

A History of Dihydroergotamine in Migraine

Sutapa Ray¹, Stephen Shrewsbury¹

¹Impel NeuroPharma

Objective: This work provides a history of dihydroergotamine (DHE) treatment from its synthesis in 1943 from ergotamine to modern day formulations and routes of administration.

Background: Ergot use in obstetrics dates back to 1100 BC in China, 370 BC by Hippocrates and 1808 in the US. However, it was not until 1918 that ergotamine was isolated, subsequently modified to DHE and approved in 1946 for the treatment of migraine. For the next 40 years, DHE was available as the most specific, acute anti-migraine therapy until the advent of the Triptans. DHE is still used today, available in multiple formulations and remains a dependable choice for Neurologists and Headache specialists for acute migraine, status migrainosus and cluster headache.

Design/Methods: A primary literature review was conducted of the PubMed database for the study period (1946 – 2018) and seminal studies identified following methods similar to Tfelt-Hansen and Koehler, 2011. Market research data was also analyzed.

Results: A timeline of major landmarks in the development and clinical use of DHE was identified and is presented. Despite sophisticated biologic treatments for migraines, DHE remains a leading treatment in migraine clinics for intractable migraines via the intravenous route of administration. The supportive body of clinical evidence for DHE is vast and impressive and suggests a risk profile that some consider as good as the triptans. Recent research and development efforts to provide improved bioavailability and consistency of DHE via the novel upper nasal cavity route may at last bring the benefits of IV DHE to patients and physicians via self-administered, in-home treatment.

Conclusions: DHE has accumulated over 70 years of clinical practice data showing that it is a safe and reliable treatment when delivered consistently at adequate dose levels for acute migraines providing rapid and sustained relief, even when other options have failed.