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Utility of Nerve Conduction Studies in Diagnosing Guillain-Barre Syndrome: A Scoping Review

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ABSTRACT

Guillain-Barre Syndrome (GBS) is a rare autoimmune disorder that attacks the nervous system. It often follows infections and can cause muscle weakness or paralysis. Nerve Conduction Studies (NCS) are essential for diagnosis and management, helping doctors assess nerve damage and guide treatment. However, there is a lack of research, particularly in India, on the optimal use of NCS in GBS. The aim was to analyse existing literature, highlight the significance of NCS, and identify research gaps to improve patient care. Out of 453 articles identified between 2020-2024 from PubMed, Cochrane, and PEDro, 172 duplicates were removed. The remaining 281 articles were screened by titles and abstracts, leading to the removal of 211 articles. Following further analysis based on the selection criteria and PRISMA-ScR guidelines, led to the selection of 8 papers for review. Nerve Conduction Studies (NCS) are crucial for diagnosing and monitoring GBS, with repeated testing improving accuracy by detecting changes like conduction block and reduced Compound Muscle Action Potentials (CMAPs). Axonal variants are linked to severe symptoms and poorer outcomes, while demyelinating forms show better recovery. Early markers like neuropathies and nerve enlargement via ultrasonography aid in early detection. Sensory involvement and motor excitability changes further highlight disease severity and progression. NCS are crucial for diagnosing and monitoring GBS, improving accuracy through repeated testing. Axonal variants show more severe symptoms, while demyelinating forms recover faster. Early markers like nodopathies and nerve enlargement aid early detection, with sensory involvement and excitability changes reflecting disease progression.

Keywords: Conduction block, Neuropathies, Paralysis.