HYPONATREMIA: DEATH BY WATER INTOXICATION

When admitted, he weighed 128lb and was given intravenous fluids during and after surgery. When he died shortly after, his body was 150lb which indicates that his body might have taken on a large volume of water. Sadly, there are also cases of death due to a form of child abuse that involves forcing children to drink excessive amounts of water and other liquids as a form of discipline and punishment.

(5) How much water is too much? Here are some examples. In 2002, 3 year old Rosita Gonzalez died when her babysitter forced her to drink 3 liters of water in a 4 hour period as a form of punishment. In 2007, 28 year old Jennifer Strange died after drinking 7.5 liters of water in a 3 hour period during a water drinking contest. In 2014, 17 year old Zyrees Oliver died after drinking 15 liters of water and Gatorade during and after a football practice.

(6) Treatment for mild hyponatremia involves restricting fluid intake until the body is able to remove most of the excess water in the urine naturally. It may also involve administering saline solution into the blood. Saline contains electrolytes to help restore the proper amount of salts in the body. Drugs like diuretics and vasopressin receptor antagonists can also be administered. Both of these drugs cause the kidneys to produce urine more rapidly and in greater volumes than it normally would. Healthy adult kidneys can produce 800mL to 1000mL of urine an hour, but these drugs will cause them to produce even more.

Article Questions

1) What do neurological symptoms mean and what are some neurological symptoms of hyponatremia?

   Neurological symptoms are symptoms associated with the nervous system, especially the brain. Some symptoms include nausea, vomiting, headache, confusion, lethargy, cramps, seizures, decreased consciousness and coma.(2)

2) How is brain tissue different from other tissues during hyponatremia?

   When tissues take in water, they can swell and expand, but when brain tissue takes in water and expands, the skull causes the brain to be squeezed inside of it .(3)

3) The process of water migrating from areas of low electrolyte concentration to areas of high electrolyte concentration is called _____osmosis(3)_____. ____Cerebral edema(3)____ is the medical term for the swelling of the brain.

4) Why are athletes at risk of exercised-associated hyponatremia?

   Often athletes try to compensate for excessive sweating with increased hydration. They can accidentally consume too many fluids.(4)

5) Why are infants under 9 months old at risk of hyponatremia?

   Since they are very small and have a low body mass, it is easy for them to accidentally overconsume liquids.(4)

6) How do diuretics and vasopressin receptor antagonists help counteract the effects of hyponatremia?

   They cause the kidneys to produce urine more rapidly and in larger volumes.(6)