LETTER

Artificial Intelligence and Pain Medicine: an Introduction [Letter]

Marco Cascella [ID][1], Federica Monaco[2], Ornella Piazza[1]

[1]Anesthesia and Pain Medicine, Department of Medicine, Surgery and Dentistry "Scuola Medica Salernitana", University of Salerno, Baronissi, 84081, Italy; [2]Anesthesia and Pain Management, ASL NA/1, Naples, Italy

Correspondence: Marco Cascella, Anesthesia and Pain Medicine, Department of Medicine, Surgery and Dentistry "Scuola Medica Salernitana", University of Salerno, Via S. Allende, Baronissi, 84081, Italy, Email m.cascella@istitutotumori.na.it; mcascella@unisa.it

Dear editor

We have appreciated the article from Hagedorn et al[1] titled "Artificial Intelligence and Pain Medicine: An Introduction." Their narrative review offers a commendable overview of artificial intelligence (AI) potential applications for pain management. Considering AI's rapid evolution across healthcare, the authors' effort to introduce AI to the field of pain medicine is both timely and necessary. However, several key areas warrant further elaboration and clarification. First, while the authors provide a general overview of AI's impact on pain medicine, they only marginally address the specific methodologies employed in AI for pain assessment and management. Pain medicine is a complex field that requires nuanced approaches to diagnosis and treatment. A deeper exploration of the algorithms, models, and AI strategies used in pain medicine and how they operate would enhance readers' understanding of how AI can be effectively applied in the specialty. Although these technical notes may appear unnecessary, it is crucial for clinicians to have at least a basic understanding to avoid common misconceptions that can hinder the effective use of AI in practice. For instance, regarding the so-called black boxes, clinicians should know that mathematical models can reveal the internal workings of neural networks, a concept known as explainable AI.[2]

Additionally, the authors overlook the integration of pain medicine specialists' expertise with that of computer scientists and engineers. Implementing AI in pain medicine requires a collaborative approach, where pain specialists' domain knowledge guides the technical development of AI tools. This interdisciplinary collaboration is essential for bridging the AI chasm. A deeper examination of how these teams can work together would offer valuable insights to those considering AI adoption in their practices.[3]

While the article acknowledges AI's potential benefits in pain medicine, it lacks discussion on its current limitations and challenges. For instance, the accuracy and reliability of AI algorithms depend on the quality and diversity of the data they are trained on. Furthermore, the article notably omits automatic pain assessment, an area where AI could revolutionize pain evaluation by providing objective and consistent pain level measurements. Such technology could significantly improve pain diagnosis and treatment, ultimately benefiting patient outcomes.[4]

Another crucial aspect needing attention is the ethical implications of AI in pain medicine. The article could have better addressed ethical considerations such as patient privacy, consent, and potential bias in AI algorithms. Ensuring AI aligns with ethical standards is essential for promoting patient safety and well-being.[5]

In conclusion, Hagedorn et al's[1] article provides a useful introduction to AI's potential applications in pain medicine. However, a more comprehensive understanding is needed for clinicians. Given regulatory policies and technological advancements, engaging key professional figures and developing structured training pathways is essential. These measures are vital for achieving an evolutionary leap that will enable a stronger integration of AI in the field of pain medicine. Despite the limitations, since even experts find it challenging to keep up with the rapid advancements in AI technology, we thank the authors for provoking thought and understand that covering all these topics in a single article would be unfeasible.

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Disclosure

The authors report no conflicts of interest in this communication.

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