CASE STUDY JPAR 2022

Journal of Pharmaceutical Advanced Research
(An International Multidisciplinary Peer Review Open Access monthly Journal)
Available online at: www.jparonline.com

An adult non-obese female patient with idiopathic intracranial hypertension

B. Hemalatha*, E. Ramnath

Department of Pharmacy Practice, Arulmigu Kalasalingam of Pharmacy, Krishnankoil, Tamilnadu, India.

Received: 18.11.2022 Revised: 24.11.2022 Accepted: 26.11.2022 Published: 30.11.2022

ABSTRACT:
A clinical condition known as idiopathic intracranial hypertension (IIH), commonly referred to as *Pseudotumor cerebri*, is characterized by symptoms brought on by elevated intracranial pressure (ICP; 20 mm Hg) or CSF pressure (> 250 mm H_2O), but without any associated anatomical alterations or other reasons. Although the precise causes of IIH are unknown, there is a theory that patients with obesity may be at risk. A high amount of aldosterone in obesity causes the choroid plexus to produce more CSF, rising intracranial, intra-abdominal, and central venous pressures. IIH can also afflict people who are normal weight, have no coexisting diseases, and have never experienced a head injury. There should be a connection between IIH and the correlation of obesity, the female sex, and recent weight increase. It is important to focus future research on enhancing the pathogenesis of the disease.

Corresponding author:
Ms. B. Hemalatha
Doctor of Pharmacy
Arulmigu College of Pharmacy,
Krishnankoil, Tamilnadu, India.
Tel: +91-7639204743
Mail ID: hemalathab0345@gmail.com

Keywords: Idiopathic Intracranial Hypertension, Headache, Papilledema, Lumbar Puncture, Acetazolamide Neuroimaging Study, Modified Dandy Criteria.

INTRODUCTION:

Quincke reported the first case of IIH in 1897 [1]. IIH is frequently referred to as benign intracranial hypertension or pseudotumor cerebri [2]. IIH is most common among obese, young women, and is believed to affect one to three persons out of every 100,000 people annually [3]. IIH often gets worse over the course of several months to years before stabilizing. Up to 79 % of individuals will still experience chronic symptoms despite receiving treatment. Up to 24 % of people develop severe vision loss (or even go completely blind) [4]. Following the resolution of an episode of IIH, recurrence was observed in 8 to 38 % of people [5]. With clinical experience and improvements in imaging technology, the definition of IIH has changed. The following criteria must currently

be met to diagnose IIH, that are Papilledema-related symptoms and signs; elevated ICP measured during lumbar puncture in the side-lying position; normal CSF composition; absence of imaging evidence of ventriculomegaly or a structural explanation for increased 1CP, such as a brain parenchymal, ventricular, venous sinus abnormality and absence of any other known causes of intracranial hypertension, such as usage of certain medications [6]. There have been cases of patients with increased intracranial pressure without papilledema [7]. According to the most widely accepted theory, IIH is a condition of decreased CSF absorption [8]. Idiopathic intracranial hypertension patients may have no symptoms; however, headache and vision problems are the most typical complaints they make [9]. Regarding the underlying cause, IIH management must be finalized [10].

PRESENTATION OF CASE:

A 61-year-old woman who has had a severe headache and blurred vision for the last 5 to 6 months arrives at the hospital. She has a diffuse headache that gets worse when she wakes up in the morning. She doesn't exhibit any related symptoms. She has no notable past medical history and doesn't use any medications. There are no previous brain injuries or sensory or motor deficits.

She exhibits mild pallor and is conscious and oriented during physical examination. Her temperature, heart rate, respiratory rate, and blood pressure are all within normal ranges. A systemic evaluation of the CNS reveals improved motor function, pupil equal and reactive to light, and no facial asymmetry. The results of her laboratory investigation are listed in Table 1.

A lumbar puncture, CT, and MRI of the brain all show no obvious abnormalities, but a fundus examination reveals bilateral persistent papilledema. IIH was diagnosed using an exclusion diagnosis. She was treated with the drugs listed in Table 2.

On August 8, she was admitted to the hospital, and on August 16, she was discharged. At the time of discharge, she has prescribed 500 mg of vitamin C once a day, 200 mg of ferrous sulfate twice daily, and 250 mg of Acetazolamide twice a day for 10 days. She has regular follow-up appointments with an ophthalmologist and has been instructed to contact the medical staff immediately if her vision changes.

DISCUSSION:

IIH primarily affects obese women, especially those who have put on a lot of weight quickly, although it is also linked to some medications, including growth hormones, tetracyclines, and too much vitamin A. Headache, vision loss or abnormalities in the visual field and papilledema are examples of classic symptoms. The diagnosis must be confirmed by an ophthalmologic examination, which typically displays bilateral papilledema and could result in visual loss. To rule out alternative reasons for elevated ICP, MRI is frequently used. A lumbar puncture usually reveals a high opening pressure. The first-line treatment is acetazolamide, but surgery is only used as a last option. Permanent symptoms are typical, and even with therapy, the illness frequently gets worse over the period of several months to years.

Inadequate CSF production compared to inadequate CSF resorption results in elevated intracranial pressure, which harms CNS structures, particularly the optical nerve fibers. The cause of reduced CSF resorption in IIH is still unknown.

A headache caused by elevated intracranial pressure may induce the patient to wake up in the morning. Her vision has become blurry as a result of temporary tissue pressure increases induced by ischemia of the optic nerve head.

To rule out alternative diagnoses of IIH, such as stroke, a systemic evaluation of the CNS is used. To rule out alternative reasons for elevated ICP, brain imaging studies (CT and MRI) were performed. Among the conditions that cause a rise in intracranial pressure include CNS tumors, hemorrhage, and venous sinus thrombosis. Neuroimaging results show that the patient is free of malignancies, hemorrhages, hydrocephalus, and venous sinus thrombosis.

Neuroimaging tests are typically normal in people with IIH. However, there may also be enlarged optic nerve sheaths, small-slit-like ventricles, or an empty Sella. The next step in determining the reason for elevated intracranial pressure, if a mass lesion is not present, is a lumbar puncture.

A lumbar puncture in a lateral recumbent position reveals an opening pressure of 30cm H20. The physician may decide to do a high-volume tap, also known as a high-volume CSF removal if the pressure of the cerebral spinal fluid is raised. Protein, glucose, cell count with differential, cytology, and culture should all be examined in the CSF. Additionally, the fluid's color and clarity should be noted. A condition like meningitis or other infections, bleeding, or inflammation will be evaluated with the use of this analysis. IIH is linked to normal studies. Because there is a chance of cerebral

herniation, elevated ICP is a contraindication to doing an LP. Intracranial hypertension caused by unknown causes is an exception to this rule.

The diagnosis was made by a diagnosis of exclusion using modified Dandy criteria, which comprises raised ICP symptoms and signs, the absence of any other neurologic abnormalities, no other evidence of increased ICP's cause in imaging (MRI or CT), and elevated ICP with normal CSF tests upon lumbar puncture.

With the help of acetazolamide, mannitol, iron sucrose, and ferrous sulfate, the patient was successfully treated. Acetazolamide is a carbonic anhydrase inhibitor that helps to lessen the symptoms of headaches by inhibiting 99.5% of the choroid plexus carbonic anhydrase. Topiramate or furosemide can also aid with symptom relief and enhance the patient's health. The osmotic diuretic mannitol works by generating an osmotic gradient that draws the fluid from the brain into the vasculature and aids in excretion through urine.

Treatment typically results in steady improvement or stabilization. Acetazolamide can be tapered and discontinued as soon as symptoms improve.

She has been prescribed an injection of iron sucrose for her anemia and instructed to take ferrous sulfate tablets for three to six months. Because vitamin C is administered simultaneously with the iron sulfate tablet, oral iron administration with acidic foods may increase iron absorption.

Amitriptyline, propranolol, or topiramate can be used to treat the headaches experienced by IIH patients. Topiramate is also a great option because it has the side effect of causing weight loss, which can aid in the disease's remission.

She was instructed to schedule follow-up appointments with regular ophthalmology tests in order to avoid issues like vision loss, which can be precisely measured by perimetry. She was advised to slowly get out of bed, especially in the morning, as this would help her reduce her morning headache.

IIH primarily affects obese women, especially those who have put on a lot of weight quickly, but it is also linked to some medications (growth hormones, tetracyclines, and too much vitamin A.

Although the precise causes of IIH are unknown, persons who are obese may be at risk. A high amount of aldosterone in obesity causes the choroid plexus to produce more CSF, which in turn raises intracranial pressure. It also raises central venous pressure and intraabdominal pressure.

However, IIH can also afflict female patients with normal BMI; the underlying cause must be recognized. Regarding IIH, many questions remain unanswered. It is startling how closely it is related to obesity and the young female sex.

Conflict of Interest: None

Source of Funding: Nil

Paper Citation: Abdulla M*, Arumugavignesh M, Akshara SP, Jessica P, Lakshmi PJ. A case study on Saturday night palsy occurred due to Alcoholism induced accidental fall with Chronic Obstructive Pulmonary Disease as co-morbidity. J Pharm Adv Res, 2022; 5(11): 1713-1715.