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Mebendazole Is a Potential Alternative in the Treatment of *Giardia duodenalis* Infection

To the Editor:

Parasites are widely distributed throughout the world and represent an important cause of morbidity and mortality, mainly in tropical and subtropical regions.[1] Most of those parasites exist and persist for social and economic reasons that enable pathogens to take advantage of changes in behavioral and physical environments.

Giardia duodenalis (also known as *Giardia lamblia* and *Giardia intestinalis*) is the most common intestinal pathogenic protozoan infection reported in humans, and the disease it causes, giardiasis, is now included in the neglected diseases initiative. Approximately 280 million people are infected each year with this parasite, but this estimation could be low considering that infection rates are higher in endemic countries where diagnostic facilities and reporting systems are unavailable or not functional.

The lack of any useful parasite vaccine means that prevention of this and many other parasitic diseases continues to be based on ecologic measures aimed at interrupting the biological cycle of the parasite combined with the use of antiparasitic drugs.

Mebendazole (MBZ) has been used worldwide because of its relatively poor absorption from the intestine, low level of adverse events, and broad spectrum of action against soil-transmitted helminths, even in single doses. The low cost, effectiveness, lack of action on intestinal microbiota, and the safety of this drug further enhances its therapeutic appeal. MBZ has been evaluated for its potential use against protozoan and helminth infections other than the common soil-transmitted helminths, providing some evidence that encourages scientists to use it in certain situations, such as for cases of treatment failure or resistance.[2]

Some in vitro studies have demonstrated MBZ activity against *G duodenalis* infection. The authors of these studies showed that this drug affects the growth of the protozoa, inducing trophozoite detachment and distortion of both morphology and general structure.[7–10]

Based on these in vitro studies, our group carried out 4 clinical trials in Cuba—3 in children and 1 in adults—evaluating the efficacy and safety profile of MBZ in the treatment of *G duodenalis*. These studies offered clear evidence of the effectiveness and tolerability of MBZ to treat *G duodenalis*.[3–6]

Three days' treatment with MBZ was similar in efficacy to the first-line drugs used for the treatment of giardiasis, both in children and in adult patients.

After 8 years of extensive clinical use, we have found MBZ (200 mg 3 times daily for 3 days)[3] to be excellent in treating children aged 5 to 15 years mono infected with *G duodenalis*. From the beginning of 2008 to the end of 2015, of 522 children attending the Centre of Hygiene, Epidemiology, and Microbiology seeking treatment for this intestinal protozoa, 450 (86.2%) were healed. The efficacy of the chemotherapy was assessed by microscopic examination (as direct wet mounts and after formol–ether concentration) of fecal samples collected soon (ie, 3, 5, and 7 days) after treatment completion, to avoid the bias that would be introduced by reinfection. A child was only considered cured if no *Giardia* trophozoites or cysts could be found in any of the 3 posttreatment fecal specimens.

The drug was well tolerated. Only mild, transient, and self-limited side effects were reported and these did not require discontinuation of treatment. Abdominal pain (29 out of 522 patients; 5.6%), nausea (15 out of 522 patients; 2.9%), and vomiting (12 out of 522 patients; 2.3%) were the only side effects reported.

Additionally, from 2010 to the end of 2015, 423 adults mono infected by *G duodenalis* were also treated successfully using MBZ (200 mg 3 times daily for 3 days).[6] Similar to the children group, MBZ was an exceptional option. Of 423 patients treated, 392 (92.7%) were cured. In this group the only adverse effect reported was abdominal pain in 26 out of 423 patients (6.2%).

The effective management of *G duodenalis* infection has been considered problematic, especially in tropical and subtropical areas. Based on our clinical trials as well as anecdotal experience, MBZ could be an excellent alternative in the treatment of *G duodenalis* infections both in children and in adults.

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