The barriers for uptake of artificial intelligence in hepatology and how to overcome them

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Abstract

Artificial intelligence (AI) methods in hepatology have proliferated since the mid-2010s, with numerous publications and some regulatory approvals. Yet, adoption of AI methods in real-world clinical practice and clinical research remains limited. Despite clear benefits of using AI to analyse complex data types in hepatology, such as histopathology, radiology images, multi-omics and more recently, natural language patient data, there are still substantial barriers and challenges to its integration into routine clinical workflows. In this position paper, we assess limitations and propose a set of clear recommendations aimed at both the development of AI systems and the broader hepatology environment to facilitate the transition of AI-based diagnostic, prognostic, and predictive tools into clinical care. In particular, we argue that the use of AI in clinical trials, seamless integration into hospital information systems and building AI literacy among clinicians will ultimately drive clinical adoption. We validate this perspective through a Delphi consensus involving 34 international experts from hepatology, AI, and data science, ensuring a comprehensive and consensus-driven evaluation of our recommendations.