CODEN (USA)-IJPRUR, e-ISSN: 2348-6465

Case study

A Rare case report on Mefenamic Acid induced Aseptic Meningitis

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ARTICLE INFO:
Received: 19 July 2023
Accepted: 28 August 2023
Published: 31 August 2023

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ABSTRACT:

Meningitis is a severe inflammatory condition affecting the meninges, commonly caused by infections or autoimmune disorders. However emerging evidence suggest that mefenamic acid a widely used nonsteroidal anti-inflammatory drug (NSAID) can also induce meningitis. Although rare, this adverse reaction is of significant clinical importance due to the potential for serious complications is not promptly recognised and managed. Increased awareness among healthcare professionals is crucial to ensure timely identification and appropriate treatment of patients presenting with meningitis symptoms following mefenamic acid administration.

The reported cases of mefenamic acid-induced meningitis suggest an idiosyncratic reaction rather than a direct infection. Patients typically present with symptoms consistent with meningitis, including fever, headache, neck stiffness, and altered mental status. The onset of symptoms can occur within hours to days after initiating mefenamic acid therapy. Healthcare providers should be aware of the potential risk of mefenamic acid-induced meningitis, especially in patients presenting with meningitis-like symptoms after initiating this medication. Prompt recognition, discontinuation of mefenamic acid, and appropriate supportive care are essential for successful management.

Keywords: *Aseptic Meningitis,* mefenamic acid, adverse effect, clinical pharmacist

1. INTRODUCTION

Meningitis is a serious medical condition characterised by inflammation of the meninges, which are the protective membranes surrounding the brain and the spinal cord. It can be caused by various factors, including infections, autoimmune disorders, medication induced reactions. In recent years there have been reports linking mefenamic acid, a nonsteroidal anti-inflammatory drug (NSAID) to the development of meningitis. Mefenamic acid is commonly used to relieve pain, reduce inflammation and lower fever.

Diagnosing mefenamic acid-induced meningitis requires a comprehensive evaluation, including a detailed medical evaluation, including a detailed medical history, physical examination, and laboratory tests. Lumbar puncture to obtain cerebrospinal fluid (CSF) is a key diagnostic procedure. CSF analysis typically reveals an increased white blood cell count (pleocytosis), elevated protein levels, and normal glucose levels. Importantly, CSF cultures are typically negative, differentiating mefenamic acid-induced meningitis from infectious causes [1, 2].

Management of mefenamic acid-induced meningitis primarily involves discontinuation of the offending drug and supportive care. Symptomatic relief can be achieved through the use of analgesics, antipyretics, and medications to alleviate meningeal inflammation and prevent complications. With appropriate treatment, most reported cases of mefenamic acid-induced meningitis have shown a favourable prognosis [3, 4].

While the incidence of mefenamic acid induced meningitis is rare, it is essential to be aware of this potential adverse effect, as prompt to recognition and appropriate management are crucial for patient safety. This article aims to explore the clinical presentation, underline mechanisms, diagnostic challenges, and management considerations associated with mefenamic acid induced meningitis. By increasing awareness, an understanding of this condition, healthcare professionals can ensure early detection and appropriate management of patients presenting with meningitis symptoms after mefenamic acid administration [5, 6].

2. CASE PRESENTATION

A 28-year-old female with no comorbidities except history of fall at childhood was admitted in a tertiary care hospital with complains of headache, pain over back, and right upper limb and lower limb pain. She had a history of fever and vomiting few days back. She does not have abnormal movements of limbs loss of consciousness and bowel bladder incontinence. She also complains of neck stiffness. During reconciliation we noticed that the patient was taking mefenamic acid during her headache episodes. Cerebrospinal fluid analysis revealed an increased cell count of 145cells/mm^3, mostly composed of polymorphonuclear cells and macrophages. Computerise tomography (CT) and

magnetic resonance imaging (MRI) scans of the head showed swelling and inflammation [7, 8].

Meningitis was a rare adverse effect of mefenamic acid. A few case reports suggested mefenamic acid induced meningitis. Our study had demonstrated similar finding of a case report published in journal of reactions weekly in 2016. The exact mechanism of mefenamic acid induced meningitis is unknown. This report indicates the importance of clinical pharmacist in tertiary care hospital. Early recognition, discontinuation of the drug, and appropriate supportive care are essential for successful management. Further research is needed to elucidate the underlying mechanisms and risk factors associated with this rare adverse reaction [9,10].

3. CONCLUSION

Mefenamic induced meningitis is a rare but important adverse reaction that health care professionals should be aware of. While meningitis is commonly associated with infectious or auto immune causes, mefenamic acid has been implicated as a potential trigger for this inflammatory condition. Prompt recognition and appropriate management are crucial to minimise the risk of complications associated with meningitis. Clinicians should consider mefenamic acid as a possible aetiology in patients presenting with meningitis symptoms particularly in those with recent exposure to the drug. Timely discontinuation of mefenamic acid and initiation of appropriate treatment can lead to favourable outcomes. Although the exact underlying mechanisms and risk factors for mefenamic acid-induced meningitis remain unclear, healthcare providers should consider the possibility in patients presenting with meningitis-like symptoms after initiating mefenamic acid therapy. Awareness of this adverse reaction can aid in timely diagnosis and appropriate management. Further research is needed to elucidate the underline mechanisms and risk factors associated with mefenamic acid induced meningitis, enabling better prevention and management strategies. Overall, by increasing awareness of this rare adverse effect, health care providers can improve patient care and safety when prescribing mefenamic acid.

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ACKNOWLEDGEMENT: None

CONFLICT OF INTEREST: The authors declare no conflict of interest, financial or otherwise.

SOURCE OF FUNDING: None.

AVAILABILITY OF DATA AND MATERIALS: The raw data used in this study can be obtained from the corresponding author upon reasonable request.

CONSENT FOR PUBLICATION: Not applicable.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE: NA