

# About the article Morphology of echinococcal liver lesions during treatment with high-intensity focused ultrasound

Diego Sebastián Andrade<sup>1</sup>, Stalin Santiago Celi Simbaña<sup>2</sup>

<sup>1</sup> Department of General Medicine, Central University of Ecuador, Quito, Ecuador

<sup>2</sup> Department of General Medicine, Medical Specialties Center "Comité del Pueblo", Ecuadorian Institute of Social Security, Quito, Ecuador

Received: 2022-10-21.

Accepted: 2022-10-29



This work is licensed under a Creative Commons Attribution 4.0 International License

## Abstract

The authors, after reading the article entitled "Morphology of echinococcal liver lesions during treatment with high-intensity focused ultrasound", published in the Journal of Clinical Medicine of Kazakhstan, were motivated to address the editorial team and the general public to refer their considerations about.

**Key words:** echinococcosis, hepatic echinococcosis, high-intensity focused ultrasound ablation, environment and public health

J Clin Med Kaz 2022; 19(6):4-5

## Corresponding author:

Diego Sebastián Andrade.

E-mail: [diegoandrade19901@hotmail.com](mailto:diegoandrade19901@hotmail.com);

ORCID: 0000-0003-0669-1853

## Dear Editor

After reading with great interest the article entitled "Morphology of echinococcal liver lesions during treatment with high-intensity focused ultrasound" [1], the motivation arose to refer our considerations in this regard.

We highlight the relevance of the manuscript, since it shows detailed histopathological evidence of the destructive effect of HIFU Ablation (high-intensity focused ultrasound) on mature and germinative forms of echinococcus in the liver. These findings demonstrate a high effectiveness of HIFU ablation and position it as an effective, safe and minimally invasive method in the treatment of hepatic echinococcosis [1].

Hydatid disease (HD) is a zoonosis caused by the larval stages of cestodes belonging to the genus *Echinococcus* [2], with the liver being the main organ affected (around 75% of cases) [3].

The genus *Echinococcus* is very broad, however the two main species of medical importance are *Echinococcus granulosus* which causes cystic echinococcosis (CE) and *E. multilocularis* responsible for alveolar echinococcosis (AE). Both are serious diseases, especially AE, with a poor prognosis and a high fatality rate if they do not receive adequate treatment [4].

The HD can be asymptomatic for long periods of time, due to slow cyst growth. The usual clinical presentation includes fatigue and abdominal pain. In addition, due to cyst rupture, jaundice, hepatomegaly, or anaphylaxis may occur. Other complications described include rupture of the bile ducts and cholangitis, cystic biliary obstruction, portal hypertension, ascites, intracystic or subphrenic abscesses, and even bronchobiliary fistula [2].

The diagnosis of HD is made with a combination of ultrasound and immunodiagnostic techniques [5].

There are currently pharmacological, conservative and surgical modalities. Medical treatment has low cure rates and high recurrence rates. Conservative procedures with ultrasound controls in which the parasite is sterilized with a scolical agent and the cyst is evacuated are associated with high rates of morbidity and recurrence. Radical procedures include liver resections and pericystectomy, with high intraoperative risk and low recurrence rates. The most common postoperative complications are those related to the bile ducts [6].

From the foregoing, it can be deduced that an effective treatment is necessary, one that improves the quality of life of patients with HD with the minimum possible number of complications and unfavorable sequelae.

As in other regions of the planet, EC is a major public health problem in South America, where there is a high underestimation of the disease, which, like other neglected conditions, suffers from serious underreporting (close to 2,000 cases new estimates per year), however some sources estimate that its true incidence could be 2 to 100 times higher than that reported [7]. In Ecuador, cystic echinococcosis is a growing problem related to intensive agriculture and its associated effluents, however it is important to highlight that the data is limited and the prevalence at the national level is unknown [8].

The heterogeneity of the problem, as well as the structural and social determinants of Ecuador and other South American countries, directly influence the treatment of hydatid disease (HD) where traditional treatment modalities are not exempt from complications and high costs [9], as well as control measures have provided modest results [10].

In this sense, we highlight the development and advent of minimally invasive techniques such as HIFU Ablation, which represents a significant advance in the treatment of this disease. We are aware that the extension and replication of techniques such as HIFU Ablation to other regions of the globe, such as the

South American continent, would represent a breakthrough with great impact on the quality of life of affected patients and on the understanding of this zoonosis.

On the other hand, this poses certain challenges in terms of public health that should be a call to government action in countries with a prevalence of Echinococcosis. These challenges include the acquisition of the necessary equipment to carry out such procedures, as well as the corresponding training of the professionals in charge, especially in countries with limited access to health resources.

Finally, we highlight the preventive public health actions necessary for the prevention of echinococcosis

**Disclosures:** There is no conflict of interest for all authors.

**Acknowledgements:** None.

**Funding:** None.

## References

1. Fedotovskikh G, Shaymardanova G, Zhampeissov N. Morphology of echinococcal liver lesions during treatment with high-intensity focused ultrasound. *J Clin Med Kaz.* 2022;19(4):28-31. <https://doi.org/10.23950/jcmk/12285>
2. Nunnari, G., Pinzone, M. R., Gruttadauria, S., Celesia, B. M., Madeddu, G., Malaguarnera, G., Pavone, P., Cappellani, A., & Cacopardo, B. Hepatic echinococcosis: clinical and therapeutic aspects. *World journal of gastroenterology.* 2012; 18(13):1448–1458. <https://doi.org/10.3748/wjg.v18.i13.1448>
3. Pinar Polat , Mecit Kantarci , Fatih Alper , Selami Suma , Melike Bedel Koruyucu , y Adnan Okur. Hydatid disease from head to toe. *RadioGraphics.* 2003; 23(2):475-494. <https://doi.org/10.1148/rg.232025704>
4. Zhang, W., Li, J., & McManus, D. P. Concepts in immunology and diagnosis of hydatid disease. *Clinical microbiology reviews.* 2003; 16(1):18–36. <https://doi.org/10.1128/CMR.16.1.18-36.2003>
5. Liu, W., Delabrousse, É., Blagosklonov, O., Wang, J., Zeng, H., Jiang, Y., Wang, J., Qin, Y., Vuitton, D. A., & Wen, H. Innovation in hepatic alveolar echinococcosis imaging: best use of old tools, and necessary evaluation of new ones. *Parasite (Paris, France).* 2014; 21(74). <https://doi.org/10.1051/parasite/2014072>
6. Sozuer, E., Akyuz, M., & Akbulut, S. Open surgery for hepatic hydatid disease. *International surgery.* 2014; 99(6):764–769. <https://doi.org/10.9738/INTSURG-D-14-00069.1>
7. Pavletic, C. F., Larrieu, E., Guarnera, E. A., Casas, N., Irabedra, P., Ferreira, C., Sayes, J., Gavidia, C. M., Caldas, E., Lise, M. L. Z., Maxwell, M., Arezo, M., Navarro, A. M., Vigilato, M. A. N., Cosivi, O., Espinal, M., & Del Rio Vilas, V. J. Cystic echinococcosis in South America: a call for action. *Revista Panamericana de Salud Publica/Pan American Journal of Public Health.* 2017; 41[e42]. <https://doi.org/10.26633/RPSP.2017.42>
8. Cartelle Gestal, M., Holban, A. M., Escalante, S., & Cevallos, M. Epidemiology of Tropical Neglected Diseases in Ecuador in the Last 20 Years. *PloS one.* 2015; 10(9): e0138311. <https://doi.org/10.1371/journal.pone.0138311>
9. Venegas, Juan, Espinoza, Sandra, & Sánchez, Gittith. Estimation of costs caused by cystic echinococcosis. *Revista médica de Chile.* 2014; 142(8):1023-1033. <https://dx.doi.org/10.4067/S0034-98872014000800010>
10. Larrieu, Edmundo, Zanini, Fabian. Critical analysis of cystic echinococcosis control programs and praziquantel use in South America, 1974-2010. *Rev Panam Salud Publica.* 2012; 31(1)81-87. <https://doi.org/10.1590/S1020-49892012000100012>