Severe hyponatraemia, hypokalaemia and associated seizure following the administration of sodium picosulfate/magnesium citrate (picolax) – a case report

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Introduction

- Bowel preparation is known to cause minor electrolyte disturbances.
- There are only five reported cases of severe electrolyte disturbances following bowel preparation that have caused seizures.
- We report the case of a patient with severe hyponatraemia and hypokalaemia, resulting in a seizure, following the administration of picolax.

Case Report

- A 60 year old female patient with no significant past medical history and taking no regular medications presented with confusion following administration of picolax for an elective colonoscopy.
- On arrival her GCS was 14/15 but moments later she had a tonic-clonic seizure, with no urinary incontinence or tongue biting lasting two minutes.
- Following this, her GCS was 9/15. Laboratory tests revealed a sodium level of 119 mmol/L and a potassium level of 3.1 mmol/L.
- Other investigations including CT head and lumbar puncture were normal.
- Following intravenous replacement of electrolytes, her electrolytes improved (Table 1) and GCS returned to 15/15.

Discussion

- The patient suffered a tonic-clonic seizure secondary to acute hyponatraemia following administration of picolax.
- Severe hyponatraemia, hypokalaemia and associated seizures following bowel preparation are rarely described in the literature.
- Four of the five cases in the literature describe patients who have pre-existing medical conditions and are taking regular medication which could have contributed to hyponatraemia.
- The raised cortisol level rules out Addison's Disease, although serum and urine osmolality could suggest SIADH, due to the hypovolaemia the patient suffered as a result of diarrhoea and vomiting, this was not considered as a diagnosis.

Conclusion

- We urge care to be taken when prescribing bowel preparation; particularly in those with pre-existing medical conditions and taking medications which can cause hyponatraemia - and to counsel patients when prescribing bowel preparation on the side effects.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>On Admission</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium (mmol/L)</td>
<td>119</td>
<td>117</td>
<td>137</td>
<td>133</td>
<td>132</td>
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<tr>
<td>Potassium (mmol/L)</td>
<td>3.1</td>
<td>3.7</td>
<td>3.4</td>
<td>3.4</td>
<td>3.9</td>
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<tr>
<td>Urea (mmol/L)</td>
<td>3.1</td>
<td>2</td>
<td>1.5</td>
<td>1.7</td>
<td>2.8</td>
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<tr>
<td>Creatinine (mmol/L)</td>
<td>48</td>
<td>45</td>
<td>57</td>
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<td>46</td>
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<td>Serum Osmolality (mmol/kg/L)</td>
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<td>Urine Osmolality (mOsm/kg)</td>
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<tr>
<td>Random Cortisol (nmol/L)</td>
<td>1000</td>
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</table>

References

- Severe Hyponatraemia and seizure following a polyethylene glycol-based bowel preparation for colonoscopy Nagler J, Poppers D, Meredith T. Journal of Clinical Gastroenterology, 2006;6:558-559
- The rapid development of hyponatraemia and seizures in an elderly patient following sodium picosulfate/magnesium citrate (picolax) Dillon C, Laher M. Age and Ageing 2009;38:487