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Auto brewery syndrome

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Abstract

Auto brewery syndrome is also known as intestinal fermentation syndrome in which ethanol is produced through engogenous fermentation of fungi or bacteria in gastro-intestinal system, oral cavity or into urinary tract system. It is a rare medical condition which intoxicating quantities of ethanol are produced by endogenous fermentation in the digestive system. The organism responsible for auto brewery syndrome and it includes various organisms yeast and bacteria including including Saccharomyces Cerevisiae, Saccharomyces Boulardii, Candida Albicans, Candida tropicalis, Candida Krusei, Candida Glabrata, Candida KEFYR, Candida Parapsilosis, Klebsiella pneumonia and Enterococcus fascism. These organisms use lactic acid fermentation or mixed acid fermentation pathways.

Keywords: Auto brewery syndrome, ethanol fermentation, high blood alcohol, intoxication

Introduction

Auto brewery syndrome also known as intestinal fermentation syndrome. Ethanol is produced by endogenous fermentation by fungi and bacteria in the gastrointestinal system, urinary system or oral cavity. People with auto brewery syndrome present with the symptoms of alcohol intoxication intake of alcohol and it reports with a high sugar and high carbohydrate diet [2].

There are few cases of auto brewey syndrome which have been reported in years but the condition has been mentioned in the news for several times. This syndrome records abnormally high blood alcohol levels when they are not consuming alcohol [3].

History of auto brewery syndrome

It has been described in japan where it is called "Meiteisho". [6] In 1948, Ladkin and Davies reported the world's first case of endogenous alcohol production in a 5 year old African boy who died after a perforation of the posterior abdominal wall due to excessive gas swelling and a distention of abdomen [4].

Etiology [5]

Auto brewery syndrome occurs in healthy people and has multiple causes but it is most common in people with comorbidities such as diabetes and obesity related diseases. It includes

- Crohn's disease
- Irritable bowel syndrome [massive small bowel hypertrophy]
- Bacterial overgrowth of the small intestine
- Short bowel syndrome
- Diabetes
- Obesity
- Immune weakness
- Laprotomy
- Gastrectomy
- Antibiotic therapy [5]

Pathophysiology

Precipitation and inducers leading to self-made syndrome remain uncertain.

- Changes in the gut flora: Disruption of the gut homeostasis caused by overgrowth of fungi and rarely severe alcohol producing bacteria.

- Fungal fermentation: *Saccharomyces cerevisiae* are commercially known as brewer's yeast has been used in

the production of beer for centuries [7].

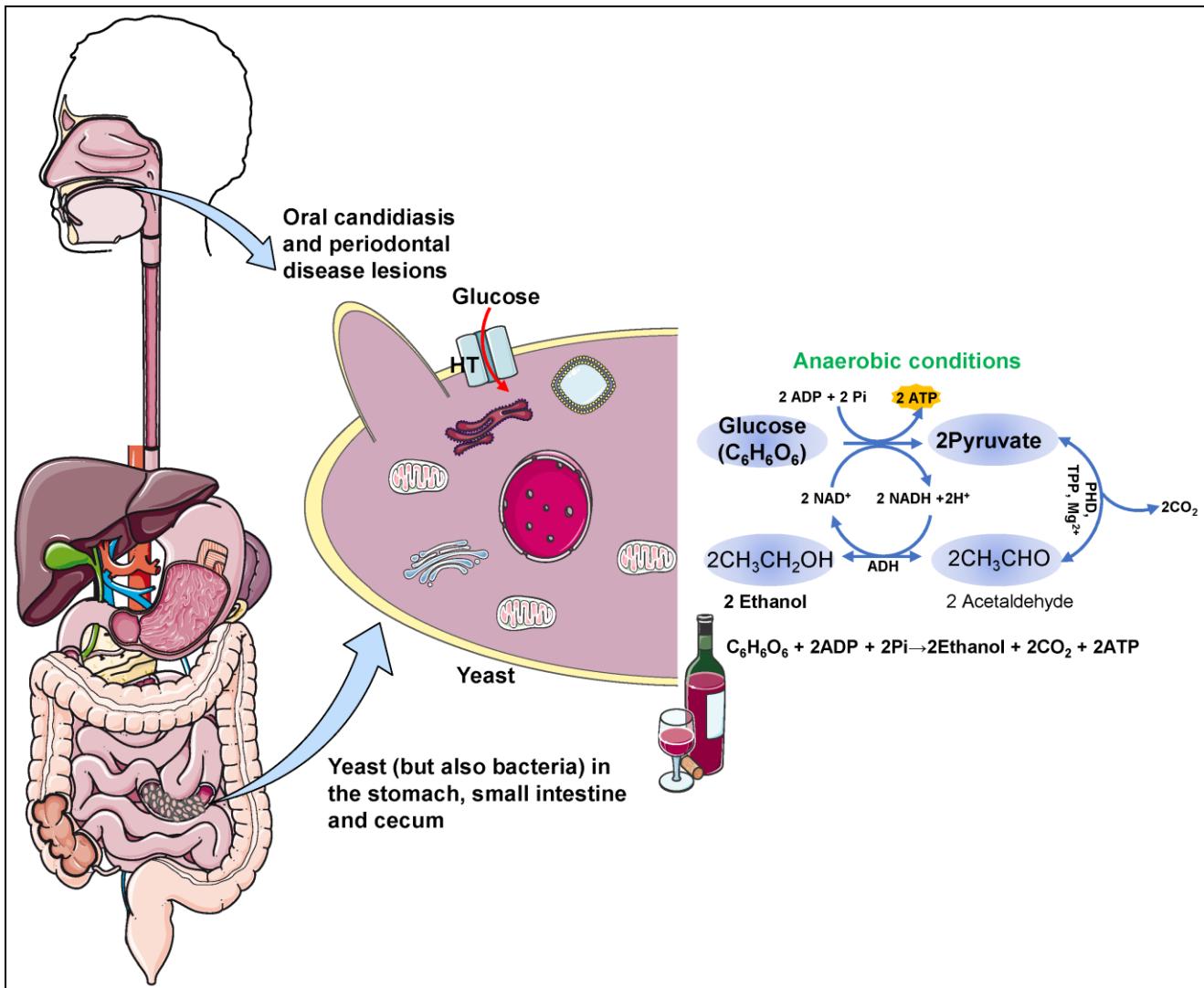


Fig 1: Digestive system

Symptoms [8]

Intestinal fermentation syndrome has many symptoms resulting from this condition when you have a hangover from drinking. The symptom which includes

- Poor memory
- Dizziness
- Body pain
- Stomach ache
- Flatulence
- Changes in defecation
- Nose discharge
- Thirsty for sugar [8]

Diagnosis [3]

There are no specific test to diagnosis a condition called auto brewery syndrome. The condition has been newly discovered but further research is needed to diagnose this condition. The symptoms of this syndrome are usually insufficient to diagnose this syndrome. The small samples of feces should be tested. Another test used to diagnose this syndrome is called the glucose tolerance test.

In the glucose tolerance test sugar capsules are given and you should not eat or drink for several hours before or after

the test. After an hour the doctor will check the blood alcohol level. The people who check don't have alcohol syndrome the alcohol level. The person checking does not have alcohol syndrome the alcohol level is zero. In people with alcohol syndrome the alcohol levels may range from 1.0 to 7.0 milligrams per deciliter.

Home test may not work because people may not have any noticeable symptoms. Fecal samples are also taken to check for abnormal level of bacteria and fungi. Some additional test may help to determine gastrointestinal disorders [3].

Complication [9]

In most cases this auto brewery syndrome progresses without major complications. But it can lead to poor health conditions for example

- Chronic fatigue syndrome.
- Irritable bowel syndrome.
- Depression and anxiety.
- Syncpe [9]

Risk Factors [10]

This syndrome is either present from birth or either it will develops later. Some hazard elements are stated here are as

follows

- Diabetes
- Chronic intestinal obstruction
- Liver dysfunction
- Gastro paresis

Reduced immunity, use of antibiotics poor health for a long time can increase a risk a risk of auto brewery syndrome^[10].

Management^[11]

- Treat any underlying clinical condition
- Choosing complicated carbohydrates over easy carbohydrates
- Limit and keep away sugary ingredients and beverages
- Weight loss if needed
- Do physical activities which incorporates running, cycling, skipping and walking that is beneficial for burning calories^[11].

Homoeopathy Management

NUX Vomica^[12]

It is the extraordinary anti-alcoholic remedy. It is useful when affected person has headache, tremor and bad taste. It is a vital treatment to alcohol withdrawal symptoms like confusions, shaking and hallucinations. The delirium tremens markens with gastric disturbance and irritability.

Phosphorus^[12]

Sour flavor and bitter eructation's after the meal. Vomiting water is thrown up as soon as warm as gets into the stomach. Bad effects of alcohol. Pain in the stomach relieved after eating cold food.

CHINA^[13]

Gastric symptoms after eating fruits fish and drinking the fresh wine. Flatulent distension almost the feeling it will burst. Vomiting of the blood. Sometimes followed by the dropsy in the extremities. Frequent vomiting will takes place. Vomiting of sour mucus bile blood. Disorders of the stomach after having milk. Pulsation in the stomach and rumbling.

Sepia^[13]

Sepia brings many things in connection with the appetites thirst drinking and stomach. Spoiled stomach and sour bitter eructation's of the food. Vomiting of the food and mucus all gone sensation and empty feeling in the stomach. Flatulent with head ache after increased blood alcohol level. Burning sensation in the pit of the stomach. Sepia patients will longing for vinegar acids and pickle. Loathes fat.

Pulsatilla^[14]

Vomiting of food which was eaten long before. Pain felt in the stomach an hour after the eating. Great aversion to warm food, drink and fat food. Eructation's and taste of food remains a long time after having pastry fruits. Dryness in the mouth and throat while sleeping and always wakes with the dry tongue but they won't have any thirst.

Calcarea Carb^[14]

Ill effects of having alcohol. Persistent sour taste. Dryness of the tongue at the night. Aversion to meat and indigestible things. Chalk, coal, pencils also for eggs. Milk disagrees.

Dislike of fat. Bleeding in the gums. Dislikes of fat will be there.

Ferrum Metallicum^[14]

Loathing of sour things. Eructation's of food after eating without nausea. Vomiting immediately after eating. Fiery redness of the face. Best adapted to the young persons who are Anaemic and chlorotic with pseudo-plethora who flesh very easily.

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