



THE AGA KHAN UNIVERSITY

eCommons@AKU

Section of Nephrology

Department of Medicine

4-2020

Peripherally inserted central catheters (PICC) use in patients with chronic kidney disease (CKD)

Sonia Yaqub

Aga Khan University, sonia.yaqub@aku.edu

Muhammad Raheel Abdul Razzaque

Aga Khan University

Follow this and additional works at: https://ecommons.aku.edu/pakistan_fhs_mc_med_nephrol



Part of the [Nephrology Commons](#)

Recommended Citation

Yaqub, S., Abdul Razzaque, M. R. (2020). Peripherally inserted central catheters (PICC) use in patients with chronic kidney disease (CKD). *JPMA. The Journal of the Pakistan Medical Association*, 70(4), 771-771.

Available at: https://ecommons.aku.edu/pakistan_fhs_mc_med_nephrol/65

Peripherally inserted central catheters (PICC) use in patients with chronic kidney disease (CKD)

Sonia Yaqub, Muhammad Raheel Abdul Razzaque

Madam, the use of peripherally inserted central catheters (PICC) has expanded rapidly in recent years. PICCs are perceived to be a safe and effective form of venous access with certain advantages over others such as ease of placement, lower rate of complications compared to non-tunnelled central venous catheters, and longevity allowing home administration of drugs. However, a large number of complications associated with PICCs are being recognized increasingly such as thromboembolism and trauma to the vessels eventually causing central venous stenosis. This can have very significant implications for patients suffering from chronic kidney disease (CKD) who are at risk for progression to kidney failure and eventually require haemodialysis (HD).¹ It is of paramount importance to maintain integrity of veins to provide a future haemodialysis vascular access for these patients. PICC lines may cause local trauma to vessels and hence may preclude future vascular access creation and its longevity. Due to multiple comorbid conditions, patients with CKD are more likely to have PICCs potentially increasing their risk for loss of veins.² A strong and independent association between PICC use and lack of a functioning arterio-venous fistula has been proven in a case-control study of HD patients.³ Guidelines have been developed by various societies to prevent future access failure in CKD patients. The American Society of Nephrology, National Kidney Foundation Kidney Disease Outcomes Quality Initiative (KDOQI) and the Fistula First Breakthrough Initiative (FFBI) recommend against PICC use in patients at risk for or with known stage 3, stage 4 or 5 CKD without consulting a nephrologist.⁴⁻⁶

It is essential to understand that vein protection must begin long before initiation of HD is needed. It cannot be over emphasized that the potential long-term consequences of the PICCs must be weighed against their short-term convenience in CKD patients. The ultimate

responsibility lies with nephrology community to educate non-nephrologist clinicians about the need to have vein protection strategies aimed at preserving future HD access. Moreover, given the fact that PICC insertion occurs most commonly in the hospital setting, there is a pressing need to apprise the practitioners/clinicians of careful selection of patients. Furthermore, there is a need for the interventionists who place the lines to be aware of and to adhere to afore mentioned guidelines. At institutional level, policies and protocols that require nephrology consultation for any PICC request in patients with CKD may be considered and implemented. This may require a collaborative approach among physicians from various specialties and could be facilitated with electronic alerts in hospitals where electronic health records are in use. Last but not the least, awareness needs to be created among patients suffering from CKD and their family members about the potential risks and avoidance of PICCs.

Disclaimer: None to declare.

Conflict of Interest: None to declare.

Funding Disclosure: None to declare.

References

1. Chopra V, Flanders SA, Saint S. The problem with peripherally inserted central catheters. *JAMA*. 2012; 308:1527-8.
2. McGill RL, Tsukahara T, Bhardwaj R, Kapetanos AT, Marcus RJ. Inpatient venous access practices: PICC culture and the kidney patient. *J Vasc Access*. 2015; 16:206-10.
3. El Ters M, Scheers GJ, Taler SJ, Williams AW, Albright RC, Jenson BM, et al. Association between prior peripherally inserted central catheters and lack of functioning arteriovenous fistulas: a case-control study in hemodialysis patients. *Am J Kidney Dis*. 2012; 60:601-8.
4. Williams AW, Dwyer AC, Eddy AA, Fink JC, Jaber BL, Linas SL, et al. Critical and honest conversations: the evidence behind the "Choosing Wisely" campaign recommendations by the American Society of Nephrology. *Clin J Am Soc Nephrol*. 2012; 7:1664-72.
5. Vascular Access Work Group. Clinical practice guidelines for vascular access. *Am J Kidney Dis*. 2006; 48:S248-73.
6. Fistula First Breakthrough Initiative: National Vascular Access Improvement Initiative. [Online] [Cited 2016 May 16]. Available from: URL: <http://www.fistulafirst.org/>.

Department of Medicine, Aga Khan University Karachi, Pakistan.

Correspondence: Sonia Yaqub. Email: sonia.yaqub@aku.edu

<https://doi.org/10.5455/JPMA.55207>