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Systemic Installation Response Therapy (SIRT) as a Novel Therapeutic Approach for Peripheral Vestibular Vertigo: A Prospective Double Blinded Interventional Comparative Study

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Abstract

Peripheral vestibular vertigo is a common and a disabling clinical condition. Although conventional medical therapy remains the cornerstone of management, a considerable proportion of patients continue to experience recurrent symptoms, delayed vestibular compensation, or incomplete recovery despite optimal treatment. This unmet clinical need has prompted us to explore novel therapeutic approaches that can enhance central compensation and improve long-term outcomes.

Systemic Installation Response Therapy (SIRT) is an emerging therapeutic intervention designed to modulate physiological, anatomical, biochemical, pathological, psychological, emotional, systemic neurophysiological responses and thus facilitating adaptive vestibular compensation for Vertigo. In this prospective interventional comparative study, patients diagnosed with peripheral vestibular dysfunction were evaluated to assess the clinical effectiveness of SIRT along with standard medical therapy, compared with medical therapy alone.

Patients receiving SIRT demonstrated early symptom resolution, sustained clinical improvement, and a higher proportion of complete recovery compared to those managed with medical therapy alone. Thus SIRT represents a promising therapeutic modality in the management of peripheral vestibular vertigo, with enhanced long-term sustained vestibular rehabilitation outcomes.

Keywords: NIL

Introduction

Vertigo is a frequent presenting complaint in otorhinolaryngology and neurology practice, often resulting from disorders of the peripheral vestibular apparatus. Peripheral vestibular dysfunction can lead to recurrent episodes of giddiness, imbalance, nausea, and fear of movement, thereby significantly impairing their daily activities, work performance, and psychosocial well-being.

Standard treatment modalities include vestibular suppressants, antiemetics, hydration, dietary modification, and vestibular rehabilitation exercises. While these interventions are effective for many patients, a subset continues to experience persistent symptoms or recurrent attacks. Anxiety, maladaptive behavioural responses, and impaired central compensation are increasingly recognized as contributing factors in such patients.

Systemic Installation Response Therapy (SIRT) is a novel integrative therapeutic approach designed to recalibrate maladaptive neuromuscular, cognitive, and behavioral response patterns that may perpetuate vestibular symptoms. Symptom severity and functional improvement were assessed using validated clinical scales, including the Visual Analogue Scale (VAS) and the Vertigo Symptom Scale–Short Form (VSS-SF), with structured follow-up over a one-year period. By facilitating adaptive neuroplastic changes and improving response calibration, SIRT may enhance vestibular compensation and reduce symptom recurrence. However, scientific literature evaluating the role of SIRT in vestibular disorders remains limited. The present study was undertaken to evaluate the efficacy of SIRT as an adjunct to conventional medical therapy in patients with peripheral vestibular vertigo.

Materials And Methods

Study Design and Setting: This prospective therapeutic interventional comparative study was conducted in the Department of Otorhinolaryngology after obtaining approval from the Institutional Ethics Committee. Written informed consent was obtained from all participants prior to enrollment.

Study Population: Fifty adult patients diagnosed with peripheral vestibular dysfunction based on clinical evaluation and subjective vestibular assessment were included. Patients were randomly allocated into two equal groups.

Inclusion Criteria: Adults presenting with vertigo or giddiness as the primary complaint and willing to comply with treatment and follow-up for a minimum period of 12 months.

Exclusion Criteria: Patients with central causes of vertigo identified through neurological evaluation or imaging, recent head trauma, ototoxic drug exposure, prior vestibular rehabilitation or surgical intervention, and incomplete follow-up data were excluded.

Intervention: Group A received SIRT along with standardized medical therapy. SIRT involved systematic evaluation to identify trigger factors, maladaptive neuromuscular responses, behavioral patterns, and cognitive processes associated with vertigo. Targeted installations were administered to recalibrate these responses and validate adaptive replacement of suboptimal patterns. **Group B** received medical therapy alone, including vestibular sedatives, antiemetics, hydration, dietary advice, and etiology-specific medications as per departmental protocol.

Outcome Measures: Patient-reported outcomes were assessed using the Visual Analogue Scale (VAS) and Vertigo Symptom Scale–Short Form (VSS-SF) at baseline and during follow-up visits at 3, 6, 9, and 12 months.

Statistical Analysis

Data were entered and analyzed using IBM SPSS Statistics version 21. Normality of data distribution was assessed using the Shapiro–Wilk test. Independent t-tests were used for intergroup comparisons of baseline characteristics. Repeated-measures ANOVA was applied to evaluate changes in VAS and VSS-SF scores over time within and between groups. A p-value of less than 0.05 was considered statistically significant.

Results

A total of 50 patients were included in the study, with 25 patients in each group.

In Group A which is SIRT + Medical Therapy demonstrated significantly superior outcomes, with 60% of patients achieving complete symptom resolution after a single session of SIRT without need for medical management and remaining 20% of patients were symptom free in subsequent follow up for 90days. Remaining 20% of the patients showed no significant improvement.(Figure-4)

In Group B, 60% of patients experienced symptomatic improvement with continued medical therapy, often requiring intermittent medication for recurrent episodes. 40 % of patients showed no significant improvement during the follow-up period.

Comparative analysis revealed a statistically significant difference in outcome distribution between the two groups ($p < 0.05$). The proportional distribution of outcomes and longitudinal changes in symptom severity scores are illustrated in Figures 1–3. The outcome distribution after SIRT treatment is illustrated in Figure 4.

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Figures

Figure 1. Group-A Symptom free clinical outcome distribution among vertigo patients treated with Systemic Installation Response Therapy (SIRT) over a 12-month follow-up

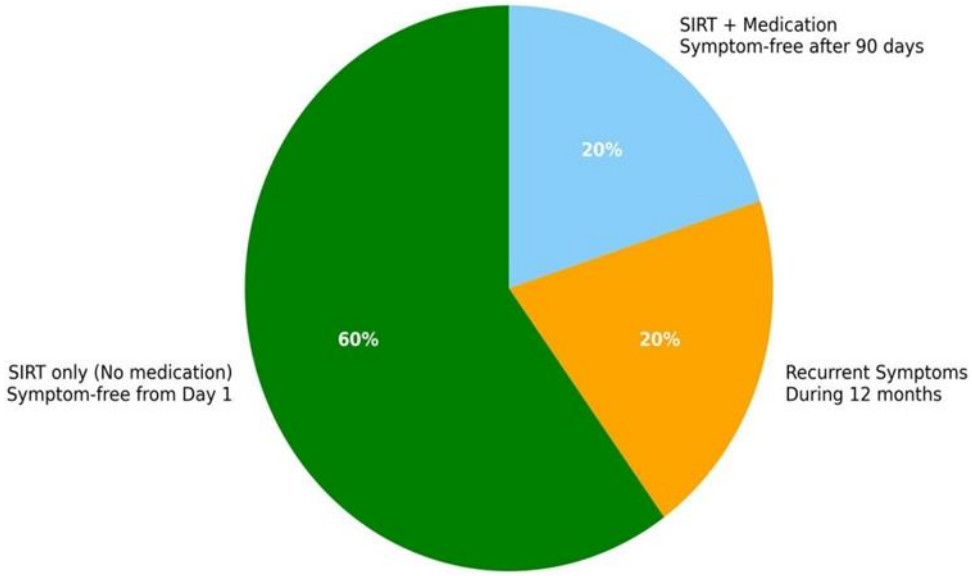

Figure 2. Change in mean VAS scores over 12 months in Group A and Group B.

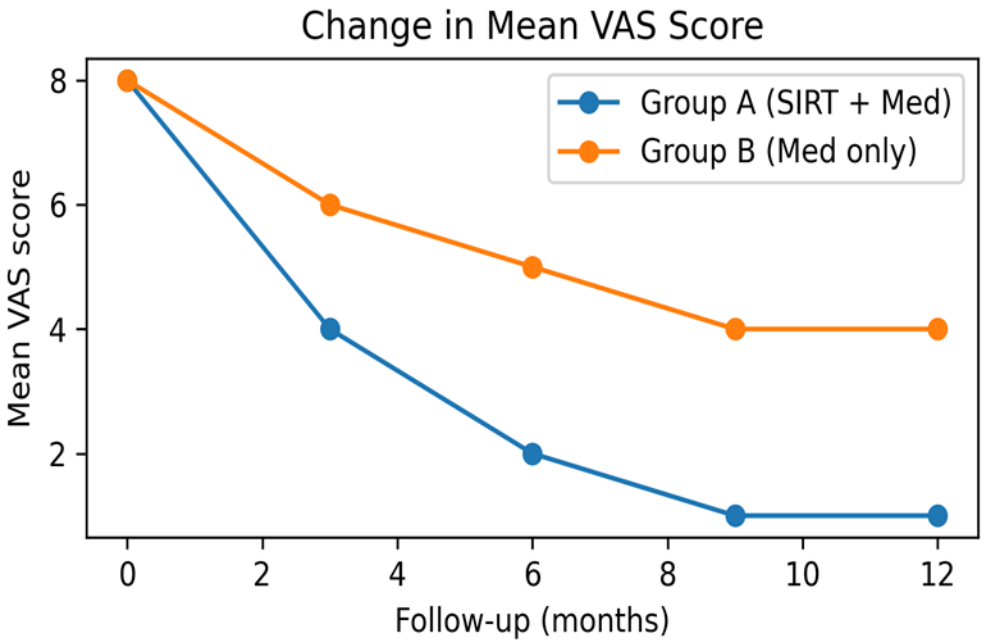

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Figure 3. Change in mean VSS-SF scores over 12 months in Group A and Group B.

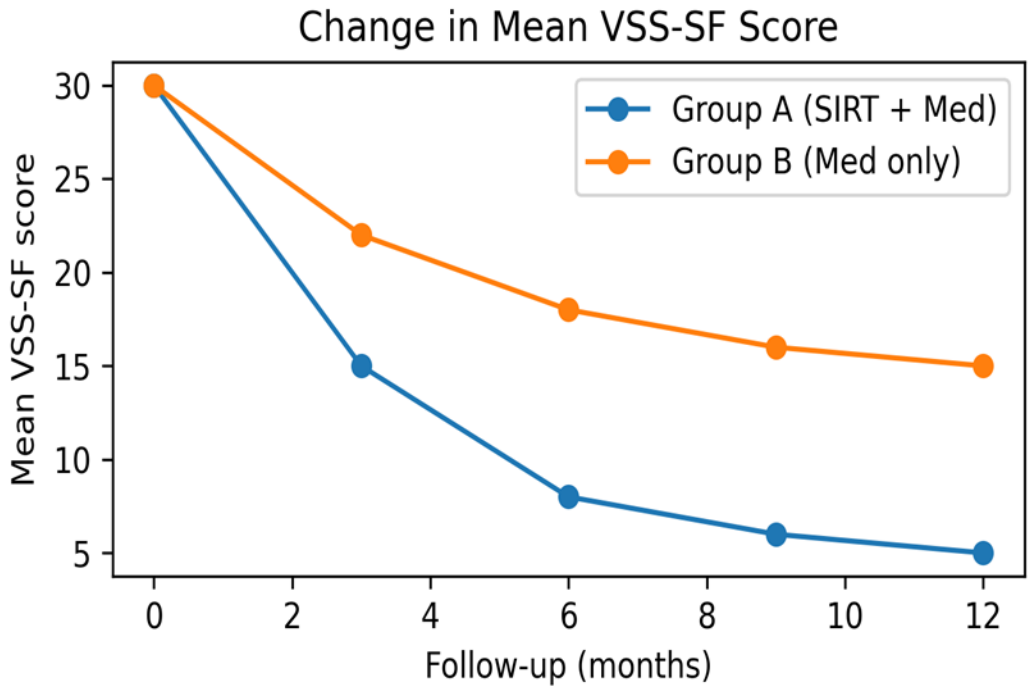

Figure 4. Proportional distribution of symptom free clinical outcomes at 360-day follow-up.

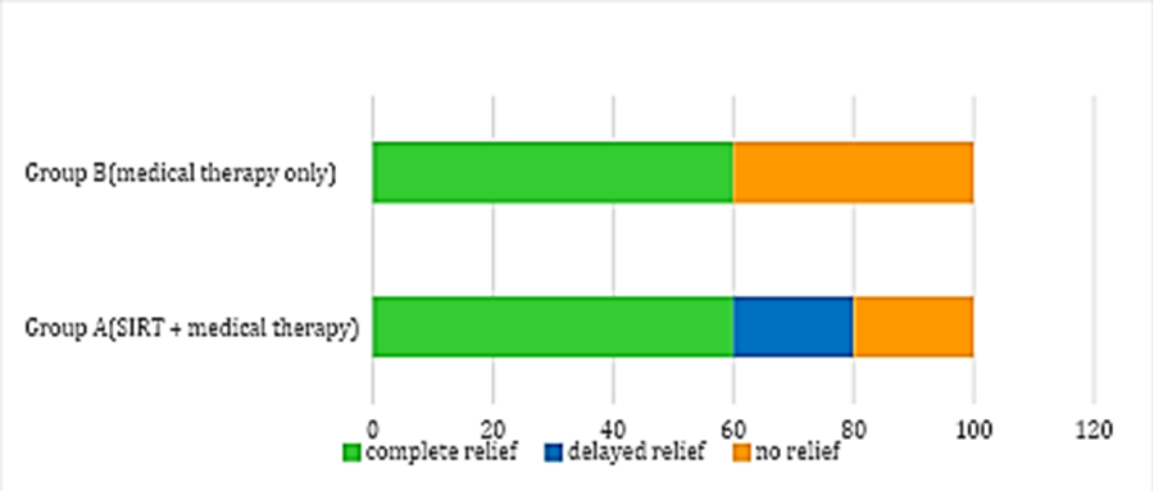

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Figure 5. Demonstration photograph of patients with consent, undergoing Systemic Installation Response Therapy (SIRT).

Discussion

The present study demonstrates that Systemic Installation Response Therapy significantly enhances clinical outcomes when used as therapy in patients with peripheral vestibular vertigo. The high rate of complete symptom resolution and absence of recurrence in the majority of patients undergoing SIRT suggest improved vestibular compensation and adaptive response mechanisms.

SIRT appears to address not only the physiological aspects of vestibular dysfunction but also the cognitive and behavioral components that influence symptom perception and coping strategies. By recalibrating maladaptive neuromuscular, cognitive and behavioural response patterns, SIRT may facilitate central adaptation, reduce anxiety, and improve patient compliance.

These findings support the growing interest in integrative and multidisciplinary approaches to vestibular rehabilitation. However, the precise biological, cognitive and neurological mechanisms underlying the observed benefits of SIRT remain to be elucidated.

Limitations

The study has certain limitations, including a relatively small sample size and reliance on patient-reported outcome measures. Long-term sustainability beyond one year was not evaluated. Larger randomized controlled trials are required.

Conclusion

This study suggests that Systemic Installation Response Therapy, when combined with conventional medical management, offers significant clinical benefit in patients with peripheral vestibular vertigo. The observed improvement in symptom resolution, sustained clinical improvement, reduction in recurrence, and decreased dependence on long-term medication underscore the potential of SIRT as a novel adjunctive therapeutic modality.

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