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Original Research Paper

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TO EVALUATE HEARING STATUS IN PATIENTS WITH CHRONIC KIDNEY DISEASE UNDERGOING HEMODIALYSIS.

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ABSTRACT **Aim-** To evaluate hearing status in patients with chronic kidney disease undergoing hemodialysis. **Materials and Methods-** A hospital-based cross-sectional observational study was conducted in patients diagnosed with CKD undergoing maintenance hemodialysis. **Results-** Sensorineural hearing loss was predominantly bilateral and symmetrical, with high-frequency hearing loss being the commonest pattern observed. **Conclusion-** Sensorineural hearing loss is a common but often underdiagnosed complication in CKD patients undergoing hemodialysis. Regular audiological screening and early intervention are recommended .

KEYWORDS : Chronic Kidney Disease; Hemodialysis; Sensorineural Hearing Loss; Pure Tone Audiometry;

INTRODUCTION

Chronic kidney disease (CKD) is a major global health burden with steadily increasing prevalence and morbidity. Hearing impairment, particularly sensorineural hearing loss (SNHL), is increasingly recognized as an important extra-renal manifestation of CKD. .[1]The stria vascularis of the cochlea and renal tubular epithelium possess similar ion transport systems, particularly Na+/K+-ATPase activity, making them vulnerable to similar pathological insults.[2] Uremic toxins, oxidative stress, electrolyte imbalance, microvascular ischemia, and exposure to ototoxic medications contribute significantly to cochlear dysfunction in CKD patients.[3]

Aim and Objectives

Aim

To evaluate hearing status in patients with chronic kidney disease undergoing hemodialysis.

Objectives

- To determine the incidence of hearing loss among CKD patients receiving hemodialysis.
- To assess the pattern and severity of sensorineural hearing loss in CKD patients on hemodialysis.
- To correlate hearing loss with duration and frequency of hemodialysis.

MATERIALS AND METHODS

This hospital-based cross-sectional observational study was conducted in the Department of Otorhinolaryngology in collaboration with the Department of Nephrology at Pt. J.N.M. Medical College and Dr. B.R.A.M. Hospital, Raipur.

RESULTS

The majority of patients demonstrated bilateral symmetrical sensorineural hearing loss. High-frequency hearing loss was the predominant audiometric pattern observed.Patients with longer duration of CKD and prolonged hemodialysis exposure had significantly higher hearing thresholds compared to patients with shorter disease duration. Mild-to-moderate SNHL constituted the most common severity pattern.Hearing impairment was more frequently observed among patients with diabetes mellitus and hypertension, suggesting possible microvascular involvement in cochlear pathology.

DISCUSSION

The present study demonstrates a high prevalence of sensorineural hearing loss among CKD patients undergoing maintenance hemodialysis.[5] Vilayur et al. reported that CKD independently increases the risk of hearing loss, with prevalence significantly higher among patients with reduced glomerular filtration rate.[6] Jamaldeen et al. demonstrated predominantly bilateral high-frequency SNHL in hemodialysis patients and observed correlation between dialysis duration and hearing impairment.[7] The underlying mechanisms are multifactorial.

CONCLUSION

Sensorineural hearing loss is a common and clinically significant complication among patients with chronic kidney disease undergoing maintenance hemodialysis. Routine audiological evaluation and early intervention are recommended for CKD patients.

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