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Commentary

Copper Toxicity in Normal People and in Wilson's Disease Patients

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DESCRIPTION

Wilson's illness is a genetic disorder characterized by copper toxicity and build up. It bears the name of Alexander Kinnear Wilson, an American neurologist who first identified the condition. Wilson found it quite interesting that certain individuals, other than those with wilson's illness, had liver and brain impairment at the same time. Other medical researchers added to the body of knowledge about the illness by identifying excess copper and copper toxicity as its causes. Later, still more researchers found that medications that facilitate the removal of extra copper could be used to treat the condition.

Each day, people consume a modest quantity of copper through their diet. This is typically a bit more than the body requires. In order to prevent the issue of having too much copper, the additional copper that we all consume every day must be eradicated. The liver normally excretes this additional copper in the bile for loss in the stool as a means of disposal. Patients with wilson's illness have a mutation in this copper excretion route, making it impossible for them to get rid of extra copper.

As a result, these people daily collect a little amount of copper, which is initially harmlessly deposited in the liver. While the liver may temporarily store some additional copper without harm, eventually the storage capacity is reached and the liver slowly starts to be harmed by the extra copper. Although copper is necessary for life, too much of metal can be hazardous. The fact that copper is a potent oxidizer appears to be related to its toxicity. Oxidant damage is the term for the harm done to tissue. In most wilson's disease patients, liver damage probably starts as early as three or four years of age. The majority of the time, there are no obvious symptoms of a problem for several years.

It is common for patients to develop liver disease in their teens or early 20 as a result of ongoing liver injury. The liver condition may present as hepatitis, with fatigue and mild jaundice, which is most noticeable by a yellowing of the skin and frequently the whites of the eyes. The majority of the time, tests for viral hepatitis come out negative, but they occasionally do if the patient unintentionally comes into touch with a virus that causes the disease. The wilson's hepatitis episode typically resolves if the underlying wilson's illness is undiscovered, only to return in many people several months or years later. The doctor frequently diagnoses "chronic active hepatitis" based on this recurrent hepatitis picture, which implies a form of active hepatitis caused by an immune reaction, such as reaction to a virus.

The liver illness may manifest as a picture of liver failure rather than as hepatitis. This sort of patient typically exhibits jaundice in addition to ascites, or fluid buildup in the abdomen, and occasionally edoema, or swelling of the ankles. There could be minor or severe liver failure.

Wilson's disease for the patient and family

The only thing that can save the patient's life since they are terminally ill and fast deteriorating is a liver transplant. The third technique for liver disease to be diagnosed is with persistent cirrhosis. Cirrhosis refers to liver scarring in which many of the healthy liver cells have been replaced by scar tissue. Unless the liver fails or unless a cirrhosis complication like intestinal bleeding arises, the patient is often unaware that they have cirrhosis because it doesn't present any distinctive symptoms. The majority of the time, cirrhosis is unintentionally detected during a procedure or checkup that was intended for another reason.

When the liver's capacity to hold copper is reached, extra copper leaks into the circulation and starts to accumulate in other organs. The brain is the second most delicate organ after the liver. As a result, in some patients possibly half the liver damage goes unnoticed by the patient or medical personnel, and in the interim, enough copper builds up in the brain to cause brain damage and the symptoms that go along with it. Movement coordination parts of the brain are injured by copper arc; hence the condition is referred to as a movement disorder. In other words, the patient struggles to coordinate his or her muscle motions and movements rather than experiencing muscular weakness. Speech of the individual could become slurred and challenging to comprehend. Wilson's disease can cause a variety of speech impairments. The crucial thing to remember is that a speech anomaly is one of the typical early nervous system signs of wilson's disease, and a doctor typically cannot determine whether a specific type of speech defect is caused by Wilson's disease.

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Wilson's disease can be particularly treated with anti-copper medicine once it has been identified. Wilson's illness requires a variety of treatments depending on the disease's stage and appearance. The patient and family of the patient in whom the diagnosis has been established should comprehend contemporary treatment and not just comply with a doctor's recommendation to use penicillamine as a treatment. This would frequently be the patient's erroneous line of action.