

Combined non-Orthodox Therapy in the Management of Treatment-Resistant Infections due to *Helicobacter pylori*, *Giardia duodenalis* and *Microsporidium sp.* In a Patient with Chronic Diarrhea, Wasting Syndrome and Severe Antibiotic Allergy

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Received Date: June 28, 2020; Accepted Date: July 28, 2020; Published Date: July 30, 2020.

Citation: • Marcano-Lozada M, Molero-Leon S, (2020) Combined non-orthodox therapy in the management of treatment-resistant infections due to *Helicobacter pylori*, *Giardia duodenalis* and *Microsporidium sp.* in a patient with chronic diarrhea, wasting syndrome and severe antibiotic allergy. Journal of Clinical Case Reports and Studies, 1(3): Doi: [10.31579/2690-8808/011](https://doi.org/10.31579/2690-8808/011)

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We resume a clinical case submitted to the Medical Microbiology Unit due to the complexity of etiological diagnosis and previous health issues of the patient, and with the additional restriction in the use of anti-infective treatments for a severe allergic reaction record.

Reference Summary

The current illness of a 45-year-old female patient, born and raised in Caracas, Venezuela, known with a past of left hemicolectomy for abdominal trauma 4 years ago and subsequent intestinal malabsorption syndrome, who presents fetid diarrheal stools in number of 5-8 / day and burning pain sensation in epigastric region, and the last 6 months with significant weight loss (30 kg), was referral to our diagnostic facility care to being evaluated.

Relevant background

- Allergic to penicillin, macrolides & quinolones (angioneurotic edema).
- Restitution of intestinal transit 1 year prior to the beginning of diarrheic manifestation, without apparent complications.
- Upper digestive endoscopy one year later the onset of diarrhea shows chronic antral gastritis (without *H. pylori* microbiological confirmation, but histologically suspected) treated with duo-therapy based on Metronidazole + Ranitidine.
- HIV Negative serology and negative tumor biomarkers.

Physical exam

- Patient in general regular conditions, wasted, weighing 40 kg.
- Multiple abdominal scars.
- Pain to epigastric deep palpation.

Microbiological and Therapeutic Evolution

A microbiological study of feces is carried out, finding more than 100 spores of *Microsporidium sp.* (Kinyoun stain) -nor previously diagnose since the beginning of the diarrheic manifestations-, plus a positive *Giardia duodenalis* fresh mount stool exam. A Urea Breath Test with Charcoal 14 (UBT-C¹⁴) is performed and detect active gastric infection by *H. pylori*

Considering the allergic background, treatment with **Albendazole** 400 mg/PO/BID/4 weeks is started together with **Furazolidone** 100 mg/PO/QID + **Tetracycline** 300 mg/PO/QID scheme for 2 weeks associated with **Omeprazole** 20 mg/PO/BID for 2 months.

In the coprological control examination at the end of the Albendazole treatment time, eradication of *Giardia duodenalis* is verified, with persistence of *Microsporidium sp.*; and it is indicated to extend **Albendazole** course for an additional 4 weeks.

The microbiological reassessment a month later shows persistence of microsporidia, and the control of urea breath test for *H. pylori* remains positive indicating therapeutic failure in the eradication of both microorganisms.

We decide to presented a non-orthodox therapeutic option using **Nitazoxanide** 500 mg/PO/BID + **Tetracycline** 300 mg/PO/QID for 3 weeks + **Esomeprazole** 40 mg/PO/OD for 2 months, and the patient gives her writing consent for the new treatment schema.

In the post-treatment microbiological control, the eradication of *Microsporidium sp.* & *Helicobacter pylori* is verified by Kinyoun stain without evidence of spores of microsporidia and a control negative UBT-C¹⁴, with complete clinical improvement. In addition, the patient didn't show any adverse reaction to the novel therapeutic combination.

Conclusion

For cases as special as the one presented, a deeper coprological exam (including Coccidia & Microsporidia investigation) and non-invasive *H. pylori* diagnostic test (as UBT-C¹⁴) should be performed, moreover, where the antimicrobials allergies contraindicate the initial therapeutic lines. The knowledge of epidemiological susceptibility/resistance patterns is necessary, as it seems with the high resistance of *H. pylori* to metronidazole in Venezuela (> 70%), plus,

the limited effectiveness of treatment with Albendazole in microsporidia infection, leads to the use of alternative polyvalent antiparasitic drug that is usefully demonstrated, and the antibacterial effect of Nitazoxanide in the combination therapy for eradication of resistant *H. pylori* and its effective action in chronic diarrheic microsporidia disease, obligate to consider its use in the combination treatment of selected cases of multiple infective agents (when first line treatment were contraindicated or non-available).

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