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The Identification of Several Pharmacological Targets and Development of Novel Therapeutic Agents

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Description

Idiopathic Intracranial Hypertension (IIH) is characterized by elevated intracranial pressure without a known cause, as evidenced by papilledema and radiological findings. It is recognized that the primary symptoms, which include a headache, vision loss, and pulsatile tinnitus, have a significant impact on both visual function and quality of life. The incidence of obesity in the general population is rising in tandem with the worldwide rise in the prevalence of obesity. IIH demonstrates a strong preference for obese women of reproductive age. Recent studies highlighting the pathogenic role of metabolic and hormonal factors have led to the identification of several pharmacological targets and the development of novel therapeutic agents. The pathophysiology involves dysregulation of CSF dynamics and venous sinus pressure. The treatment's overarching objectives include relieving symptoms and avoiding permanent vision loss. The first-of-its-kind randomized controlled trial on IIH, the Idiopathic Intracranial Hypertension Treatment Trial, provides class I evidence for weight loss and acetazolamide treatment. Optic nerve sheath fenestration, CSF diversion, and venous sinus stenting have all been used successfully in medically refractive or fulminant cases. However, there aren't many high-quality prospective studies that look at IIH treatment and natural history, highlighting the urgent need for more research to find the best treatment plan. Endonasal endoscopy is now the preferred surgical procedure over craniotomy for treating spontaneous CSF leaks because it is less invasive. However, it is frequently a sign of idiopathic intracranial hypertension, which falls outside the scope of ENT expertise.

Intracranial Hypertension

Medical procedure is a fundamental stage, yet shouldn't dark the need to treat the hidden pathology. This treatment is intricate, and requires multidisciplinary collaboration between otorhinolaryngologist, ophthalmologist, nervous system specialist, neurosurgeon, radiologist, dietician, endocrinologist and psychotherapist. Before and after a spontaneous CSF leak repair, the ENT surgeons must pay close attention to this multidisciplinary management, as described in this update. Using Optical Coherence Tomography Angiography (OCT-A), to compare the thickness of the Retinal Nerve Fiber Layer (RNFL), the Ganglion Cell Complex (GCC), and the vessel density of the Radial Peripapillary Capillary (RPC) plexus in eyes with regressed papilledema in Idiopathic Intracranial Hypertension (IIH) patients. Neurointerventionalists are increasingly accepting Venous Stenting (VS) for venous sinus stenosis in the context of idiopathic intracranial hypertension. Known delayed complications include in-stent stenosis and Stenosis Adjacent to the Stent (SAS) that can cause symptom recurrence and necessitate retreatment. However, it is still unclear how these complications are affected by the duration of Dual Anti-Platelet Therapy (DAPT). A headache is typically the first sign of Idiopathic Intracranial Hypertension (IIH), which is an increase in intracranial pressure with no known cause. In light of the most recent data, the purpose of this study was to assess how neurologists' diagnosis and treatment of IIH are changing. Idiopathic intracranial hypertension, also known as IIH, is a condition that typically affects women of reproductive age with a high Body Mass Index (BMI) (typical patients).

Atypical patients, who fall outside of this demographic category, may have a different pathophysiology behind elevated Intra-Cranial Pressure (ICP), which may result in distinct clinical presentations and prognoses. Increased intracranial pressure without a known cause is known as Idiopathic Intracranial Hypertension (IIH). DVSS, or dural venous sinus stenting, is a relatively new treatment for IIH that does not respond to standard medical care or lifestyle changes. In this review, we discuss the role of venous sinus stenosis and the specifics of DVSS, as well as various hypotheses regarding the pathogenesis of IIH. In addition, we examine the evidence-based guidelines for this procedure and provide a summary and critique of the available evidence regarding the results of DVSS in IIH. Although many studies have shown that DVSS has generally positive outcomes in patients with IIH, the majority of them have significant limitations, the most common of which is a lack of pre- and post-procedure ophthalmological data. Therefore, there is insufficient evidence to determine whether DVSS is an efficient treatment for IIH. In addition, we highlight the significance of a neuro-ophthalmological assessment before and after the procedure to monitor response and potential complications, as well as the most common indications for DVSS

as described in the literature. Idiopathic intracranial hypertension can result in vision loss due to optic nerve dysfunction and worsening papilledema. Anterior ischemic optic neuropathy can also cause acute vision loss in this setting. A 29-year-old woman with idiopathic intracranial hypertension presented with bilateral moderate papilledema and sudden loss of vision in her right eye's superior visual field.

Edema without Associated Symptoms

She was found to have a stable superior altitudinal defect with optic disc pallor and a new relative afferent pupillary defect. Patients who suffer from papilledema are more likely to develop anterior ischemic optic neuropathy as a result of crowding of the optic nerve head. The term "Idiopathic Intracranial Hypertension" (IIH) refers to elevated Intra-Cranial Pressure (ICP) with normal levels of cerebrospinal fluid and no known cause. Patients frequently experience elevated ICP-related symptoms, such as headaches; however, optic disc edema without associated symptoms may occur in a subset of patients with elevated ICP. The literature contains little information about this subgroup. This study's objective was to describe the initial clinical findings and visual outcomes of this group of asymptomatic patients during the follow-up period. Papilledema, elevated opening pressure, and the absence of a mass lesion, hydrocephalus, or meningeal enhancement on neuroimaging are all clinical signs of Primary Intracranial Hypertension (PIH).The risk of irreversible vision loss exists if untreated visual changes are not treated. Studies examining the differences in imaging characteristics between adult and pediatric PIH and proposed changes to the PIH criteria are recent developments. For pediatric PIH, the presence of transverse sinus stenosis alone was highly sensitive and specific. The adult, multicenter Idiopathic Intracranial Hypertension Treatment Trial looked at the effects of acetazolamide and weight loss on PIH. The study confirmed a number of previously held beliefs; including the fact that headache is the most common presenting symptom in PIH. The majority of patients present with bilateral papilledema, with 58.2% grading symmetrically on the Frisen scale and 92.8 percent within one grade. Even though diplopia is a common symptom that people report, very few of them show signs of cranial nerve palsy. Failure is influenced by factors such as male gender, severe papilledema, and decreased visual acuity at presentation. Mild metabolic acidosis is linked to taking acetazolamide. During acetazolamide treatment, checking for hypokalemia or aplastic iron deficiency isn't suggested. Due to a case of transaminitis and pancreatitis with elevated lipase, monitoring transaminases during the titration phase of treatment should be considered. Secondary intracranial hypertension has also been linked to COVID-19 infection and MIS-C in recent case reports.

Idiopathic intracranial hypertension is a rare condition characterized by elevated intracranial pressure with no known cause. The most common clinical manifestations include papilledema, decreased visual acuity, and headache. Idiopathic Intracranial Hypertension (IIH) is thought to be caused by vitamin A and its metabolites, known as retinoids. Acetazolamide improved visual field function, papilledema severity, quality of life, and Cerebro-Spinal Fluid (CSF) pressure in the IIH Treatment Trial (IIHTT). We predicted that serum and CSF levels of vitamin A metabolites would be higher in IIH patients. Idiopathic Intracranial Hypertension (IIH) typically affects obese women of childbearing age with a BMI greater than 30 and no visible intracranial space-occupying lesion. Due to elevated intracranial pressure, patients typically present with headache, nausea, vomiting, tinnitus, blurry vision, and in more severe cases, cranial neuropathies and ophthalmological manifestations. In IIH, complete ophthalmoplegia is uncommon. To speed up recovery and limit long-term neurological and visual impairments, aggressive pharmacological, endovascular, and surgical treatment is required in these situations. A rare case of IIH associated with third, fourth, and sixth cranial nerve palsies resulting in complete unilateral ophthalmoplegia is presented here. The patient underwent dural sinus stenting, and 2.5 years later, full extraocular movements were observed. In addition, we conduct a comprehensive literature review of IIH-related complete and partial ophthalmoplegia, focusing on the associated presentations, pathophysiology, treatment, and outcomes.