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Case Report

The Syndrome of Inappropiate Antidiuresis Related To SARS-COV2 Pneumonia Treated with Tolvaptan

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Hyponatremia is the most frequent electrolytic disorder in hospitalized patients [1]. Approximately, 1/3 of all cases of hyponatremia are accounted for by the Syndrome Inappropiate of secretion of antidiuretic hormone (SIADH) [2], and may be secondary to drugs, infections or tumors. Most respiratory infections have been reported to cause SIADH.

We present a case of SIADH related to severe bilateral pneumonia due to SARS-COV2.

CASE:

A 62-year-old woman, with no relevant medical history, attended the emergency department with a non-productive cough, fever and dyspnea. Upon admission, she presented bilateral pulmonary infiltrates compatible with SARS-COV2 pneumonia that was confirmed with nasopharyngeal swab proved to be positive in the Polymerase Chain Reaction analysis and was treated with hydroxychloroquine and azithromycin for 5 days according to the protocol of the hospital center.

After a few days she presented clinical and radiological worsening with lung CT showing bilateral oppacities in all lobes (Figure 1) requiring orotracheal intubation and mechanical ventilation in the Intensive Care Unit (ICU).

After 20 days in the ICU, she presented a progressive decrease in sodium levels up to 121 mmol/ L associated with drowsiness, dizziness and severe headache. Brain CT was normal. Urine chemistry showed urine sodium of 134 mmol/L,urinary osmolality of 611 mOsm /L, plasma osmolality of 259 mOsm /L, serum uric acid 1.8 mg/dl and a negative clearance of electrolyte-free water (Table 1).

Figure 1: Computed tomography (CT).

She was euvolemic and did not recieved any diuretic treatment, so SIADH was suspected. Given the severity of her symptoms, treatment with hypertonic (3%NaCl) saline was started inmediately (1 ml / kg / h). Within 24 hours, sodium levels rose to 128 mmol/l with neurological improvement, hence treatment with hypertonic saline was stopped and replaced with the oral vasopressin V2 receptor antagonist Tolvaptan 7.5 mg/day.

After a few weeks of tolvaptan treatment the sodium levels remained normal without complications.

Discussion

SARS-COV2 infection usually cause bilateral interstitial pneumonia with different course between patients. Although there are no data on the incidence of SIADH associated with respiratory infection by SARS-COV2(4), it is expected to be higher if we extrapolate the information available from patients with other types of respiratory infections [3].

Table 1: Laboratory workup.

Value	Day 1	Day 30	Reference
Serum			
Sodium	121	136	135-145mmol/L
Potassium	4.1	4	3.5-5 mmol/L
Osmolality	249	284	280-290 mOSm/L
Glucose	100	102	gr/dL
Creatinine	0.5	0.5	mg/dL
Urea	20	22	mg/dL
Uric acid	1.6	3	2.6-6.6 mg/dL
TSH	4.4	-	0.55-4.78µUI/mL
T4	1.49	-	0.89-1.76ng/dL
Basal cortisol	14.6	-	5.3-22.5µg/dL
Urine			
Sodium	229	68	mmol/L
Creatinine	10	15	mg/dL
Potassium	33	20	
Osmolality	542	244	mOsm/Kg
Uric acid	11	-	mg/Dl

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Given the lack of data about clinical and radiological long-term course of SARS-COV2 pneumonia and its relationship with SIADH, it is impossible to predict the time of resolution. Therefore, it´s necessary a close follow up because the absence of proven treatment for SARS-COV2 pneumonia, could make a long-term treatment with tolvaptan necessary in some SIADH associated cases.

Conclussion

In summary, we report a case of SIADH associated with Pneumonia due to SARS-COV2 with success and safe treatment with Tolvaptan. SIADH should be considered in the differential diagnosis of hyponatremia in patients with SARS-COV2 infection.

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