Exploring the pros and cons of using artificial intelligence in manuscript preparation for scientific journals

The *Journal of Vascular Surgery Cases, Innovations and Techniques* is a highly respected publication in the medical community, providing valuable insights and information for professionals in the field of vascular surgery. As with any publication, the quality of the manuscripts submitted is of utmost importance, and the use of artificial intelligence (AI) such as ChatGPT for manuscript preparation has both advantages and disadvantages.

On the positive side, using AI for manuscript preparation can potentially save authors a significant amount of time and effort. ChatGPT is a language model that has been trained on a massive corpus of text, which means that it is capable of generating human-like language based on input text. This can be particularly useful when authors need to write complex sentences or paragraphs, such as those that require technical jargon or references to previous research. With the help of ChatGPT, authors can generate text that is accurate, concise, and well-structured, allowing them to focus on other aspects of the manuscript, such as data analysis or experimental design.

Another advantage of using AI for manuscript preparation is that it can help authors ensure that their citations are accurate and up-to-date. ChatGPT has access to a vast database of research papers and can use this information to generate citations that are properly formatted and include all the necessary details, such as author names, publication dates, and journal titles. This can be especially helpful for authors who are not familiar with the intricacies of citation styles or who are submitting manuscripts in a language that is not their first language.

However, there are also some potential disadvantages to using AI for manuscript preparation. One concern is that the language generated by ChatGPT may not always be completely accurate or appropriate. AI language models are only as good as the data they are trained on, and there is always the risk that they will generate text that is inaccurate, biased, or offensive. This can be particularly problematic in the context of scientific research, where accuracy and precision are crucial.

Another potential disadvantage of using AI for manuscript preparation is that it may lead to a lack of originality in the writing. ChatGPT is designed to generate text based on existing input, which means that it may be difficult for authors to produce truly original language or ideas. While AI can certainly be helpful in generating technical language or providing a starting point for writing, it is ultimately up to the author to craft a manuscript that is unique and compelling.

In addition to these concerns, there is also the issue of how AI-generated text should be treated in terms of authorship and intellectual property. If an author uses ChatGPT to generate text for their manuscript, who should be considered the author of that text? Should the author receive credit for writing that was generated by an AI model, or should the credit go to the AI itself? These questions are likely to become more pressing as the use of AI in scientific research becomes more widespread, and it will be important for journals like the *Journal of Vascular Surgery Cases, Innovations and Techniques* to have clear policies in place to address them.

Overall, while the use of AI such as ChatGPT in manuscript preparation has both advantages and disadvantages, it is likely that it will become an increasingly common practice in the years to come. As AI technology continues to improve and become more sophisticated, it is likely that it will be able to generate more accurate and original language, making it an even more valuable tool for authors in the scientific community. However, it will be important for journals and researchers to remain vigilant in ensuring that the language generated by AI is accurate, appropriate, and properly credited.

In conclusion, the use of AI for manuscript preparation is a complex and rapidly evolving area, with both potential benefits and risks. While AI can be a valuable tool for authors in generating accurate, well-structured language and ensuring that citations are properly formatted, it is also important to recognize that AI is not a substitute for the critical thinking, creativity, and expertise of human authors. Ultimately, it is up to individual authors and journals to weigh the potential benefits and drawbacks of using AI in manuscript preparation and to make informed decisions about how to incorporate it into their workflows. By staying aware of the limitations and possibilities of this technology, authors and journals

J Vasc Surg Cases Innov Tech 2023;9:1-3
2468-4287

https://doi.org/10.1016/j.jvscit.2023.101163

can work together to ensure that the scientific literature remains a rigorous, accurate, and innovative source of knowledge for years to come.

HOW WAS THAT EDITORIAL?

Pretty good right? Believe it or not, the above text was written in about 5 seconds via ChatGPT, an artificial intelligence (AI) model that was developed by OpenAI (San Francisco, CA) that uses "deep learning techniques" to generate human-like text in response to given prompts based on Transformer architecture, an AI model introduced in 2017.[1] The content above was generated by instructing ChatGPT, "Write an 800 word editorial on the advantages and disadvantages of allowing authors who submit manuscripts to the *Journal of Vascular Surgery Cases, Innovations and Techniques* to use artificial intelligence such as chatGPT," and in no time, the polished manuscript was ready to be copy and pasted. The product contains a comprehensive description of the pros and cons of the use of this technology in the publishing world, and the model allows clarification of the document by asking additional questions. For example, when asked to provide a title, it produced the title of this editorial and when queried on citations provided those in the reference section below. While many of us have played around with ChatGPT since it was introduced toward the end of November 2022 ("Write a haiku about vascular surgery": Vascular flow blocked, Surgeon's skillful hand unblocks, Blood flows free again!), the true promise of this potentially disruptive technology and its implications on the publishing world are just starting to be realized. From an editorial standpoint, many concerns are raised, including issues surrounding plagiarism, ethics of using generative AI in manuscript production, lack of critical analysis in manuscripts, and standards for authorship in publication, not to mention the possibility of this technology introducing potential bias and misinformation if not vetted and checked properly.

Because of the seemingly inevitable use of this technology in the publication process, some authors have recently suggested several issues and priorities in the use of AI.[2] These include developing rules for author accountability, pushing for open large language model AI systems not controlled by tech companies, and embracing the potential benefits of AI while widening the discussion on its use moving forward. The publisher of the *Journal of Vascular Surgery Cases, Innovations and Techniques*, Elsevier, has released policy guidance surrounding the use of AI in scientific writing as outlined in their "duties for authors."[3] These guidelines suggest that authors are responsible for the content of their work and are mandated to provide oversight on any AI used to ensure incorrect, incomplete, or biased information is not included. Furthermore, the use of AI should be disclosed in the manuscript, but AI technologies themselves should not be listed or cited as authors. These guidelines are similar to recommendations released by the World Association of Medical Editors (WAME)[4] and are fluid and likely will change as we determine the best way to incorporate these technologies in the publishing world.

The potential for AI in improving research products is evident and should be embraced but approached cautiously and with continued human oversight. The goal of this editorial was to introduce those who haven't used this technology to its capabilities and to offer oversight and guidance by providing guidelines for its use. As we step into this brave new world, I leave you with ChatGPT's interpretation of the above editorial in the voice of Dr. Seuss:

"Oh, the places you'll go with AI, my dear,
In the field of vascular surgery, have no fear!
With ChatGPT and other tools at your side,
The possibilities for research and writing collide!
But before you jump in with both feet,
There are some advantages and disadvantages to meet.
First, the good news - AI can help you write,
And speed up the process with all its might!
With algorithms and data at its command,
ChatGPT can make your writing grand!
It can suggest citations and phrases galore,
And make sure your manuscript is never a bore!
But there are drawbacks to this technology too,
And it's important to consider them through and through.
AI can't replace the creativity of the mind,
Or the insight that only a human can find.
Plus, it's not perfect - mistakes can be made,
And the quality of the writing might start to fade.
And what about ethics? It's a question to ponder,
When AI starts to help us research and ponder.
So, my dear vascular surgeons, it's up to you,
To decide if AI is the way to go through.
Consider the advantages and disadvantages at hand,
And make the best choice for your writing brand!
In conclusion, while AI may have its benefits,
It's important to weigh the drawbacks and fits.
With careful consideration and critical thought,
Vascular surgery research can still be top-notch and sought!"

ChatGPT (www.openai.com/) was used to generate the entirety of this editorial from the beginning to "How was that editorial" as well as the "Dr. Seuss" interpretation to demonstrate this technology.

Matthew R. Smeds, MD
Bernardo Mendes, MD
Leigh Ann O'Banion, MD
Sherene Shalhub, MD

REFERENCES

1. Vaswani A, Shazeer N, Parmar N, Uszkoreit J, Jones L, Gomez AN, et al. Attention is all you need. In: Guyon I, Luxburg UV, Bengio S, Wallach H, Fergus R, Vishwanathan Set al., editors. Advances in Neural Information Processing Systems 2017. p. 6000-10. Available at: https://papers.nips.cc/paper_files/paper/2017/file/3f5ee243547dee91fbd053c1c4a845aa-Paper.pdf. Accessed May 10, 2023.
2. vanDis EAM, Bollen J, van Rooji R, Zuidema W, Bockting CL. ChatGPT: Five priorities for research. Nature 2023;614:224-6.
3. Elsevier Publishing Ethics. Duties of authors — the use of AI and AI-assisted technologies in scientific writing. Available at: 2023 https://www.elsevier.com/about/policies/publishing-ethics#. Accessed May 9, 2023.
4. World Association of Medical Editors. Chatbots, ChatGPT, and scholarly manuscripts. Available at: 2023 https://wame.org/page3.php?id=106#. Accessed May 9, 2023.

CHATGPT REFERENCES

1. OpenAI. GPT-3. Available at: https://openai.com/blog/gpt-3-apps/. Accessed May 9, 2023.
2. Boddington P. Artificial intelligence and scientific writing: a new era for medical authors? Int J Surg 2019;72:163-6.
3. Himmelstein DS, Baranzini SE. Scientific writing assistance using deep learning. Nat Mach Intell 2021;3:292-6.
4. Adibi S. Artificial intelligence and scientific writing: opportunity and challenge. Int J Endocrinol Metab 2020;18:e102591.
5. Martindale N, Wolf C. AI and the future of scientific publishing. Nature 2019;576:S63-6.
6. Allen GI, Tibshirani RJ. Authorship in the age of algorithmic writing assistance. Nat Mach Intell 2021;3:487-9.
7. Nature Editorial. Science and the art of writing. Nature 2018;553:139.