

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Prevalence of peritonitis and mortality in ESKD patients treated with chronic peritoneal dialysis in Africa: A systematic review
AUTHORS	Okpechi, Ikechi G; Ekrikpo, Udeme; Moloi, Mothusi; Noubiap, Jean Jacques; Okpechi-Samuel, Ugochi; Bello, A

VERSION 1 – REVIEW

REVIEWER	Jianghua Chen The Kidney Disease Center, The First Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou, Zhejiang, China
REVIEW RETURNED	11-Jun-2020

GENERAL COMMENTS	The main aim of this study was to report the prevalence of peritonitis and mortality in end-stage kidney disease (ESKD) patients treated with chronic peritoneal dialysis (PD) in Africa. The results showed that the peritonitis rates in PD in Africa Remains higher than current recommendations of the ISPD, More attention was needed to improve the quality of PD therapy in Africa.
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REVIEWER	Karine Manera The University of Sydney, Australia
REVIEW RETURNED	28-Aug-2020

GENERAL COMMENTS	This is a very well written and important review that highlights a knowledge gap - that being the prevalence and trends of critical PD outcomes in Africa. A few very minor comments as follows: For modality groupings, under Data extraction and assessment of study quality you state that 'We grouped studies based on the type of PD utilized (CAPD only or CAPD+APD)', however in Statistical Analysis and the rest of the manuscript the groupings are done by 'CAPD only studies, CAPD+APD/NIPD studies and APD-only studies'. The sentence in the discussion 'AKI patients treated with PD Africa' needs to be rewritten '...with PD in Africa'
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REVIEWER	Chow Kai Ming Prince of Wales Hospital, Hong Kong
REVIEW RETURNED	20-Oct-2020

GENERAL COMMENTS	<p>This is a straightforward descriptive study of peritonitis rate and outcome in African peritoneal dialysis patients, based on a literature search of published studies (mostly retrospective). The data source refers to 17 studies (less than half were rated as high methodological quality) from 7 countries, with an overall median peritonitis rate of 0.75 episodes per patient year. To put the figures in global perspective, the overall peritonitis rates were 0.40 in Thailand, 0.35 in Australia / New Zealand, 0.26 in the United States.</p> <p>Few points are worthy of note:</p> <ol style="list-style-type: none"> 1. The relevance of peritonitis rate in a continent might not be relevant to other readers unless there are lessons to be learnt. For example, is there relationship between peritonitis rate and the dialysis practice pattern? What about the relationship or association with the facility size? 2. In this study, the peritonitis rates were reported in the standard manner, namely, as number of episodes per patient-year. Instead of median peritonitis rate, the mean peritonitis rates should better be reported, as what is conventionally reported, say, as in the Peritoneal Dialysis and Outcomes Practice Patterns Study (PDOPPS). 3. I understand the number of low-income countries (LIC) is high in this cohort. How about difference between LIC and LMIC? Or difference of peritonitis related to gross domestic product (GDP)? 4. The relatively high peritonitis rate in pediatric population could have been secondary to a lack of pediatric nephrology expertise. Does this apply to the countries involved in this study cohort?
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

1. The main aim of this study was to report the prevalence of peritonitis and mortality in end-stage kidney disease (ESKD) patients treated with chronic peritoneal dialysis (PD) in Africa. The results showed that the peritonitis rates in PD in Africa Remains higher than current recommendations of the ISPD, More attention was needed to improve the quality of PD therapy in Africa.

Response: Thanks as there are no specific comments for us to revise

Reviewer: 2

This is a very well written and important review that highlights a knowledge gap - that being the prevalence and trends of critical PD outcomes in Africa.

Response: Thanks

A few very minor comments as follows:

1. For modality groupings, under Data extraction and assessment of study quality you state that 'We grouped studies based on the type of PD utilized (CAPD only or CAPD+APD)', however in Statistical Analysis and the rest of the manuscript the groupings are done by 'CAPD only studies, CAPD+APD/NIPD studies and APD-only studies'.

Response: Thank you for this observation. This has been corrected in the methods section (Data extraction and assessment of quality sub-section).

2. The sentence in the discussion 'AKI patients treated with PD Africa' needs to be rewritten '...with PD in Africa'

Response: This has been corrected. The word "in" inserted between PD and Africa on Page 11 of the manuscript.

Reviewer: 3

1. The relevance of peritonitis rate in a continent might not be relevant to other readers unless there are lessons to be learnt. For example, is there relationship between peritonitis rate and the dialysis practice pattern? What about the relationship or association with the facility size?

Response: We thank the reviewer for this comment, and it is correct that the relevance of peritonitis rate in Africa to a reader from outside Africa may be lost if there are no lessons to be learnt. However, we did provide in the discussion some of the factors associated with low PD utilization in Africa, including "high cost or unavailability of PD fluids, unavailability of PD catheters, patient unwillingness, reimbursement of physicians and high rates of peritonitis and other PD catheter-related infections" Thus, we allude that high peritonitis rate is a major cause of low PD utilization in Africa. If this can be sufficiently addressed, PD use will improve significantly in Africa.

2. In this study, the peritonitis rates were reported in the standard manner, namely, as number of episodes per patient-year. Instead of median peritonitis rate, the mean peritonitis rates should better be reported, as what is conventionally reported, say, as in the Peritoneal Dialysis and Outcomes Practice Patterns Study (PDOPPS).

Response: Thank you. We reported the peritonitis rate using the ISPD guidelines. It was not always possible to get all the information needed to work out the mean peritonitis rate per study.

3. I understand the number of low-income countries (LIC) is high in this cohort. How about difference between LIC and LMIC? Or difference of peritonitis related to gross domestic product (GDP)?

Response: All the countries in this review except one (Sudan) are lower middle-income countries hence such comparison will not be possible as they are all well within the same GDP category.

4. The relatively high peritonitis rate in pediatric population could have been secondary to a lack of pediatric nephrology expertise. Does this apply to the countries involved in this study cohort?

Response: We thank the reviewer for this comment which we believe may be correct from anecdotal evidence. We have added this comment in the discussion:

"One of the reasons for a higher prevalence of peritonitis in paediatric age groups may be due to the lack of pediatric nephrologists in several African countries, as children with kidney disease are often treated by general pediatricians, nephrologists who treat adults, or nurses.³⁸ One survey conducted by the International Pediatric Nephrology Association (IPNA) showed that 100% of respondents from Africa reported mild to severe shortages (72% reported severe shortages) of paediatric nephrologists compared to 42% of respondents in Europe and 72% of respondents in Asia.³⁹ Although the implications of such shortages on peritonitis rates in children have not been studied, it is possible that there is an association. Strategies to improve paediatric nephrology workforce in the continent should be further addressed."

VERSION 2 – REVIEW

REVIEWER	Chow Kai Ming Prince of Wales Hospital, Hong Kong
REVIEW RETURNED	05-Dec-2020

GENERAL COMMENTS	<p>I thank the effort of authors for revising the descriptive study of peritonitis rate and outcome in African peritoneal dialysis patients. In brief, there was an overall median peritonitis rate of 0.75 episodes per patient year. As mentioned in my previous review from a global perspective, the overall peritonitis rates were 0.40 in Thailand, 0.35 in Australia / New Zealand, 0.26 in in the United States. This was also highlighted in the Discussion mentioning “crude peritonitis rate to be 0.28 episodes per patient year” from the PDOPPS.</p>
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