DOI: 10.7860/JCDR/2026/88435.22869 Abstract No.: 23

A Literature Review on Transcutaneous Electrical Nerve Stimulation: A Non-Pharmacological Option for Labour Pain Management

BRAHMLEEN BAJAJ[1], SHWETA KUMAR[2], KANGNA JUNEJA KANSAL[3]

ABSTRACT

Labour pain represents one of the most intense forms of acute discomfort encountered during childbirth, prompting widespread dependence on pharmacological interventions like epidural analgesia. However, such methods may introduce notable side effects throughout the birthing process. In seeking alternative strategies focused on safety and maternal welfare, Transcutaneous Electrical Nerve Stimulation (TENS) has gained attention as a viable, non-drug-based method for alleviating pain during labour. Through specific nerve stimulation pathways, TENS enables the natural release of analgesics, offering meaningful symptom relief while permitting greater mobility. This review aims to assess and compare the effectiveness of TENS with standard epidural analgesia in reducing pain intensity among women in active labour, focusing on maternal satisfaction and birthing outcomes. A comprehensive literature review was performed using recent peer-reviewed studies (2020-2025) examining TENS during labour. Reviewed articles included randomised controlled trials and observational research, with emphasis on method parameters, outcome measures, and comparison groups. The studies evaluated both subjective (pain scores, satisfaction) and objective (delivery type, complications) outcomes. Studies involving more than 2,500 participants found TENS can effectively reduce pain during childbirth when administered at high frequency and low intensity. Maternal satisfaction rates were comparable to, or higher than, those using pharmacological approaches, and TENS did not lead to an increase in complications or adverse neonatal outcomes. Although epidural analgesia was associated with greater absolute pain relief, TENS was preferred by participants valuing mobility and reduced side effects. TENS provides a safe and efficient alternative for pain management in labour, particularly beneficial for individuals seeking drug-free methods or when epidural use is not advised. Clinical best practices should include patient education, careful protocol adherence, and individualised application.

Keywords: Epidural comparison, Maternal satisfaction, Non-pharmacological analgesia, Obstetric outcomes

PARTICULARS OF CONTRIBUTORS:
1. BPT Student, School of Physiotherapy and Rehabilitation Sciences, K.R. Mangalam University, Gurugram, Haryana, India.
2. Assistant Professor, School of Physiotherapy and Rehabilitation Sciences, K.R. Mangalam University, Gurugram, Haryana, India.
3. Assistant Professor, School of Physiotherapy and Rehabilitation Sciences, K.R. Mangalam University, Gurugram, Haryana, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Brahmleen Bajaj,
BPT Student, School of Physiotherapy and Rehabilitation Sciences, K.R. Mangalam University, Gurugram, Haryana, India.
Email: vishuubajaj@gmail.com