

KSN 2016 Abstract Submission

Volume, Acid-Base & Electrolyte

KSN2016ABS-1324

A Case of Central Pontine Myelinolysis with Acute Respiratory Distress Syndrome after Mediculous Correction of Sodium Concentration in Chronic Alcoholics

Bomi Choi^{*1}, Young Soo Kim¹, Sun Ae Yoon¹, Young Ok Kim¹

¹Division of nephrology, Department of Internal medicine, Uijeongbu St Mary's Hospital, College of Medicine, The Catholic University of Korea, Uijeongbu, Korea, Republic Of

Background: N/A

Methods: N/A

Results: Alcohol affects almost every organs including brain, liver, heart, kidney, muscle, and lung. We recently experienced a fatal case of acute respiratory distress syndrome (ARDS) with central pontine myelinolysis (CPM) induced by chronic alcohol abuse.

A 59-year-old man was admitted due to change of mental status by severe alcoholic intoxication. Initially, he was nearly quadriparetic with a motor strength of 3/5 in the both upper and lower limbs. Brain MRI revealed no evidence of acute cerebral infarction and chronic ischemic change in both white matters. His sodium level was 100 mEq/L. Initial chest X-ray was within normal range. He was treated with fluid resuscitation, and sodium level was corrected at a rate of <10 mEq/L/day. The sodium levels began to increase to 106 mmol/L on day 2 and slowly normalized as 135 mEq/L on day 4. His mentality was improved after correction of sodium level, but irritability and autonomic hyperactivity remained. On hospital day 5, his oxygen saturation decreased, and chest X-ray revealed bilateral diffuse infiltration suggesting acute respiratory distress syndrome (ARDS). We performed endotracheal intubation and ventilator care with strict fluid restriction to treat ARDS caused by alcohol abuse. On hospital day 16, his chest X-ray showed improved pulmonary congestion, thus we removed endotracheal tube. Despite improved laboratory findings and general condition, his mentality was getting worse and remained confused. Follow-up brain MRI revealed T2 hyperintensity on the central pons with sparing of periphery, indicating the acute stage of central pontine myelinolysis (CPM). We consider steroid therapy or plasmapheresis for CPM associated with chronic alcoholic abuse.

CPM is a non-inflammatory demyelinating disease of the pons, characterized by loss of the myelin sheath of neurons. Although CPM has been recognized as a rare condition typically associated with rapid correction of hyponatremia, other medical conditions including alcoholism, malnutrition, hyponatremia, hypokalemia, severe liver disease, malignancy and even infectious condition can induce CPM. Particularly, as alcohol consumption can affect the baseline osmotic equilibrium and upregulate the aquaporin-4 (AQP4) water channel, CPM can easily developed in such condition despite mediculous correction of sodium concentration. On the other hand, alcohol abuse can lead to pulmonary dysfunction by inducing pulmonary glutathione depletion, abnormal GM-

CSF signaling, and abnormal angiotensin II production and its receptor expression, which are predisposing conditions for ARDS.

Here, we presented a rare case of CPM concomitant with ARDS, mainly caused by chronic alcoholism. Physicians should be aware of that alcohol abusers are vulnerable to CPM and ARDS, and make possible effort to prevent such conditions in chronic alcoholisms.

Conclusion: N/A

Keywords: acute respiratory distress syndrome(ARDS), Chronic alcoholics, Chronic pontine myelinolysis