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Hyponatremia: A case study with homoeopathic treatment

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Abstract

Hyponatremia refers to a lower-than-normal level of sodium in the blood. Sodium is essential for many body functions including the maintenance of fluid balance, regulation of blood pressure, and normal function of the nervous system. Hyponatremia has sometimes been referred to as "water intoxication," especially when it is due to the consumption of excess water, for example during strenuous exercise, without adequate replacement of sodium.

Normal serum sodium levels are between approximately 135 - 145 mEq/liter. Hyponatremia is generally defined as a serum sodium level of less than 135 mEq/L and is considered severe when the serum sodium level is below 125 mEq/L.

Keywords: Hyponatremia, Sodium, body, blood

Introduction

Many factors can cause low blood sodium ranging from an underlying medical condition to drinking too much water which causes, the sodium in body to become diluted. When this happens, body's water levels rise, and cells begin to swell. This swelling can cause many health problems, from mild to life-threatening. Causes of low sodium include.

- Severe vomiting or diarrhea
- Taking certain medications, including antidepressants and pain medications
- Taking diuretics and restricted salt intake.
- Drinking too much water during exercise (this is very rare)
- Excessive consumption of beer, produces low sodium levels.
- Kidney disease or failure
- Liver disease
- Heart problems
- Adrenal gland disorders, such as Addison's disease
- Hypothyroidism
- Primary polydipsia, a condition in which excess thirst makes drink too much
- Using ecstasy
- Syndrome of inappropriate antidiuretic hormone (SIADH), which makes body retain water
- Diabetes insipidus, a rare condition in which the body doesn't make antidiuretic hormone
- Cushing syndrome, which causes high cortisol levels (this is rare)
- Certain other factors increase risk for low blood sodium, including: old age, being a high-performance athlete, living in a warmer climate.

Clinical signs and symptoms

Symptoms of low blood sodium can vary from person to person. If the sodium levels fall gradually, may not experience any symptoms. If the sodium levels drop very quickly, symptoms may be more severe. Losing sodium quickly is a medical emergency. It can cause loss of consciousness, seizures and coma. The following are the common manifesting signs:

- Disorientation
- Fatigue
- Headache
- Nausea and vomiting
- Muscle cramps
- Excessive sweating
- Muscular weakness, heat exhaustion, and mental apathy, short-term memory loss, confusion, lethargy, loss of appetite, irritability.

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Diagnosis/ Investigation

If blood sodium levels are low but urine sodium levels are high, body is losing too much sodium. Low sodium levels in both blood and urine mean body is not taking enough sodium. There may also be too much water in body.

There are three essential laboratory tests in the evaluation of patients with hyponatremia that, together with the history and the physical examination, help to establish the primary underlying etiologic mechanism: urine osmolality, serum osmolality, and urinary sodium concentration.

Urine osmolality: Urine osmolality helps differentiate between conditions associated with impaired free-water excretion and primary polydipsia. A urine osmolality greater than 100 mOsm/kg indicates impaired ability of the kidneys to dilute the urine.

Serum osmolality: Serum osmolality readily differentiates between true hyponatremia and pseudohyponatremia. The latter may be secondary to hyperlipidemia or hyperproteinemia, or may be hypertonic hyponatremia associated with elevated glucose, mannitol, glycine (posturologic or post gynecologic procedure), sucrose, or maltose (contained in IgG formulations).

Urinary sodium concentration: Urinary sodium concentration helps differentiate between hyponatremia secondary to hypovolemia and syndrome of inappropriate antidiuretic hormone secretion (SIADH). With SIADH (and salt-wasting syndrome), the urine sodium is greater than 20-40 mEq/L. With hypovolemia, the urine sodium typically measures less than 25 mEq/L. However, if sodium intake in a patient with SIADH (or salt-wasting) happens to be low, then urine sodium may fall below 25 mEq/L.

Management

The government recommends limiting daily sodium intake to one 2,300 milligrams (one tea spoon). However, nearly 70 percent of US adults are at risk of developing health problems associated with salt consumption. American Heart Association recommends that the following at-risk individuals should limit their daily sodium intake to 1,500 milligrams (2/3 of a teaspoon)

- People over age 50.
- People who have high or slightly elevated blood pressure.
- People who have diabetes.
- African Americans.

The treatment of hyponatremia depends on the underlying cause and whether the patient's blood volume status is hypervolemic, euvoletic, or hypovolemic. In the setting of hypovolemia, intravenous administration of normal saline (salt) is usual, care being taken not to raise the serum sodium level too quickly. Euvoletic hyponatremia is usually managed by fluid restriction and treatment to abolish any stimuli for ADH secretion such as nausea. Likewise, drugs causing SIADH are discontinued if possible.

Treatment of Hyponatremia

Allopathic Treatment of Hyponatremia

Allopathic Treatment of Hyponatremia includes the following medications

- Intravenous fluids.
- Medications for headache, nausea and seizures.
- Hormones to replace the deficiency.

Dietary & Herbal Treatment of Hyponatremia

- Choose salty snacks instead of sugary snacks throughout the day.
- Add sodium-rich ingredients in meals.
- Choose to drink a sports beverage that contains salt, particularly if you exercise regularly.

Homoeopathic Treatment

Homeopathy balances sodium level and relieves complaints. It treats the person as a whole. Treatment is constitutional. It means that homeopathic treatment focuses on the patient as a person, as well as his pathological condition. It balances the energy system, improves immunity and body functions. It naturally cures the root cause of disorder. Homoeopathic Treatment based on symptoms similarity (Totality of symptoms). For selection of remedy, a detailed case taking is necessary. For this the repertory is very useful.

Case report

Preliminaries

- Name – Mr. Lokendra Singh
- Age – 63 Years
- Sex/Religion – Male/ Hindu
- Marital Status – Married
- Diet – Nonvegetarian
- Address – S - 59, Mahaveer Nagar, Jaipur, and Rajasthan. Pin – 302018

Present complaints

A 63 years old hindu male, businessman, married, came with following complaints –Weakness and heaviness at legs, trembling left hand, Flatulence in abdomen < evening and after eating, sedentary habit.

Past History: H/O Alcohol intoxication.

Family History

Father died- H/O Hypertension

Mother – also Hyponatremic

Physical Generals

Appetite: Diminished especially in evening.

Desire: Sweet

Thirst: Nothing Specific.

Tongue: Moist, shriveled feeling.

Stool: Constipation- No desire for stool. Only after using laxative, first hard than followed by soft stool.

Urine: Nothing Significant

Sweat: Nothing Significant

Sleep: Unrefreshed, took sleep pills for sleep.

Dream: Business

Thermal: Chilly patient.

Mental General: Thinking too much, forgetfulness, repeat sentence many times, anxious about business, dreams of business at night. Very lazy.

Clinical Examination

Built- Short, wheatish complexion, Thin extremities, obesity at belly.

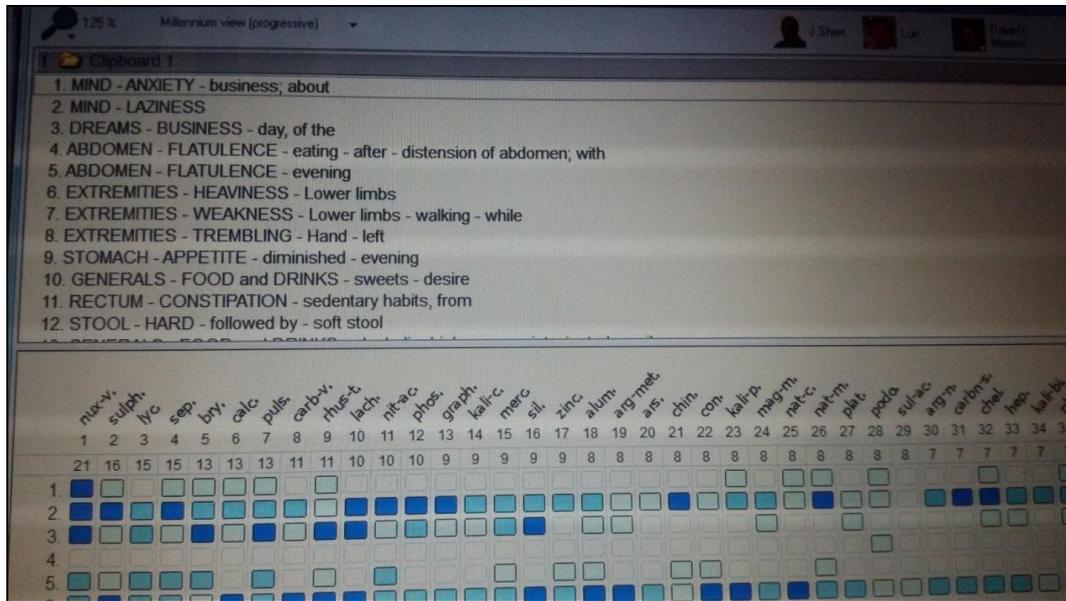
Pulse – 68/minute; B.P. – 160/90 mm of Hg
 Investigation – Serum Sodium 121 mEq/L on 15th July, 2015

Totality of symptoms

- Thinking too much, forgetfulness, repeat sentence many times, anxious about business,
- Dreams of business at night.
- Weakness and heaviness at legs,
- Trembling left hand,

- Flatulence in abdomen < evening,
- Constipation- No desire for stool.
- Built- Short, wheatish complexion, Thin extremities, obesity at belly.

Repertorisation done by RADAR 9.1 using synthesis repertory: After analysis & Evaluation of symptoms, Repertorisation and consultation of MATERIA MEDICA Medicine selected was Nux – vomica.



Medicine prescribed

Nux – vom 1M/1 dose State, followed by placebo/ TDS for 15 days. Serum Sodium was 134.2 mEq/L on 4th August, 2015. Patient felt better in constipation, flatulence, trembling in hand, weakness in legs. Again placebo repeated for 30 days. No complaints at all.

Conclusion

Sodium deficiency, or hyponatremia, is a term used when the body's balance of electrolytes becomes unstable. There may be too much fluid in the system, diluting the sodium, or the sodium levels themselves may be too low. While sodium deficiency can occur on its own, it can also develop because of excessive diarrhea or vomiting. Another way that it can develop is when someone experiences excessive fluid buildup, or edema, when the body cannot expel the excess water as quickly as it builds up.

Sodium is an electrolyte the body needs to help regulate blood pressure and ensure muscle and nerve cells work properly. It is rarely life-threatening, but the symptoms can be debilitating if left untreated. We should consider the constitution, mental generals for the selection of most appropriate homeopathic remedy.

Complications

Chronic hyponatremia can lead to neurological impairments. These neurological impairments most often affect gait (walking) and attention, and can lead to falls, osteoporosis, and decreased reaction time.

Complications for chronic hyponatremia are most dangerous for geriatric patients. Falls are the leading cause of deaths related to injury among people 65 years or older.

Hyponatremia induces osteoporosis and found the developing osteoporosis to be 2.87 times higher among adults with mild hyponatremia compared to those without. Acute hyponatremia can lead to much more serious complications including brain disease, brain herniation, cardiopulmonary arrest, cerebral edema (brain swelling), seizures, coma, and death.

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