving patient care by carrying out various EPPs.

Our aim is to demonstrate the role of EPPs in the management of anemia and nutrition in peritoneal dialysis patients through our experience in the peritoneal dialysis unit of our hospital center.

MATERIALS AND METHODS

I. Description of the population

In our hospital center, two full-time nurses are currently in charge of 38 peritoneal dialysis patients.

Our geographical area extends over a peripheral radius of more than 60 kilometers around our hospital center, with a catchment area of more than 260,000 inhabitants.

Our active file includes 12 women and 26 men, with an average age of 72.9 years. The oldest patient is 92 years old and the youngest 49 years old, with an average technical survival of 50.55 months and an average patient survival of 39.5 months.

A total of 32 patients are treated by continuous ambulatory peritoneal dialysis (CAPD) and 6 patients by automated peritoneal dialysis (APD).

In our CAPD population, we have seven patients on pure cardiac peritoneal dialysis (with a single dialysate bag/day).

II. Assessment of professional practices

II-1-Definition

Decree No. 2005-346 of April 14, 2005, on the EPP and Art. D. 4133-0-1 in France [3] state the following: "The aim of the evaluation of professional practices referred to in Article L. 4133-1-1 is the continuous improvement of the quality of care and service provided to patients by health-care professionals. It aims to promote the quality, safety, effectiveness, and efficiency of care

and prevention and, more generally, public health, in compliance with ethical rules. It consists in analyzing professional practice with reference to recommendations and according to a method developed or validated by the French National Authority for Health (HAS) and includes the implementation and monitoring of actions to improve practices.”

EPP criteria are defined by the HAS [1] and include the following:

- Assessment of real-life professional practices
- Comparison of professional practice with expected practice (based on recommendations)
- Implementation of improvement actions designed to bring actual practice into line with the expected reference practice.

The criteria can be based on the recommendations of professional societies or developed in line with the establishment’s own quality objectives.

II-2-In practice

The EPP is a tool for measuring professional practices, enabling the analysis of care after the fact to improve the quality of care and guarantee patient safety.

In particular, professionals come together around a common theme and analyze patient outcomes in relation to professional recommendations or references.

The nurse carries out daily care, evaluating and adapting it. He then communicates it to the doctor for adaptation and modification to each patient’s specific needs.

The ways in which the EPP can be implemented are diverse and evolving, depending on the objectives and expectations of the medical team and the resources of the facility.

In our case, during our EPP staff meetings, which began in 2012, in collaboration with the doctor, the peritoneal dialysis nurses, and the dietician, we share management and therapeutic decisions together, ensuring consistency in patient follow-up and increasing the cohesion of the health-care team by sharing the same objectives and using the same resources.

We also print out in advance a monitoring table of the most important parameters that we have filled in (*Table I*).

The criteria and targets have been defined beforehand by the physician in charge of peritoneal dialysis patients, with reference to the recommendations established for this type of population.

We review each patient’s results with the doctor. An analysis of the patient’s biological results and clinical situation is then carried out, enabling corrective action to be taken or existing therapies to be adjusted. Our peritoneal dialysis patients undergo a blood test every three months for the medical consultation and a day of hospitalization every six months (including a dietetic consultation).

A posteriori, we inform patients of the various changes made to their treatment, and if necessary call them in for a day hospitalization. Changes are recorded in the patient’s file, together with a

report of the meeting held. These are signed by the doctor and forwarded to our center's quality department and the association in charge of patients at home.

↓ Table I: main anemia and nutrition monitoring parameters regularly collated by nurses

Patient's name :		Age :			
First name :	.....	Date 1st session	Heart		
Date of birth :	.....	Diabetic pathology : Y/N	Y/N		
Evaluator name :					
Evaluation date :					
Parameters	Targets	BS 1st quarter 2024	BS 2nd quarter 2024	BS 3rd quarter 2024	BS 4th quarter 2024
Pds		.....		
Hb	10 à 12				
Ferritin	≥ 500				
CSS	≥ 20				
Alb	≥ 35				
CRP	≤ 5				
Npcr/6 months	≥ 1,1				
Body fat		.....		
Lean mass		.....		
Handgrip		.....		
Treatment	Treatment 2023	1st quarter 2024	2nd quarter 2024	3rd quarter 2024	4th quarter 2024
Iron PER OS					
Iron IV					
EPO					
Dietetic actions		.....		

II-3-Staff EPP Anemia/Nutrition

II-3a- EPP Anemia

Renal failure leads to a failure of the kidney's endocrine function. This results in a failure to synthesize the erythropoietin (EPO) responsible for the anemia. Once another cause of the patient's anemia has been ruled out (martial deficiency, inflammatory syndrome, etc.), the appropriate treatment is put in place. According to the HAS, the prescription of EPO in patients with chronic renal failure is subject to three conditions:

- Hemoglobin <10 g/dl
- Anemia responsible for troublesome symptoms (asthenia, dyspnea, angina)
- Anemia exclusively secondary to CKD (EPO production deficiency)

Our EPP meetings for the evaluation of anemia include the following criteria:

- Patient's age and weight
- Presence of heart failure and/or diabetes
- RFP start date

More specifically, anemia criteria include the following: hemoglobin level, ferritin and transferrin saturation coefficient, taking CRP into account, and current or past treatments (per os, IV or EPO). A prescription or adjustment of the EPO prescription is made during this EPP, with the correction of any martial deficiency by an injection of IV iron.

Every three months, we also complete the anemia module of the French-language Peritoneal Dialysis Registry (RDPLF). This is a tool for monitoring the anemia management of patients on peritoneal dialysis or home hemodialysis, and it indicates the degree of compliance with recommendations; this module also flags patients whose results are in line with recommendations [4].

II-3b- EPP Nutrition

Protein-energy undernutrition is a frequent complication of peritoneal dialysis and is induced by an unavoidable loss of protein and amino acids (around 6–10 g/day) in the dialysate, which must be compensated for by the patient's dietary intake.

Protein intake for peritoneal dialysis patients should be 1–1.2 g/kg/day to prevent undernutrition. This will be increased in the event of peritonitis.

The main symptoms of undernutrition are loss of appetite, weight loss, asthenia, and reduced physical and functional capacity.

Assessing undernutrition requires a combination of several criteria. There are various types of treatment, including dietary supplements and enteral feeding.

Our peritoneal dialysis patients mainly benefit from oral nutritional supplements (ONS) in a variety of types and forms: high-protein milky or fruity drinks, creams, amino acid solutions, etc.

The dietician intervenes as soon as peritoneal dialysis is started, with an inter-view designed to ascertain the patient's eating habits and tastes, so as to estimate and optimize his or her nutritional intake. The patient is then seen for a dietary interview every six months during his six-month follow-up, at which time a dietary survey is once again carried out.

When assessing nutrition within the staff EPP framework, we take into account the following criteria in particular:

- Patient's age and weight
- Presence of heart failure and/or diabetes
- Start date of peritoneal dialysis

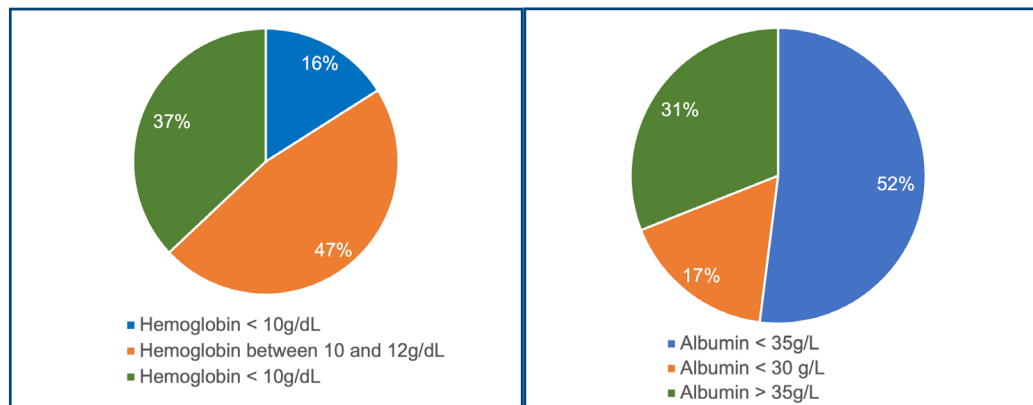
More specifically, the criteria for undernutrition are as follows: blood albumin level, presence of an inflammatory syndrome by measuring CRP, nPCR (normal-ized protein catabolism rate), body

fat and lean mass (obtained by impedanceme-try), and handgrip test (measurement of muscle strength, more specifically grip strength, which we carry out every six months).

An assessment of ONS intake is carried out at the same time. It is also possible to track the criteria for adequate dialysis and nutrition in the “Nutrition and Ade-quate Dialysis” module of the RDPLF, which calculates PCR, KT/V, and weekly creatinine clearance (indicating the portion related to residual renal function and dialysis) [5].

RESULTS

Of our 38 patients, 6 currently have hemoglobin <10 g/dl, and 24 have albumin <35 g/L (*Figures 1 and 2*).



↑ Figure 1. Hemoglobin monitoring in PD patients

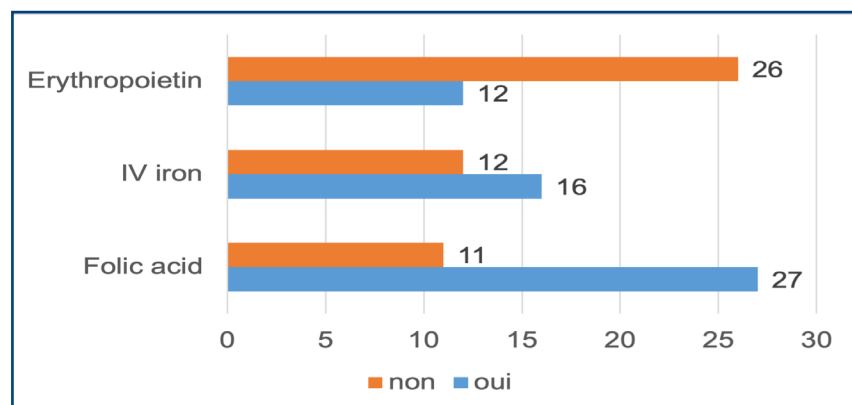
↑ Figure 2. Monitoring albumin levels in PD patients

a) Anemia

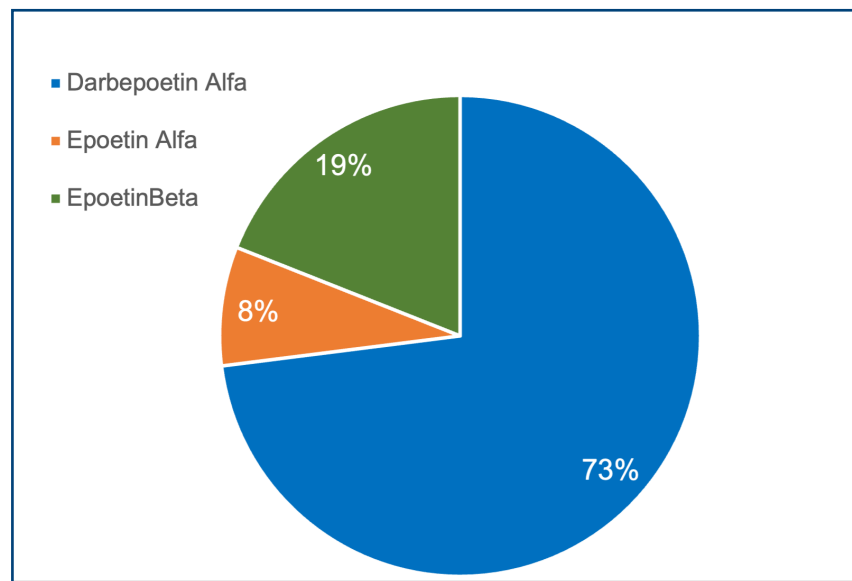
Treatments to correct anemia include the following:

- Oral folic acid
- IV iron
- Subcutaneous EPO

The distribution of folic acid treatments and the types of erythropoiesis activators are summarized in *Figures 3 and 4*.



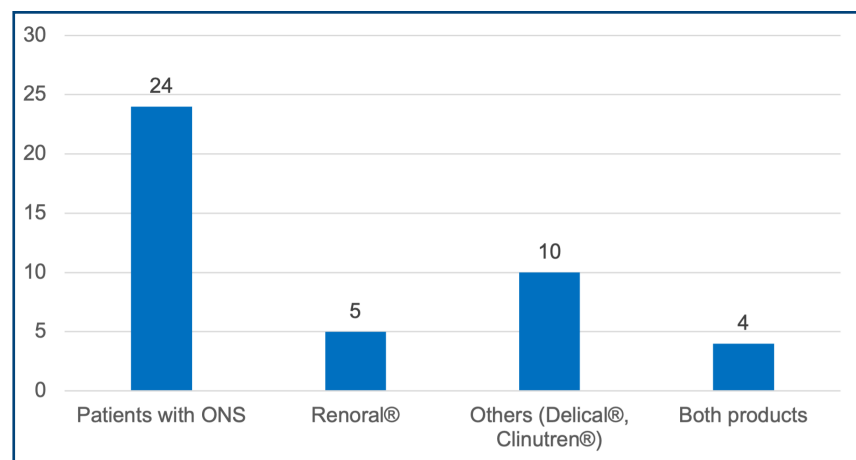
↑ Figure 3. Patients treated with folic acid, IV iron and EPO



↑ Figure 4. Different types of EPO used

b) Nutrition

In our center, 24 patients benefit from oral nutritional supplements (*Figure 5*).



↑ Figure 5. Number of patients taking oral nutritional supplements

DISCUSSION

According to HAS recommendations, hemoglobinemia is within the target range (>10 g/dl) for the majority of our peritoneal dialysis patients (*Figure 1*).

Furthermore, as assessed by plasma albumin levels, severe undernutrition was noted in eight patients, with albumin levels below 30 g/L—a minority of patients (*Figure 2*).

More specifically, mean albumin levels were 33.77 g/dl (33.07 g/dl in men and 35.28 g/dl in women).

a) Anemia

Around 29% of patients received folic acid, while 58% of patients received an IV iron infusion and 68% were treated with subcutaneous injections of EPO (*Figure 3*).

The different types of EPO used are as follows:

- Darbepoetin alfa (long half-life EPO)
- Epoetin alfa (short half-life EPO)
- Epoetin beta (short half-life EPO)

The majority of patients are treated with darbepoetin alfa, an EPO with a long half-life, enabling injections to be spaced out when the patient's hemoglobin has stabilized (*Figure 4*).

b) Nutrition

In our center, 24 patients benefit from oral food supplements (*Figure 5*).

The main oral food supplements we use are as follows:

- RENORAL® (Théradial) (Renoral® is an oral nutritional supplement containing amino acids, specifically formulated for the nutritional needs of adult patients suffering from end-stage chronic renal failure without carbohydrate or lipid calories.)
- DELICAL® (Lactalis nutrition santé)/CLINUTREN® (Nestlé Health Science) (These are ternary mixes with a complete nutritional profile, rich in protein and/or calories. They can be administered orally in the form of desserts, drinks, jellies, etc.)

We note that the majority of patients receive DELICAL® or CLINUTREN® nutritional supplements, with a minority on RENORAL®. However, nine patients receive both types of supplements.

The aim of these oral supplements is to help meet the nutritional needs of the malnourished patient as well as to compensate for the protein losses induced by peritoneal dialysis, thereby maintaining a satisfactory nutritional status. Muscle mass is a noteworthy indicator for nutritional assessment. We monitor the evolution of the patient's lean body mass index (LTI) and fat mass index (FTI) every six months using impedancemetry. The results are analyzed at each staff EPP. FTI averaged 15.85 kg, while LTI averaged 11.34 kg.

Handgrip tests are performed every six months. They assess muscle function and can be used as a phenotypic criterion for diagnosing undernutrition in adults (N = >26 kg in men and >16 kg in women, according to HAS [6]). In our center, the average HGS is 28.92 kg in men and 16 kg in women.

We did not find any studies similar to ours in the literature, allowing us to compare results. Nevertheless, it is well accepted that the implementation of good practice indicators in peritoneal dialysis patients helps to improve their quality of life and prognosis [7].

The regular monitoring of various health indicators is essential to ensure the long-term success of dialysis management without neglecting the need to educate patients and encourage them

to stick to their medication recommendations over time, thereby limiting the risk of treatment fatigue [8].

CONCLUSION

The EPP is part of a drive to improve the quality and safety of care. It is vital to make this initiative a permanent fixture so as to maintain consistency in therapeutic management among doctors, nurses, and other health-care professionals. Multidisciplinary staff meetings enable the sharing of knowledge and expertise. It is also a time for exchange among different health-care professionals for the primary benefit of dialysis patients.

Declaraton of interest

The author declares no conflict of interest.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

- 1 - Critères d'évaluation des pratiques professionnelles (EPP) : https://www.has-sante.fr/jcms/c_438005/fr/criteres-d-evaluation-des-pratiques-professionnelles-epp
- 2 - Doleman, G., & Twigg, D. (2022). Development, implementation and evaluation of a Professional Practice Model: A scoping review. *Journal of nursing management*, 30(7), 3519–3534. <https://doi.org/10.1111/jonm.13820>
- 3 - Décret n° 2005-346 du 14 avril 2005 relatif à l'évaluation des pratiques professionnelles : <https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000000810646>
- 4 - Issad B, Griuncelli M, Verger C, Rostoker G. Que nous apprend le "Module Anémie" du Registre de dialyse Péritonéale de langue Française (RDPLF) ? Intérêt et Résultats. *Bull Dial Domic* [Internet]. 6 sept. 2019 [cité 7 sept. 2024];2(3):143-9. Disponible sur DOI : <https://doi.org/10.25796/bdd.v2i3.20983>
- 5 - Azar R, Coevoet V. Acid base status of prevalent peritoneal dialysis patients: RDPLF data. *Bull Dial Domic* [Internet]. 2018 Mar. 13 [cited 2024 Nov. 29];1(1):21-5. available: <https://doi.org/10.25796/bdd.v1i1.31>
- 6 - Diagnostic de dénutrition : les nouveaux critères de la Haute Autorité de Santé [Internet] [cité 19 sept. 2024]; <https://lescnocontroladenutrition.fr/diagnostic-de-denuitrition-les-nouveaux-criteres-de-la-haute-autorite-de-sante>
- 7 - Dratwa M, Verger C. Recommandations de pratique de la Société internationale de dialyse péritonéale: prescrire une dialyse péritonéale de haute qualité dirigée par un objectif : Traduction des recommandations de l'ISPD Janvier 2020. *Bull Dial Domic* [Internet]. 9 avr. 2020 [cité 19 sept. 2024];3(1):5-18. Disponible sur: <https://doi.org/10.25796/bdd.v3i1.54453>
- 8 - van Eck van der Sluijs, A., Vonk, S., van Jaarsveld, B. C., Bonenkamp, A. A., & Abrahams, A. C. (2021). Good practices for dialysis education, treatment, and eHealth: A scoping review. *PloS one*, 16(8), e0255734. <https://doi.org/10.1371/journal.pone.0255734>