Author's response to reviews

Title: Chronic calcium pyrophosphate crystal inflammatory arthritis induced by extreme hypomagnesemia in short bowel syndrome

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Author’s response to reviews:

In general we would like to thank you for reviewing the submitted article and we appreciate you giving valuable and informative advice!

Answer’s to the comments from Claire Luise Donohoe:

- Minor essential revisions: we included the missing information and corrected the grammatical mistakes respectively.
- Discretionary revisions:
  - A systematic graphic illustrating the pathophysiology of hypomagnesemia in SBS is now available.
  - Further on we worked on the description of the patient’s symptoms.
  - It’s right that psychiatric medication is usually not used on demand. As we explain now in detail in the new version, the anti-depressive treatment of our patient could be reduced to the point that he no longer needed SSRIs or tricyclic antidepressants. The only remaining agent he used was a benzodiazepine for problems getting to sleep.

Answer’s to the comments from Jeremy Nightingale:

Minor points:

- We corrected 300-350cm to 200 cm
- Gonarthritis is arthritis of the knee. We changed this to make it more comprehensible.
- Underweight - what was BMI at this time? BMI at this time was 16.5 kg/m². We included this information.
• Adynamia is meant to describe a condition of weakness. As we use this expression in the same sentence, we withdrew “adynamia”, because it might be redundant.

• For details of the magnesium resorption test, see Answer’s to the comments from the editor

• P6: As given in the section Clinical presentation and patient history the patient had jejunoileal resection of 2/3 of the ileum with an estimated length of the whole bowel of 185 – 195 cm. The ileocecal valve was still present, but most part of the small bowel was resected. Thus, due to the presence of the ileocecal valve we could rule out bacterial overgrowth as one cause of malabsorption due to normal fasting H2 concentrations. In addition, performance of the H2 test with 25g glucose (reduction to half of the normal test dose in postoperative patients) did also not indicate bacterial overgrowth within the remaining small bowel. Thus, we concluded that the reduced small bowel length, accelerated transition time, associated food intolerances and fat malabsorption were mainly responsible for the clinical gastrointestinal symptoms of the patient.

Answer’s to the comments from the editor:

• The magnesium resorption test was performed with 750 mg magnesium oxide (18.4 mmol Mg, Magnetrans forte 150 mg, Stada GMBH, Bad Vilbel, Germany). At the time point 0 minutes the patient took 5 tablets with 250 ml water and at the time points 60, 120 and 240 minutes the serum magnesium level was determined. As outlined in this patient with SBS no substantial Mg resorption occurred at disease presentation and serum levels remained at two repeated test days low at 0.2 – 0.3 mmol/l. In contrast, other disease group patients (irritable bowel syndrome, Inflammatory Bowel Disease etc) showed always a clear resorption of magnesium with increase of the serum level > 30%.

• Pancreatic enzymes were prescribed to increase digestive capacity of the gastrointestinal tract in this patient, because underweight, multiple food intolerances with accelerated intestinal transit time and fat intolerance were present along with pasty stools. Accelerated transit time was suspected as one cause to reduce normal pancreatic digestion of foods, resulting in fat intolerance, abdominal discomfort etc.