Alice In Wonderland Syndrome

What is Alice In Wonderland Syndrome?

Alice in Wonderland Syndrome (AIWS) is also known as Todd's Syndrome as it was first identified by Dr John Todd, a British psychiatrist, who noticed that the anecdotes of the disease resembled the character of Alice Lindell from Lewis Carrol's famous novel Alice in Wonderland.

Alice in Wonderland Syndrome is a rare disease that causes temporary episodes of distorted perception and disorientation. It is an alteration of visual perception wherein the sizes of body parts or external objects are perceived incorrectly. Usually, such perceptions occur at night.



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What causes this syndrome is still unknown but a few researchers believe that it *may be* related to unusual electrical activity in the brain that causes abnormal blood flow to the parts of the brain, resulting in an altered visual perception. Few studies have shown that Alice in Wonderland Syndrome stems from infections occurring as a result of head trauma and migraines. Infact, migraine is considered to be the leading cause of this syndrome in adults. Vision, touch and hearing are also affected in individuals, causing a loss of time perception and a feeling of time passing slow.

There are many case reports that suggest a cluster of symptoms associated with Alice in Wonderland Syndrome where there may be a perception of things being physically larger or smaller in comparison to their surroundings. Some individuals may have an impression that their surroundings are growing or shrinking than them. Some people also believe that their surroundings are moving.

What is the Pathophysiology of This Syndrome?



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The Temporo-Parieto-Occipital (TPO) junction connects the temporo-occipital, parieto-occipital, and temporoparietal junctions where the visual and somatosensory information is integrated to generate the inner and external representation of self. Alice in Wonderland Syndrome attributes to the migrainous cortical dysfunction of the non-dominant parietal lobe. The electrical stimulation of the parietal lobe leads to distortion in the size and length of the image perceived. Decreased perfusion to the non-dominant parietal lobe during an attack leads to the perception of symptoms. In most cases, Alice in Wonderland Syndrome symptoms often precede a migraine attack.

What are the Causative Factors for Alice in Wonderland Syndrome?

The causative factors of Alice in Wonderland Syndrome can be grouped under the following types:

Conditions	Infectious Diseases	Intraparenchymal Haemorrhagic Stroke	Drugs

Headaches		• Ischemic stroke	
 Abdominal migraine Cluster headache Tension-type headache Transient Headache and Neurological Deficits with Cerebrospinal Fluid Lymphocytosis (HaNDL Syndrome) Epilepsy Temporal lobe epilepsy Frontal lobe epilepsy 	 Epstein-Barr virus Coxsackie Bl virus Cytomegalovirus Influenza A virus Mycoplasma Varicella-zoster Typhoid encephalopathy Lyme neuroborreliosis Streptococcus pyogenes (scarlet fever and tonsillopharyngitis) Parainfective vasculitis Cerebrovascular diseases 	 Cavernous angioma Robin Hood syndrome Pituitary infarction Other organic brain diseases Acute disseminated encephalomyelitis Glioblastoma Psychiatric disorders Depressive disorder Schizophrenia Schizoaffective disorder 	 Dextromethorphan Cough syrup (containing dihydrocodeine and DL-methyl-ephedrine) Montelukast Topiramate LSD Hallucinogen Persisting Perception Disorder (HPPD) after LSD withdrawal Toluene-based solvent

What are the Symptoms of Alice in Wonderland Syndrome?



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The symptoms of patients suffering from Alice in Wonderland Syndrome may vary differently and the episodes can last from a few minutes to an hour. Some commonly occurring symptoms include:

Migraine

Patients may experience a subtype of migraine that can lead to an aura, visual derangements, hemi-cranial headaches, nausea and vomiting.

Size Distortion

Micropsia and macropsia may be observed wherein, the body or objects may appear smaller or grow larger. Other symptoms of size distortion include Achromatopsia (inability to perceive colour) and Dysmorphosia (causing preception of lines occurring as wavy). Individuals can also have a feeling of derealization, depersonalization, somatopsychic duality and alteration in the judgement of time.

Hallucinations

Size distortion can occur where objects appear to be near or growing larger than they are (Pelopsia) or objects growing smaller and farther away (called Telopsia). When time distortion occurs, the individual believes that time is passing very slow or too fast. In some cases, sound distortion can occur causing every sound to be loud and intrusive.

Loss of coordination

Involuntary movements of limbs and difficultly in the coordination of movements while walking can occur.

- The feeling of derealization, depersonalization, somatopsychic duality
- Alteration in the judgement of time
- Lilliputianism (people appearing smaller)

What are the Risk Factors For Alice in Wonderland Syndrome?

Why some people develop this syndrome while others don't is still a mystery. However, some risk factors that can increase an individual's risk of developing the condition are:

- Repeated attacks of migraine
- Epstein Barr Virus Infection
- Infectious Mono Nuclueosis
- Genetics
- Brain Tumor
- Disseminated encephalomyelitis

What are the Complications of Alice

in Wonderland Syndrome?

Patients with Alice in Wonderland Syndrome usually get better with time and very rarely complications arise from it. In most cases, migraine is the triggering factor and results in repeated episodes that take place over time. However, it has been noted that about one-third of the people without a history of migraine can also develop this condition.

How is Alice in Wonderland Syndrome Diagnosed?

If you observe any symptoms of Alice in Wonderland Syndrome in a patient, you can refer take a proper medical and family history of the patient. Though there are no specific tests or investigations that help you conclude the diagnosis of AIWS, some useful diagnostic aids like MRI scan, EEG, a blood test to detect the EBV or investigating further into factors that can cause or trigger symptoms may be done.

How is Alice in Wonderland Syndrome Treated?

There is no standard or prescribed treatment protocol for Alice in Wonderland Syndrome. Usually, drugs used to treat migraines such as anticonvulsants, antidepressants, calcium channel blockers, beta-blockers and other treatments like repetitive transcranial magnetic stimulation are used for effective resolution of the symptoms. If the causative factor of a patient's AIWS is infections like the EBV, then appropriate treatment for the infection can help subside the symptoms. If stress is the causative factor for AIWS, the patient may be advised appropriate stress-relieving lifestyle methods like exercising, meditation, and yoga.

Alice in Wonderland Syndrome is not a serious issue but its

symptoms can be bothersome and affect one's daily life. Sometimes, patients may experience episodes for several days, and in some cases, they may not experience any symptoms for weeks or months together. Symptoms usually lessen over a period of time and may disappear completely by the time the individual reaches puberty.

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