Letter to Editor

Why angiotensin converting enzyme inhibitors and angiotensin II receptor blockers are not prescribed in the management of hypertension among hemodialysis patients in India

Despite of well-established clinical advantages of angiotensin converting enzyme inhibitors (ACEIs) and angiotensin II receptor blockers (ARBs) among hemodialysis patients, they are seldom prescribed. The prevalence of end-stage renal disease (ESRD) is increasing in India due to diabetes, hypertension, and ageing population. Hypertension is major morbidity affecting 90% of patients on hemodialysis, which is often poorly controlled.[1] According to Kidney Disease Outcomes Quality Initiative clinical practice guidelines, ACEIs and ARBs are the first line choice in chronic kidney disease patients.[2] Numerous clinical studies have been proven the importance of ACEIs and ARBs in reduction of morbidity and mortality; however in India, nephrologists are reluctant and prescribe sparingly ACEIs and ARBs in ESRD patients on hemodialysis.[3,4] This lack of enthusiasm by the nephrologists is attributed to poor infrastructure in terms of monitoring of hyperkalemia, which is mandatory for ACEIs and ARBs regimens. It is a well-known fact that ACEIs and ARBs were associated with an amplified risk of hyperkalemia in hemodialysis patients, possibly due to blocking the extra renal potassium loss.[5] Increased levels of potassium in extracellular fluid and serum can cause muscle weakness effecting contraction in skeletal muscle, and in cardiac tissue leading to arrhythmia, and cardiac arrest. Due to poor kidney function, the elimination of ACEIs and ARBs is effected and residence time of these drugs gets effected leading to alteration in pharmacokinetic/pharmacodynamic profiles. However, the elimination of various ACEI by hemodialysis is in the order of, lisinopril 50%, benazepril 20-50%, enalapril 35%, ramipril <30%, fosinopril <10%, captopril (yes) respectively. On the contrary elimination of ARBs is not possible by hemodialysis.[5]

The distributions of the sociodemographic of hemodialysis in India indicate high prevalence of patients from urban and semi urbanites with low economic status.[6] The infrastructure and cost of hemodialysis are prohibitive for prescribing ACEIs and ARBs. The management of hypertension and ESRD should go hand in hand along with the patient compliance and increased hours of hemodialysis (8 h need to be increased to 12 h). It seems the nephrologists in India feels handicapped to prescribe ACEIs and ARBs, which mandates to monitoring potassium levels with patient education regarding dietary intake of potassium. Hence in practice, ACEIs and ARBs are not popular even though, there is a significant clinical benefit over conventional antihypertensive. The adequate facilities of hemodialysis and patient education are limiting the prescribing of ACEIs and ARBs.

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Access this article online	
Website: www.jbclinpharm.org	Quick Response Code
DOI: 10.4103/0976-0105.134987	

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