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Research article

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A study of knowledge attitude and practice regarding management of anemia in dialysis personnel

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ABSTRACT

Background

A common complication in patients undergoing dialysis is anemia. Anemia if untreated might cause serious health problems. This is a KAP study that evaluates the management of anemia in patients undergoing dialysis among the dialysis personnel.

Methodology

A cross-sectional observational study was done on the dialysis personnel in the nephrology unit at Saveetha Medical College and Hospital during the period January-March 2019, using a questionnaire.

Results

This study shows that the dialysis personnel at Saveetha Medical College and Hospital have moderate knowledge on management of anemia in patients undergoing dialysis. The study also showed positive significant association between years of experience and level of knowledge. It also showed that the students have better knowledge compared to nurses and the nurses had better practice knowledge compared to the students.

Conclusion

The study showed that the dialysis personnel in our unit have moderate knowledge regarding the management of anemia among the patients undergoing dialysis. Various studies show that adequate knowledge on anemia management is necessary to prevent cardiovascular complications and to promote a healthy lifestyle. Effective treatment with ESA and IV iron is required to maintain the health of the patients.

INTRODUCTION

Chronic kidney disease is a public health problem with increasing incidence. Anemia is one of the most important complications in patients with CKD undergoing dialysis and its prevalence increases as estimated glomerular filtration rate (eGFR) decreases [1]. According to the Kidney

Disease Outcome Quality Initiative (KDOQI) guidelines anemia is diagnosed when Hb concentration is less than 13.5g/dl in adult men and 12.0g/dl in adult women [2]. Anaemia aggravates the cognitive competence, exercise tolerance and the quality of life in dialysis patients [3]. It is also strongly predictive of complications and death from cardiovascular causes in patients with chronic

kidney disease undergoing dialysis [4] because of which the management of anemia plays an important role. The management of anemia can be challenging due its inter individual variability to erythropoietic response [5] Also, effective treatment of iron deficiency anemia is critical for patients but can be challenging for nurses and staff members because proper management requires a balance between Erythropoiesis stimulating agents and intravenous iron therapy[6].This is a questionnaire based study which evaluates the management of anaemia in those undergoing dialysis by dialysis personnel in terms of their knowledge, attitude and practice outcomes

on the dialysis personnel in the Nephrology dialysis unit from January-March 2019.All these patients were counselled regarding their disease prognosis and management options before initiation on haemodialysis by the respective consulting nephrologist in a busy out-patient department that caters to approximately 400 out-patients per week. The knowledge, attitude and practice of the dialysis personnel was evaluated based on a questionnaire [APPENDIX 1] that carried 25 questions in which the dialysis personnel were tested in the following areas: chronic kidney disease, Hemodialysis, anemia and the treatment options available. The answer of each patient for each question were recorded and analysed using SPSS software version 19.

METHODOLOGY

A cross sectional observational study was conducted at Saveetha Medical College, Chennai

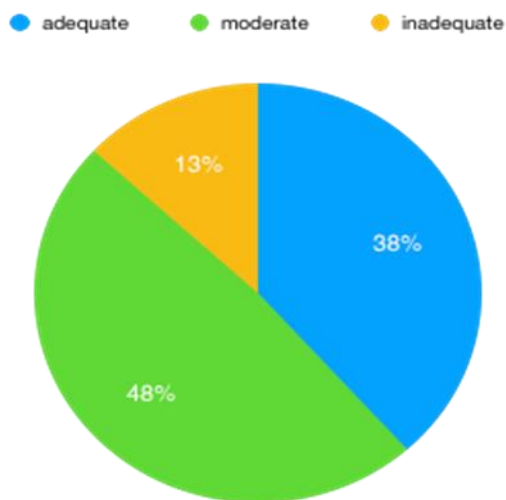
OUTCOMES AND MEASUREMENT

Demographics	Number
Mean age	
26	60
Gender	
M:F	1:2
Educational qualification	
Student	30
Nurses	16
Dialysis technologist	14
Years of experience	
0	30
1-3 years	19
>4 years	11

Dialysis personnel were awarded 1 point for each correct answer for a total of 23 questions.

Based on the no. of correct answers they were divided into 3 categories.

NO.OF CORRECT ANSWERS	CATEGORY	INFERENCE
>20	1	Adequate
17-20	2	Moderate
Below 17	3	Inadequate



RESULT

The study was conducted on the dialysis personnel in the nephrology dialysis unit which included 60 members among which 20 were males and 40 were females. It was found that they have more knowledge in areas which included frequency of dialysis, prophylactic iron therapy and less knowledge in areas pertaining to dialysate and case scenarios. The p value showed significant association between years of experience and level

of knowledge among dialysis personnel (p value-0.01) it also showed association between educational qualification and level of knowledge. The students were able to answer more knowledge questions (p value-0.05) and the dialysis technologist and nurse were found to answer more practice question. There was no significant association between gender, age and level of knowledge.

Question numbers	No.of correct answers
1	86%
2	50%
3	86%
4	95%
5	95%
6	63%
7	86%
8	91%
9	91%
10	45%
11	61%
12	56%
13	38%
14	96%
15	95%
16	78%
17	85%
18	90%
19	90%
20	43%
21	90%
22	78%
23	75%

24	48%
25	50%

DISCUSSION

It was found that 38% belonged to the first category 48% in the second category and 13% in third. This shows that the dialysis personnel have moderate knowledge on management of anemia in patients undergoing dialysis. This is attributed to the fact that there's lack of an individualised approach. Although there's increase in Hb levels on ESA administration various factors that include route of administration, pharmacokinetics, dosing frequency should be considered to maximise the benefits for individual patients [7]. The other important cause is a lack of step by step correction of anemia, Diminishing erythropoietin production maybe the primary cause for anemia in CKD but also involves deficiency of iron, vitamin B12 and folate, hyperparathyroidism, uremic environment, inflammation and hypothyroidism [8].

This study also shows positive association between years of experience and level of knowledge among the nurses and dialysis technologist. This is attributed to their hands-on experience and clinical techniques and this type of knowledge is embedded in practice and is indeed referred to as the art of nursing [9]. Benner, in his study of expert nurses quotes that practice is a source of knowledge on its own because in practice knowledge is not just used but is also developed [10]. There also a significant association between students and the level of knowledge this is because they are still in the learning process and they learn from the experience of others. There is no significant association between gender age and level of knowledge, this may be due to reduced sample size which is one of the limitations of this study.

The present scenario aims at treating few patients with ESA and more number of patients with intravenous Iron. This is because ESA may be a major mediator of harm and is also linked to Hemoglobin overshooting, ESA -resistance, stroke [11]. The new class of HIF stabilisers (eg: roxadustat) is found to increase Hemoglobin level and iron transport proteins but is still under clinical trials [12]. With various drugs in clinical trials and still evolving options, management of anemia remains crucial due to two main factors, one being choosing the appropriate drug for the person and the other being the awareness among the dialysis

personnel to titre the right dose of the drug and administer it to the patients.

CONCLUSION

Based on the above findings it's evident that dialysis personnel have only moderate knowledge on management of anemia at Saveetha Medical College and Hospital. Authors suggest that organising medical education programs regarding dialysis and management of anemia is necessary for updating the knowledge of the technician which will help in better patients care. With more number of patients reaching end stage renal disease it is vital for the technologist to address the knowledge gap

APPENDIX 1

A study of knowledge attitude and practice regarding management of anaemia in dialysis personnel: Questionnaire

Knowledge

- Do all patients who undergo dialysis develop anemia?
a) Yes b) no
- How is iron level measured in iron deficiency anemia in our hospital
a) Ferritin level b) transferrin saturation c) serum iron
- In iron deficiency anemia is there any dietary iron supplementation required?
a) yes b) no
- What is the dosing of erythropoiesis stimulating agent
- In which stage of CKD anemia develops.
a) stage 1 b) stage 2 c) stage 3 d) stage 4 e) stage 5
- Why is it important to treat anemia
a) heart failure b)stroke c) end organ damage
- What type of erythropoietin is preferred in our hospital
a) erythropoietin alpha b)darbepoetin c)don't know
- 8) How many times in a week a patient comes in for dialysis
a) once b) twice c) thrice

9. Are there any prophylactic administration in patients undergoing dialysis A
a) yes b) no
10. which of the following molecules do not pass through the dialysate
a) sodium b) urea c) albumin
11. The main difference between arteriovenous shunt and arteriovenous fistula is?
a) AVS is entirely within the arm b) AVF is entirely within the arm c) AVF is more likely to become infected
12. Peritoneal dialysis differs from haemodialysis in the following ways
a) PD cannot be done at home b) PD needs both vascular and abdominal access c) PD is by an intra-abdominal catheter
13. 15 minutes before end of dialysis patient complains of nausea and dizziness what is the likely Reason
a) hypotension b) hypertension c) hyperphosphatemia
4. Do you explain the complications of dialysis A
a) yes b) no
5. Are the patient explained about various other procedures available to them A
a) yes b) no
6. Are other precaution advised in patients undergoing dialysis A
a) yes b) no

Practice

1. How is dose of erythropoietin calculated in kidney disease? C
a) Weight b) creatinine clearance c) don't know
 2. How is erythropoietin administered in anemia C
a) Oral b) I.v c) Subcutaneous
 3. What should be the hb level in people undergoing dialysis
a) <12 b) 14 c) 16
 4. Do you perform therapeutic drug monitoring
a) yes b) no
 5. Which lab investigation would you perform for evaluation of anemia in chronic kidney disease?
a) Peripheral blood smear b) Bone marrow biopsy
 6. what should be the effect of correction of anemia of chronic disease and renal failure in transplanted patients?
a) Increases in cvs events b) reduces progression of chronic allograft nephropathy.
1. do you explain the procedure of dialysis A
a) yes b) no
 2. do you educate the person on complications of anemia A
a) yes b) no
 3. Why do you prefer erythropoietin alpha in our hospital B

Attitude

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