

Peer Review File

Article information: <https://dx.doi.org/10.21037/atm-21-7031>

Reviewer A

This article is a very interesting narrative review to analyze whether or not AI and its subsets are implemented in current clinical anesthetic practice, and to describe the current state of the research in the field.

This narrative review is a very insightful article analyzed by major periods or topics of anesthesia and analgesia based on the literature reported on the application of AI in the anesthesia field.

I just recommend some minor points.

Abstract

Comment 1: Please add some detailed contents about PubMed search results at the beginning of the Conclusion section. Additionally, provide (revise) some sentences with a brief summary of whether or not AI and its subsets are implemented in current clinical anesthetic practice, and to describe the current state of the research in the field (the aim of the review)

Reply 1: thank you for your suggestion. We have expanded the literature search and added more details. We have also included a sentence about the current limits of use of these models in the daily practice.

Changes in the text: see Page 3-4, line 57-59 and line 67-69

Methods

Comment 2: P 6, lines 114-5: Considering the date this review was submitted, the search date should not include January, 2022, so please correct it properly.

Reply 2: thank you for your comment. We modified the search date accordingly.

Changes in the text: see Page 7, line 144

Reviewer B

I have some critical questions I like to see answered before this paper can be accepted.

Comment 1: At no point do you mention which AI-related applications are developed so far that they are universally accepted as standard.

Reply 1: thank you for your comment. We have included in the manuscript examples of current medical tools already authorized and in use that exploit AI technologies.

Changes in the text: see Page 22, line 493-500

Comment 2: The huge problem related to a lack of ontology in the field of anesthesiology in particular and medicine, in general, is not mentioned.

<https://pub.towardsai.net/ontology-preludes-data-science-a-covid-19-use-case-cadfcc0b81cf>)

Reply 2: thank you for your suggestion. We found this suggested concept very interesting and inserted it with the indicated reference.

Changes in the text: see Page 21, line 466-470

Comment 3: Are the researched AI solutions solving perceived problems or frustrations in a real anesthesia practice? (<https://medium.com/@docmusher/data-scientists-are-there-to-solve-problems-bridging-the-gap-with-domain-experts-1211440a4b64>)

Reply 3: thank you. We have added the theme of the data scientist and of how she/he is crucial to overcome limits and problems.

Changes in the text: see Page 21, line 467-472

Comment 4: Suggestions on how to develop new AI applications, the required steps necessary to have both the domain experts and the data scientists fully understand the problem to be solved.

Reply 4: thank you for pointing it out. We have included the necessary steps. We also added the concept that, in this context, the data scientist is fundamental for each of these phases.

Changes in the text: see Page 21, line 472-477

Reviewer C

In this study, the authors proposed a narrative review on the applications of AI in Anesthesia. The idea maybe suitable for journal, however, some major points should be addressed as follows:

Comment 1. The review only covers publications on PubMed database. Although I know it is in medicine field, however, there are a lot of publications related to AI on Anesthesia from other databases that the authors might miss. For instance, many people in AI field would like to publish in IEEE or prestigious conferences. The authors may also include **Scopus**, **Cochrane**, or WoS in their search databases.

Reply 1: thank you. We have expanded the search databases.

Changes in the text: see Page 7, line 138-140

Comment 2. The authors should have the first table to have a statistic on the queried data.

Reply 2: thank you for your suggestion. Hoping to have interpreted the request correctly, we inserted a column with the main results in the table.

Changes in the text: see Table 1.

Comment 3. Challenges are not quite clear. The authors should propose more challenges related to this interesting topic.

Reply 3: thank you for your comment. We have included the problem of external

validation and the correct training for healthcare professionals.

Changes in the text: see Page 21-22, line 478-484

Comment 4. There must have some references related to AI-based medicine to attract a broader readership i.e., PMID: 33735760, PMID: 34989149, PMID: 34502160.

Reply 4: thank you for your suggestion. We have added a reference related to AI-based medicine.

Changes in the text: see Page 6, line 124-127.

Comment 5. English language should be improved. There still have some grammatical errors or typos such as "Numebr of tables:".

Reply 5: Dear Reviewer, thank you for pointing it out. The manuscript has been revised by a native English speaker.

Comment 6. Abbreviation should be defined at the first appearance i.e. AI in abstract.

Reply 6: thank you. The manuscript has been revised accordingly.