Case study

Acute Seizure Following Isotretinoin Administration: Case Report &Literature Review

Comment [MF1]: This case report not a review

Abstract

Isotretinoin is considered a cutting edge treatment for Acne vulgaris. It is licensed for treating severe (cystic) acne vulgaris. Our case report represents a 28 year old female who experienced a rare neurological side-effect after ingesting Isotretinoin.

Introduction

Isotretinoin is derived from a group of drugs called Retinoids, it is primarily used to treat acne. The magnitude of the acne crisis extends psychologically to reflect on self-esteem and confidence. Although Isotretinoin offered a solution to a worldwide problem, it has also caused other issues that could have otherwise been avoided. This case report sheds a light on one of the adverse effects of Isotretinoin.

Comment [MF2]: How can you write introduction without references?

Case presentation

A 28 year old female with no previous medical history of note came to the Emergency Room (ER) in Ahmadi Hospital following an episode of generalized tonic clonic seizure. The patient described having blurred vision for a few seconds while taking a walk with her mother at the mall. According to the patient's mother the episode continued for about 10-15 minutes and resolved spontaneously. The first aid service in the mall checked both blood sugar and blood pressure which were normal. The patient did not recall the incident

postictal, she continued to have episodes of blurred vision the following week before she attended the ER.

The patient denied having any fever, incontinence, or tongue biting. She also denied prolonged screen time on electronic gadgets. When examined she did not complain of cough, shortness of breath or palpitation. The patient was fully conscious, alert and oriented through the examination process and lying comfortably in bed. The patient was vitally stable, afebrile, and maintaining saturation on room air. Neurologically, power and sensations were maintained, her Glasgow Coma Scale (GCS) was 15/15, gait was normal, and there were no cerebral signs.

Computed Tomography was ordered and revealed no evidence of intra / extra-axial hemorrhage, acute infarction or midline shift. Brain parenchyma showed normal grey white matter differentiation.

MRI Cervical spine was preformed using standard protocol on 3 T scanner without IV contrast. No previous studies were available for comparison. It was an unremarkable study. MRI brain and Venogramwere also requested and were unremarkable and there were no previous results available for comparison. Patient refused Lumbar Puncture testing (LP) and Electroencephalogram (EEG) were planned in outpatient setting. Results showed no evidence of Epilepsy.

All necessary investigations were preformed and found no reasonable explanation as to the patient's chief complaint. The patient admitted ingesting Isotretinoin (30mg once daily) for a duration of eight months.The Naranjo scale was used to assess the casual relationship between the medication and the adverse event, which gave a score of 8.

Discussion

The mechanism in which Isotretinoin can cause seizures is not fully understood, however manufacturers link Isotretinoin with dizziness, drowsiness, and blurred vision as part of the rare side-effects as well as mood changes and aggressive behavior. Some studies suggested that isotretinoin can cause swelling of the brain which in turn will lead to seizure, coma, and death. Patients reported headaches

which may be linked to pseudo tumor cerebri; an idiopathic increase in the intracranial pressure leading to swelling and seizure[1, 2]. Another explanation might be Biotinidase deficiency; an enzyme responsible for the availability of biotin, which in turn is linked with anti-epileptic medication[1]. Isotretinoin can lead to Biotinidase deficiency the effects of which can lead to seizures as well as ataxia, encephalopathy, alopecia, skin rash, conjunctivitis, IQ and developmental delay [1]. Serious repercussion can lead to irreversible neurological damage and death.

Recent case reports provide evidence of a link between Isotretinoin and seizure onset. A patient experienced a generalized seizure episode four days after receiving 80mg/day dose of isotretinioin[3]. The episode resolved spontaneously within an hour and was followed by another seizure that involved prolonged loss of consciousness [3]. After regaining consciousness the patient continued to have impaired vision and headache [3]. All investigations were normal and symptoms resolved following abrupt discontinuation of Isotretinoin[3]. Muscles stiffness and superimposed painful spasms have been experienced by another adolescent upon receiving isotretinoin for ten days[4]. The symptoms resolved after administration of diazepam and discontinuation of isotretinoin[4]. Chronic vitamin A intoxication has been described in adults who receive 15mg/daily for prolonged periods. Such intoxication is linked to several side-effects including headaches and diplopia due to increased intracranial pressure[5]. Isotretinoin-induced psychotic episode was experienced by a teenager after ingesting 30mg/day isotreinoin for three months. Recovery involved administration of Olanzapine and discontinuation of istretinoin[6]. A cohort study revealed that patients exposed isotretinoin were significantly more at risk of developing a neurological disorder than those on other antibiotics, topical acne medications, or are on non-prescription anti-acne medication[7].

Conclusion:

Although Isotretinoin is not void of adverse reactions. Caution and proper counseling are advised when prescribing Isotretinoin. Further studies are required to assess the neurological side-effects and provide a definite explanation.

References:

Comment [MF3]: Number the references and write it in one way, font size, font type

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