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Letter to the Editor

Considerations on disease definition and figure representation in MRI-based deep learning for chronic liver disease

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Dear Editor,

I read with great interest the article by Zoroğlu Altınkaya *et al.* [1], which proposes a segmentation-free deep-learning approach for detecting chronic liver disease (CLD) on magnetic resonance imaging (MRI). While the study addresses an important and timely topic, I would like to offer two points that may benefit from additional clarification.

First, the definition and heterogeneity of "chronic liver disease" require clearer specification. CLD represents a broad pathological spectrum, ranging from mild steatosis and early fibrosis to advanced cirrhosis [2]. In the present study, CLD appears to be treated as a single binary category; however, the manuscript does not adequately detail the underlying aetiologies, fibrosis stages, or diagnostic reference standards used to establish the CLD diagnosis (e.g. histopathology or clinical–laboratory consensus). I think this distinction is critical because advanced cirrhosis is typically radiologically conspicuous on MRI, whereas early-stage CLD may demonstrate subtle or even absent morphologic changes [3]. Without stratification by disease severity, it remains unclear whether the proposed model is primarily detecting advanced morphologic alterations or is truly sensitive to early-stage CLD.

Second, the representative CLD examples shown in Figures 1, 3, and 5 warrant further reconsideration. In particular, the lower-row CLD images in Figure 1 do not demonstrate typical MRI features commonly associated with CLD, such as nodular/irregular hepatic contour, volume redistribution, parenchymal coarsening, or signs of portal hypertension. Similar observations can be made regarding the CLD examples presented in Figures 3 and 5. These images appear closer to near-normal liver morphology or, at most, mild diffuse disease. If these cases indeed represent early-stage CLD diagnosed by non-imaging criteria, this important point should be explicitly stated. Otherwise, these figures may inadvertently mislead readers regarding the radiologic phenotype of CLD used for model training.

Clarifying the diagnostic criteria for CLD and the rationale behind the selected representative images would strengthen the manuscript, improve interpretability of the deep learning results, and help readers better assess this promising study.

Disclosures

1. Institutional review board statement: Not applicable.
2. Assistance with the article: None.
3. Financial support and sponsorship: None.
4. Conflicts of interest: None.

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Authors' contribution:
A Study design · **B** Data collection · **C** Statistical analysis · **D** Data interpretation · **E** Manuscript preparation · **F** Literature search · **G** Funds collection

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