Medical Treatment with Albendazole of A Patient with Hepatic Cystic Echinococcosis who Should have Undergone Elective Surgery in the Context of Pandemic of COVID-19

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ABSTRACT
Cystic echinococcosis (CE) is worldwide endemic parasitic zoonosis caused by tapeworm Echinococcus granulosus. In human, liver is most common organ affected up to 85%. Informal Working Group on Echinococcosis (IWGE) of World Health Organization (WHO) published a standard classification of the cysts based on ultrasound (1) and a consensus in 2010 suggesting treating with albendazol as first choice of treatment in uncomplicated CE1 and CE3a up to 5 cm (2). In the context of pandemic of COVID-19, patients who requires elective percutaneous or surgical treatment for symptomatic non-complicated hepatic CE must be delayed or suspended because this disease is not life threatening unless it's complicated and by the shortness of bed and the risk of intra-hospital COVID-19 infection. The aim of this case report is to describe the follow up of a patient with hepatic cystic echinococcosis who should have undergone elective precutaneous or surgical treatment, treated with albendazole in the context of a pandemic COVID-19.

Keywords: Cystic echinococcosis, liver, albendazole, pandemic COVID-19

INTRODUCTION
Surgical treatment of hepatic CE was the unique choice of treatment until 2000. Percutaneous and medical treatment with benzimidazoles is today a part of different alternatives, according to type, size, and localization. The IWGE-WHO proposed in 2003 an ultrasound based standardized classification system of the cysts (1). And in 2010 IWGE-WHO published a paper where the medical treatment of liver CE has been consent (2). Patients
with cyst CE1 and CE3a up to 5 cm can be treated with albendazole as first choice of treatment. CE1 and CE3a bigger than 5 cm, CE2 and CE3b should be treated by surgery or percutaneous treatment. The choice of surgical or percutaneous treatment will depend based on availability and experience of team members of each institution who will offer the best choice based on it.

In the context of pandemic by COVID-19 the health system has been in the limit of saturation or even has collapsed and surgical procedures have been restricted to situations as emergencies or oncologic cases. Patients with symptomatic but uncomplicated CE hepatic cysts are in the group of patients that can postpone the percutaneous or surgical treatment.

In this context the challenge is to do nothing and wait (Watch & Wait modality) until epidemiological situation become better or try a medical treatment in a patient that should have undergone elective percutaneous or surgical treatment?

CASE

CE is endemic in Rio Negro province, Argentina. The liver is most common affected organ and frequently is asymptomatic for a long time until the cyst grows up enough to onset symptoms or be complicated. Hepatic cysts bigger than 5 cm usually are not suitable for medical treatment and must be treated by surgery or percutaneous treatment according to IWGE-WHO consensus (2). Rio Negro province protocol has a wider indication related to type and size, suggesting the chance to use albendazole in asymptomatic patients with cysts up to 7-10 cm (3).

A 34-year-old man owner of a rural establishment reported mild right upper abdominal pain.

Abdominal ultrasound showed 2 cystic lesions with "double wall" (pathognomonic of CE cyst), one irregular lesion size 75 x 43 mm (figure1) with a vesicular image inside: a CE2 type cyst close to gallbladder (figure 2), and another one 27 mm diameter in segment 6 of liver: a CE1 type cyst (figure 3). All routine blood investigations and chest x-ray were within normal limits. According to IWGE-WHO consensus this case was not suitable for medical treatment and should undergone surgery or percutaneous treatment especially by the bigger cyst (75 mm of diameter)(2). The cysts had not sign of complication and in the context of pandemic of COVID-19 and patient gave his consent to try medical treatment with albendazole instead the surgery that was not available and evaluate response as an alternative way and eventually undergone to surgery later when sanitary situation become better. Albendazole in a dose of 15 mg/kg/day twice a day was administered and completed 4 months. In the follow up ultrasound showed a positive response to albendazole: the two cysts have detached de laminar layer, changing stage cysts CE1 to a CE3a and have some focal calcification areas of the cyst's wall and the patient relieved symptoms of mild right upper abdominal pain. A second cycle of albendazol it was prescribed, and the patient continuous the follow up.

Figure 1: Irregular cystic lesion of liver with pathognomonic "double wall" (CE cyst) of 75 x 43 mm, next to gallbladder (GB): cyst type 2 (CE2).

Figure 2: Inside of image described in image 1, a vesicular image inside. GB: Gallbladder. CE2: CE2 cyst. V: daughter cyst.
DISCUSSION

CE has a substantial global and local impact in terms of disability-adjusted life years (DALYs) and monetary losses (4, 5). A standardized classification of hepatic CE enable clinicians to examine recommended clinical procedures for the different cyst types (1, 2) and surgery is not anymore, the only therapeutic option.

According to Rio Negro province protocol of treatment of hepatic CE, albendazole indication is restricted to asymptomatic cases detected in ultrasound screenings carried out by the CE Control Program, but is wider according to type and/or size than IWGE-WHO suggestions for medical treatment with albendazole of CE: CE1 and CE3a (up to 10 cm instead 5 cm of IWGE-WHO) and selected cases (CE2 in children or deep localization in liver parenchyma smaller than 5-7 cm, this indication is not contemplate in IWGE-WHO consensus) (3).

CONCLUSION

The context of pandemic of COVID-19 presented new therapeutic challenges in patients that requires surgical treatments. One option is to delay the surgical procedure until epidemiological situation become better, something that was uncertain at the start of pandemic. Another option is to think an alternative to doing nothing (Watch & Wait modality) and just waiting that nothing happened or become worst. So based on our clinical and surgical experience in the treatment of CE, we offered to patient the use of albendazole, and he consented with a good initial outcome and may avoid a invasive procedure.

Learning points

- Ultrasound imaging can alone, confirming CE by pathognomonic features.
- WHO-IWGE classification include 6 stages (CE1-CE2-CE3a-CE3b-CE4-CE5) each one with pathognomonic features than can be visualized in the ultrasound scan.
- Use of such a classification will enable clinicians to examine recommended clinical procedures for the different cyst types.
- Surgery is not the only treatment for CE hepatic cysts.
- Albendazole is useful therapeutic option depending on type, size, and localization of CE hepatic cysts.
- The context of a COVID-19 pandemic limited access to invasive treatment (percutaneous/surgical) to patients with CE hepatic cyst. Instead of doing nothing and waiting, this patient has been treated with albendazole with relative success and is under follow up and potentially could avoid a surgery and may be cured.
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