

Abstract

Background: Labor pain can be detrimental to a mother and her fetus, causing adverse neonatal outcomes. Neuraxial labor analgesia, usually provided by epidural and/or spinal anesthesia, is regarded as the most effective method of mitigating labor pain. However, there is evidence that the procedure itself can sometimes cause adverse outcomes. Whether these adverse outcomes cause long-term disadvantage, is not fully investigated.

Methods: The study was a retrospective cohort study. Electronic health records of a private hospital in Tokyo were utilized to examine the effect of labor analgesia on infant development. Births that occurred between April 2017 and June 2018 were identified, and pairs of mother and infant were enrolled. Then, the study population was divided into Labor analgesia (LA) and non-LA groups, and outcomes were compared. The primary outcome was developmental outcomes, evaluated by infant's response to stimuli, motor function and cognitive function. Physical development such as weight and height, were also compared.

Results: The study population consisted of 975 pairs, 676 in non-LA group, and 299 in LA group. No evidence of developmental retardation was found at 1, 3, 6, 9, and 12 months of age in LA group, compared to non-LA group. The ability to crawl and pull up oneself was significantly more achieved in LA group at 9 months of age after adjusting the confounders: Adjusted OR 1.63 (95% CI 1.07–2.50; $p=0.023$) and 1.61 (95% CI 1.03–2.52; $p=0.039$), respectively.

Conclusion: No evidence of poor developmental outcome was found up to 1-year old. The findings from this study are valuable as an evidence to later outcomes of infants born in LA are scarce.

*Keywords: Obstetric Analgesia, Labor Pain, Natural Childbirth, Adverse Effects,
Child development*