

Opiate Withdrawal-Associated Esotropia: A Case Report and Systematic Review

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ADMINISTRATIVE INFORMATION

Support - Edward Via College of Osteopathic Medicine – Spartanburg, Campbell University School of Osteopathic Medicine.**Review Stage at time of this submission** - Completed but not published.**Conflicts of interest** - The authors declare no relevant financial or non-financial interests to disclose. The authors also declare that no funds, grants, or other support were received during the preparation of this manuscript.**INPLASY registration number:** INPLASY202430129**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 March 2024 and was last updated on 29 March 2024.

INTRODUCTION

Review question / Objective The precipitating factors and clinical profile of patients presenting with opiate withdrawal-associated esotropia remain incompletely characterized in the medical literature. Given the rarity of this clinical manifestation, the present systematic review was formulated with the following research question: "What are the demographic and clinical characteristics of individuals who manifest esotropia in the context of opiate withdrawal?" This research question seeks to delineate the prevalence, symptomatology, and any potential predisposing factors within this patient cohort, contributing to the emerging narrative of atypical presentations associated with opiate withdrawal. Our review aims to systematically identify and analyze available case reports and studies that document instances

of esotropia secondary to opiate withdrawal. The objective is not merely to catalog such occurrences but to discern patterns and commonalities that might inform future clinical practice. By enhancing our comprehension of the demographic variables and clinical profiles in these cases, we aspire to facilitate earlier recognition and more informed therapeutic strategies. This review aims to augment the knowledge base, thereby enabling healthcare providers to anticipate and address this condition more effectively within the broader context of opiate withdrawal management.

Rationale During our clinical assessment and diagnostic approach, we found it extremely difficult to identify relevant literature on this topic, prompting us to conduct a systematic review of the literature to explore the known regarding opiate withdrawal-associated esotropia. Our search identified 15 documented cases, allowing us to

provide valuable insights into the demographics, clinical characteristics, and management strategies of this rare manifestation. The significance of our findings lies in the diagnostic challenge posed by opiate withdrawal-associated esotropia and the necessity for heightened clinical awareness, particularly in patients with a history of opiate use presenting with visual disturbances. Through our systematic review and case report, we aim to enhance understanding of the less explored neurological and ophthalmological consequences of opiate withdrawal, contributing to the broader discourse on the opioid crisis and its implications.

Condition being studied Esotropia, which is the medial deviation of one or both eyes, is a rare withdrawal symptom that has been associated with opiate addiction. This is the condition we aim to better understand with this paper.

METHODS

Participant or population This is a systematic review of clinical case reports on human subjects. The types of participants that will be addressed in the review are subjects who experienced esotropic deviation secondary to opiate withdrawal.

Intervention Not applicable as all the studies included in the review are individual case reports.

Comparator Not applicable as all the studies included in the review are individual case reports.

Study designs to be included All included studies in our systematic review were case reports involving subjects who experienced esotropic deviation as a symptom of opiate withdrawal.

Eligibility criteria Articles were included based on if they met the following inclusion criteria: 1) must be a full-text paper that was published in a peer-reviewed journal; 2) studies that were published in English; 3) studies that investigate esotropia, strabismus, or similar oculomotor symptoms related to opiate withdrawal.

Information sources Electronic databases are the primary intended information source. If any key data/information was missing, the primary authors of the paper were contacted in order to retrieve it.

Main outcome(s) The primary outcome measures that were considered in this review include: Sex, age, drug used, length of drug use (years), history of drug relapse (y/n), last use before onset of symptoms (days), ocular findings & symptoms, other symptoms, treatment for ocular symptoms,

outcomes at last follow-up, most recent follow-up (months).

Quality assessment / Risk of bias analysis The Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Case Reports was used to conduct a rigorous quality assessment of the included studies after the screening process. The checklist consists of eight different items and an overall judgement on the strength of the study (Figure 2). The quality assessment was independently completed by MD and TR, and all conflicts were resolved by a third independent reviewer, CO.

Strategy of data synthesis None conducted.

Subgroup analysis None conducted.

Sensitivity analysis None conducted.

Country(ies) involved United States.

Keywords opiates, heroin, fentanyl, withdrawal symptoms, esotropia, strabismus, diplopia.

Contributions of each author

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