

Hyponatremia treatment

Management is based on the severity and duration of [hyponatremia](#), and the presence of [symptoms](#).

Two caveats:

1. be sure that hyponatremia is not due to [CSW](#) before restricting fluids.
2. avoid too rapid correction and avoid correcting to normal or supranormal (overcorrection) sodium to reduce the risk of [osmotic demyelination syndrome](#).

Cerebral Salt Wasting Treatment

see [Cerebral Salt Wasting Treatment](#).

Syndrome of inappropriate antidiuretic hormone secretion treatment

see [Syndrome of inappropriate antidiuretic hormone secretion treatment](#).

Evaluation of the patient's fluid status is important in determining the type of hyponatremia, which will direct the type of management required.

Limited evidence exists for many of the interventions commonly used to treat hyponatremia.

Evidence from randomized controlled trials is largely centred around studies of vasopressin receptor antagonists with surrogate outcome measures.

In 2015 Marupudi and Mittal, reviewed literature on hyponatremia in subarachnoid hemorrhage and presented recommended protocols for diagnosis and management ¹⁾.

Hyponatremia and [dehydration](#) due to natriuresis after subarachnoid hemorrhage are related to [symptomatic vasospasm](#). Therefore, most institutions are currently targeting euolemia and eunatremia in subarachnoid hemorrhage patients to avoid complications ²⁾.

Current evidence from a [Systematic Review](#) does not demonstrate a benefit of preventative treatment with [mineralocorticoids](#) in clinically important outcomes, although a difference cannot be ruled out due to imprecision. Larger well-designed trials are needed to establish the impact of mineralocorticoids and fluid and sodium supplementation strategies on clinically relevant outcomes in the prevention and treatment of hyponatremia in patients with SAH ³⁾.

CSW occurs from increased natriuretic peptide secretion and causes hyponatremia with diuresis and natriuresis, reduces total blood volume and increases risk of [vasospasm](#). SIADH manifests as euvolemic hyponatremia with concentrated urine from excessive ADH secretion. CSW is managed by administering isotonic fluids and fludrocortisone while SIADH is corrected with fluid restriction. Severe and refractory hyponatremia may warrant hypertonic saline administration. Other electrolyte disturbances in these patients include hypomagnesemia, hypokalemia and hypocalcemia ⁴⁾.

Complications

Rapid correction of hyponatremia is particularly dangerous in the setting of chronic hyponatremia.

It should be carried out in a monitored setting with close observation of serum sodium levels.

see [Osmotic demyelination syndrome](#).

see [Hyponatremia treatment after transsphenoidal surgery](#).

¹⁾

Marupudi NI, Mittal S. Diagnosis and Management of Hyponatremia in Patients with Aneurysmal Subarachnoid Hemorrhage. J Clin Med. 2015;4(4):756-67. doi: 10.3390/jcm4040756. PMID: 25937938; PMCID: PMC4415499.

²⁾

Uozumi Y, Mizobe T, Miyamoto H, Ashida N, Katsube T, Tatsumi S, Nakamura M, Kohmura E. Decreased serum sodium levels predict symptomatic vasospasm in patients with subarachnoid hemorrhage. J Clin Neurosci. 2017 Dec;46:118-123. doi: 10.1016/j.jocn.2017.08.037. Epub 2017 Sep 5. PubMed PMID: 28887070.

³⁾

Shah K, Turgeon RD, Gooderham PA, Ensom MHH. Prevention and Treatment of Hyponatremia in Patients with Subarachnoid Hemorrhage: A Systematic Review. World Neurosurg. 2018 Jan;109:222-229. doi: 10.1016/j.wneu.2017.09.182. Epub 2017 Oct 5. Review. PubMed PMID: 28987848.

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Rose MJ. Aneurysmal subarachnoid hemorrhage: An update on the medical complications and treatments strategies seen in these patients. Curr Opin Anaesthesiol. 2011;24:500-7.

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