Paliperidone-Induced Hyponatremia

To the Editor: Only one reported case of paliperidone-induced hyponatremia could be found in the literature.[1] We present a case of hyponatremia associated with paliperidone and discuss its clinical relevance.

Case report. Mr A is a 41-year-old man with schizoaffective disorder managed on a combination of olanzapine and sodium valproate prior to his presentation to our unit. He was admitted with a manic relapse following noncompliance with his oral medication. There was no past history of antipsychotic-induced hyponatremia. He was switched to oral paliperidone with a view to commence depot administration to ensure better compliance. The dose of paliperidone was titrated up to 9 mg daily while he remained on sodium valproate 1,500 mg twice daily. Three days after commencement of paliperidone, biochemical analysis revealed hyponatremia[2] with serum sodium of 125 mmol/L. His plasma osmolality was reduced to 261 mOsm/kg (reference range, 275–300 mOsm/kg), which together with his urine chemistry results indicated syndrome of inappropriate secretion of anti-diuretic hormone (SIADH), causing the hyponatremia. His serum cortisol together with thyroid and renal function were within normal limits. Attempts at fluid restriction were unsuccessful due to his manic disorganization. Mr A had no clinical features of hyponatremia, such as headache, nausea, and vomiting. Reduction in the sodium valproate dose did not correct his hyponatremia. Paliperidone was subsequently discontinued, leading to an increase in sodium levels to 132 mmol/L within 5 days. A Naranjo score of 7 implied a probable adverse drug reaction.[3]

SIADH is implicated as the most likely cause of antipsychotic-induced hyponatremia in the literature; however, the mechanism is not fully known. The postulated mechanisms include supersensitivity of D_2 receptors following prolonged D_2 blockade, and augmented peripheral response to angiotensin II. Antipsychotics may indirectly stimulate ADH release via activation of the baroreceptor reflex. More recently, the serotonergic pathway, via increased ADH release and heightened renal sensitivity to ADH, has also been postulated.[4]

Our case report is only the second to describe paliperidone-induced hyponatremia. Unlike the previously reported case, hyponatremia in our patient occurred within only a few days of paliperidone use. The clinical features associated with hyponatremia can often be difficult to distinguish from the underlying psychiatric condition. Early recognition and correction of hyponatremia can prevent subsequent serious medical complications. The mechanisms underlying antipsychotic-induced SIADH are currently poorly understood and require further research.

References

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Potential conflicts of interest: None.

Funding/support: None.

Patient consent: The patient gave permission to publish his case, and patient information has been de-identified to protect anonymity.

Published online: July 27, 2017.

Prim Care Companion CNS Disord 2017;19(4):16l02088
https://doi.org/10.4088/PCC.16l02088