

Pregnancy and Neonatal Outcomes in a Case of Novel Implanted Intracerebroventricular Sodium Valproate Pump Use for a Woman with Longstanding Intractable Epilepsy

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Introduction

Despite significant teratogenic risks, sodium valproate is still widely prescribed for management of epilepsy amongst pregnant women. Total drug plasma concentration is known to decrease during pregnancy, leading to unstable seizure control.

Objectives

This describes the first reported case of a patient with previously intractable epilepsy managed with an intra-cerebroventricular sodium valproate pump achieving an ongoing pregnancy and live birth.

Case

A 32-year-old primiparous woman with longstanding refractory focal epilepsy underwent a novel intra-cerebroventricular sodium valproate pump insertion for seizure management¹. She remained seizure-free for 6 years prior to her pregnancy, and experienced 1 absence seizure at 21 weeks' gestation. This was a vast improvement in seizure control as she was previously experiencing over 4 seizures per day whilst on multiple oral anti-epileptic agents, which was negatively impacting her independence with activities of daily living and her ability to work.

Results

Her pregnancy was otherwise uncomplicated and she underwent an elective caesarean section at term with no surgical complications. The sodium valproate pump was not a contraindication for neuraxial analgesia, and the intra-abdominal part of the implant was in the right para-umbilical region, well clear from the Pfannenstiel incision.

Neonatal APGARs were 9 and 9, and her baby did not require NICU admission. Additionally, there were no congenital malformations or neurodevelopmental consequences observed in her baby.

Discussion

This landmark case showcases a management option for achieving good seizure control and maternal quality of life in a woman with longstanding intractable epilepsy. The therapeutic range for CSF-infused sodium valproate has significantly lower corresponding serum levels compared to oral administration, which results in reduced adverse effects on pregnancy and neonatal outcomes.

References

1. Cook M, Murphy M, Bulluss K, D'Souza W, Plummer C, Priest E, et al. Anti-seizure therapy with a long-term, implanted intra-cerebroventricular delivery system for drug-resistant epilepsy: A first-in-man study. *EClinicalMedicine*. 2020;22:100326. doi:10.1016/j.eclinm.2020.100326