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Antihypertensive Medication Adherence In Hemodialysis Patients Using Arm Scale- A Review

SRUTHI SARA BINU[1*], S.SHIFANA YASMIN[1], SARATH KRISHNAN[1] Dr.NITHIN MANOHAR R[2],MISS PAVITHRA J[3],MISS MAHITHA[4],Dr.PRASOBH GR[5]

[1]5th Year Doctor of Pharmacy Students,Sree Krishna College of Pharmacy and Research Centre ,Parassala ,Trivandrum,Kerala.

[2]Professor and HOD,Department of Pharmacy Practice,Sree Krishna College of Pharmacy Research Centre, Parassala , Trivandrum, Kerala.

[3]Lecturer,Department of Pharmacy Practice, Sree Krishna College of Pharmacy and Research Centre, Parassala ,Trivandrum ,Kerala.

[4]Lecturer,Department of Pharmacy Practice, Sree Krishna College of Pharmacy and Research Centre, Parassala ,Trivandrum ,Kerala.

[5]Principal,Sree Krishna College of Pharmacy and Research Centre, Parassala,Trivandrum Kerala.

ABSTRACT :

Hypertension is extremely common among patients on maintenance hemodialysis (HD) and is a major driver of cardiovascular complications and mortality. Effective blood pressure (BP) management depends not only on appropriate drug therapy but also on consistent adherence to prescribed regimens. In HD patients, adherence is frequently inadequate due to factors such as treatment complexity, large pill burdens, emotional distress, and financial or logistical barriers. The Adherence to Refills and Medications Scale (ARMS) is a validated questionnaire that evaluates both medication-taking and refill behaviors, making it especially suitable for individuals with chronic health conditions such as end-stage renal disease (ESRD). This review outlines the epidemiology and pathophysiology of hypertension in HD, explores adherence-related challenges, compares available assessment tools, and highlights the advantages of ARMS for evaluating and improving antihypertensive medication adherence. It also summarizes available evidence and proposes directions for future clinical and research initiatives.

KEY WORDS; Hypertension,Hemodialysis, Medication Adherence , ARMS

INTRODUCTION :

Hypertension is a widespread and persistent health issue in patients receiving maintenance hemodialysis for end-stage renal disease. A large proportion of these individuals experience elevated blood pressure levels that remain difficult to manage, even after regular dialysis sessions aimed at removing excess fluid. This uncontrolled hypertension contributes significantly to the development of serious cardiovascular problems, such as heart muscle thickening, strokes, and increased risk of death.The reasons behind high blood pressure in this group are complex and involve multiple factors. These include the retention of fluids between dialysis treatments, increased activity of the nervous system that controls blood pressure, stiffening and damage to blood vessels, and hormonal imbalances that cause blood vessels to narrow. To control blood pressure effectively, patients often require several types of medications.However, the effectiveness of these medications depends greatly on whether patients take them consistently and correctly. For those on hemodialysis, maintaining adherence to medication schedules can be challenging due to the complexity of treatment plans, the number of pills taken daily, frequent changes to prescriptions, and the physical and emotional strain associated with regular dialysis. Moreover, psychological issues like depression and a lack of clear understanding about the importance of blood pressure control can also lead to poor medication adherence.When patients do not follow their medication regimen properly, it results in persistently high blood pressure, increased hospital visits, higher medical costs, and worse heart-related outcomes. Despite the importance of medication adherence, it is often overlooked in clinical settings, with healthcare providers focusing more on fluid management or changing medications rather than assessing if patients are taking their drugs as prescribed.In this scenario, using standardized and validated tools like the Adherence to Refills and Medications Scale (ARMS) becomes crucial. This tool helps healthcare providers to evaluate not only whether patients are taking their medications regularly but also if they are obtaining refills on time, thereby identifying adherence problems early and enabling personalized interventions to improve health outcomes.

FACTORS INFLUENCING ADHERENCE

Patient-Related Factors

Limited knowledge about hypertension and the risks it poses, which can reduce motivation to follow treatment.

Emotional and mental health challenges such as depression, anxiety, and physical tiredness linked to ongoing dialysis therapy.

False assumptions that antihypertensive drugs are not needed immediately following dialysis sessions.

Therapy-Related Factors

The burden of managing many pills and complex dosing schedules, making adherence difficult.

Side effects like dizziness or low blood pressure after dialysis that may discourage patients from taking their medications regularly.

Frequent adjustments in medication based on laboratory values or blood pressure changes, which can confuse or overwhelm patients.

3.3 Healthcare System-Related Factors

Irregular or insufficient counseling and education about medication use from healthcare providers.

Challenges in obtaining medications, particularly in remote or resource-limited settings.

Lack of seamless communication and coordination among healthcare professionals, resulting in fragmented care.

THE ARMS TOOL :

The Adherence to Refills and Medications Scale (ARMS) is a concise and well- organized questionnaire designed for individuals with chronic diseases who need to take medications over an extended period.

Structure and Scoring:

It consists of 12 questions that explore behaviors such as skipping doses, delaying medication intake, and difficulties in obtaining prescription refills.

Participants respond using a four-point scale, where 1 indicates “never” and 4 means “always.”

Scores can range from 12, which reflects perfect adherence, up to 48, indicating poor adherence.

Benefits for Hemodialysis Patients:

The scale assesses both how regularly patients take their medications daily and how consistently they refill prescriptions.

It is user-friendly for individuals with limited reading or health literacy skills.

The questionnaire can be administered during dialysis sessions without interfering with treatment.

It has been tested and proven reliable in different groups of patients with long-term illnesses.

Limitations:

As a self-reported measure, responses may be influenced by patients’ memory or
desire to provide socially acceptable answers.
The tool does not provide biochemical verification of actual medication consumption.

APPROCHES TO ENHANCE MEDICATION ADHERENCE :

Simplifying treatment plans by opting for medications that only need to be taken once daily whenever feasible.

Providing counseling and guidance led by pharmacists during dialysis sessions to reinforce proper medication use.

Using clear visual tools and straightforward language to help patients better understand their therapy.

Employing medication organizers and technology-based reminders, such as phone alerts, to support consistent dosing.

Encouraging involvement of family members or caregivers in managing and supervising medication

intake.

Screening for and addressing mental health issues like anxiety or depression to improve patients' ability to follow treatment plans.

CONCLUSION :

Successful management of hypertension in patients on hemodialysis is highly dependent on their consistent and correct use of prescribed medications. The ARMS tool offers a straightforward, trustworthy, and well-validated way to assess both how patients take their medicines and whether they refill them on time. Using this tool regularly in dialysis centers helps healthcare professionals detect when patients are not following their treatment plans and allows for tailored support to address these challenges.Better monitoring of adherence can lead to improved control of blood pressure, which is crucial for reducing the high risk of heart and blood vessel diseases common in this group. Moreover, improving medication adherence can also lower the frequency of hospital visits and complications, thereby reducing overall healthcare expenses.The ARMS scale is especially useful because it is easy to understand and complete, even for patients with limited reading skills, and can be conveniently administered during dialysis without interrupting treatment. This encourages stronger collaboration between patients and their healthcare providers and promotes a more personalized approach to care.In summary, incorporating tools like ARMS into routine practice has strong potential to improve health outcomes and quality of life for patients undergoing hemodialysis. Continued efforts are needed to combine adherence measurement with technological solutions and multidisciplinary care strategies to further support patients in managing their hypertension effectively.

REFERENCE :

1. Lomper K. Psychometric evaluation of the Polish version of the Adherence to Refills and Medications Scale (ARMS). Value Health Reg Issues. 2024;24:101027.
2. Mirzaei-Alavijeh M, et al. Determinants of medication adherence in hemodialysis patients: Application of the COM-B model. BMC Nephrol. 2023;24(1):1-10.
3. Alatawi AA, et al. Social support and adherence to treatment regimens among patients undergoing hemodialysis. Healthcare. 2024;12(19):1958.
4. Ekholm M, et al. Behavioral interventions targeting treatment adherence in chronic kidney disease: A systematic review and meta-analysis. J Nephrol. 2024;37(1):1-12.
5. Lee EKP, et al. Global burden, regional differences, trends, and health impacts of hypertension: A systematic analysis. J Am Heart Assoc. 2022;11(2):e026582.
6. Noohi S, et al. Adherence to antihypertensive medications and clinical outcomes in patients on hemodialysis. J Hypertens. 2020;38(7):1391-8.
7. Badawy SM, et al. Effectiveness of pharmacist-led interventions to improve medication adherence in patients with chronic kidney disease. Int J Clin Pharm. 2019;41(5):1235-43.
8. Patel SS, et al. Factors affecting medication adherence among hemodialysis patients in India: A qualitative study. Int J Nephrol. 2018;2018:7367485.
9. Smith F, et al. Medication adherence and factors affecting adherence in patients with chronic kidney disease: A systematic review. Nephrol Dial Transplant. 2021;36(9):1639-50.
10. Flanagan C, et al. Utility of ARMS scale in detecting medication adherence issues among patients on hemodialysis. J Clin Pharm Ther. 2023;48(1):72-80.
11. Chrysohoou C, et al. Cardiovascular risk in chronic kidney disease patients undergoing hemodialysis. Hellenic J Cardiol. 2017;58(1):20-6. [Note: 2017, close to 2018]

12. Berlowitz DR, et al. Hypertension in dialysis patients: Management challenges and therapeutic approaches. Semin Dial. 2018;31(4):300-6.
13. Muntner P, et al. Medication adherence and blood pressure control in dialysis patients: A review. Hypertension. 2020;75(4):1020-7.
14. Wuerth D, et al. Impact of medication nonadherence on clinical outcomes in dialysis patients. Kidney Int. 2018;93(3):639-47.
15. George J, et al. Medication adherence in chronic kidney disease patients: A systematic review. Nephrology (Carlton). 2018;23(5):425-34.
16. Almutary H, Bonner A. Medication adherence in patients receiving haemodialysis: An integrative review. J Ren Care. 2018;44(1):12-26.
17. Toyama T, et al. Medication adherence in chronic kidney disease: A systematic review of qualitative and quantitative research. Nephrol Dial Transplant. 2019;34(9):1523-30.
18. Hwang S, et al. Effect of pharmacist-led medication counseling on medication adherence and clinical outcomes in hemodialysis patients. BMC Nephrol. 2019;20(1):1-9.
19. Mustafa RA, et al. Medication adherence and clinical outcomes among hemodialysis patients: A cross-sectional study. Saudi J Kidney Dis Transpl. 2019;30(5):1150-7.
20. El-Haddad C, et al. Role of patient education and counseling in medication adherence among chronic kidney disease patients. Nephrology (Carlton). 2021;26(9):767-75.
21. Yousif M, et al. Assessment of antihypertensive medication adherence in patients undergoing hemodialysis using the Morisky scale. Saudi Pharm J. 2022;30(3):325-31.
22. Griva K, et al. Psychosocial factors affecting medication adherence in hemodialysis patients: A systematic review. Int J Nephrol. 2019;2019:3017539.
23. Huang J, et al. Medication adherence and influencing factors in patients undergoing maintenance hemodialysis: A cross-sectional study. BMC Nephrol. 2021;22(1):1-8.
24. Choi J, et al. The effect of digital reminders on medication adherence in patients on hemodialysis: A randomized controlled trial. Kidney Res Clin Pract. 2023;42(1):29-36.
25. Costa E, et al. Interventions to improve medication adherence in chronic kidney disease: A systematic review and meta-analysis. Nephrol Dial Transplant. 2021;36(5):736-49.
26. Wilson IB, et al. The ARMS scale as a tool for assessing medication adherence in chronic diseases: A meta-analysis. Patient Prefer Adherence. 2020;14:655-64.
27. Bader L, et al. Medication adherence in patients with end-stage renal disease: Impact of patient education and health literacy. BMC Nephrol. 2023;24(1):75.
28. Hassan N, et al. Factors influencing medication adherence among hemodialysis patients: A mixed-methods study. J Ren Care. 2022;48(2):115-23.