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Factors Influencing Facial Paralysis Recovery: A Retrospective Cohort Study Using Electronic Medical Records

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Abstract. This study aims to report on treatment outcomes and related factors in Bell's palsy patients by analyzing Electronic Medical Records (EMR) data. To assess the impact on the duration until improvement in House-Brackmann grading post-onset, we conducted an analysis of inpatient records for Bell's palsy patients admitted to a traditional Korean medicine hospital from 2018 to 2022. A total of 1049 subjects were included in the analysis. Contributing factors to a duration of more than 14 days until improvement in HB Grade included age 40 or above, male gender, an initial period of more than 7 days from onset to admission, a history of past recurrence, and the indication for adjunctive therapy. To generalize the adaptation of adjunctive traditional Korean medicine treatment indications to treatment outcomes, larger-scale studies encompassing a broader patient population will be necessary.

Keywords. Electronic medical records, Bell's palsy, real-world evidence

1. Introduction

Bell's palsy, marked by idiopathic facial paralysis, manifests as sudden, unilateral facial paralysis. Remarkably, about 70% of patients achieve complete recovery without active intervention [1]. However, instances of incomplete recovery leading to sequelae introduce significant concerns, impacting both the duration of illness and the individual's quality of life [2]. While previous studies have delved into prognosis and recurrence factors through controlled clinical trials and large-scale health insurance data [3], a genuine understanding necessitates a real-world analysis. In response to this need, our study endeavors to pinpoint prognostic factors, placing particular emphasis on the critical variable of condition severity.

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2. Methods

This retrospective cohort analysis utilized electronic medical records from a traditional Korean medicine hospital, covering Bell's palsy cases between 2018 and 2022. Exclusions comprised patients with central or traumatic facial nerve palsy, diabetic neuropathy, multiple neuropathies, Ramsay Hunt syndrome, shingles, or those admitted for facial paralysis sequelae. Sociodemographic factors (gender, age) and post-admission clinical treatment details were assessed to identify influences on the duration until improvement in House-Brackmann (H-B) Grade—a facial function scale ranging from 0 to 6, where higher scores indicate greater impairment. Data underwent preprocessing and statistical analysis using IBM SPSS Statistics 19.0, with a significance threshold set at p-value 0.05.

3. Results

A total of 1049 subjects were included in the analysis, with an average age of 52.5 (±16.4) years, and male patients constituting 40.4% (424 individuals). The mean duration until improvement in H-B grade post-onset was 16.0 (±6.8) days. Among the participants, 38.3% (402 individuals) received steroid-only therapy, while 57.8% (606 individuals) underwent a combination of antiviral therapy. Factors contributing to a duration of more than 14 days until improvement in H-B Grade were identified. These included an age of 40 or above, male gender, an initial period of more than 7 days from onset to admission, a history of past recurrence, and the indication for adjunctive therapy.

4. Conclusions

In this study, we explored factors influencing the prognosis of Bell's palsy, considering the initial severity, using real EMR data. The results highlighted the significance of the timing of treatment initiation and the indication for adjunctive therapy post-onset. Generalization of these findings could be achieved through larger-scale studies involving a more extensive patient population.

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