



Editorial

ChatGPT and Ophthalmology

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Editorial

ChatGPT (Open AI, San Francisco, California, USA) is a very hot topic recently in the research and academic field. Its powerful ability astonished many researchers, professors and educators. Up to 26th March 2023, there are already >160 published papers related to ChatGPT on PubMed search. Some studies proved its ability to pass medical examinations [1,2]. However, its partial substitution to human authors gets many journals to react, including the Nature, Science, Lancet, BMJ, etc. [3-6].

What is ChatGPT?

ChatGPT is a type of Artificial Intelligence (AI) language model that was developed by OpenAI. GPT stands for Generative Pre-trained Transformer, which means that the model has been pre-trained on a large corpus of text data and can generate text in response to a given prompt. This AI tool is powered by advanced Natural Language Processing (NLP) algorithms. The original GPT model was trained on a dataset of web pages, books, and other digital content to generate human-like text in response to a given prompt. The model was pre-trained using a technique called unsupervised learning, which means that it was trained on a large dataset without any human supervision. The ChatGPT model was specifically designed for conversational AI, and has been fine-tuned on a dataset of dialogues to generate more human-like responses. This means that the model can be used to generate text that simulates a conversation between two people [1].

One of the unique features of the ChatGPT model is its ability to generate text that is contextually sensitive. This means that the model can understand the context of a conversation and generate responses that are appropriate to that context. The ChatGPT model has a wide range of potential applications, including chatbots, virtual assistants. It can also be used in analyze text data and generate insights [2,3].

The Controversy of ChatGPT

ChatGPT, like any other technology, has both potential benefits and potential drawbacks. Some of the potential drawbacks of ChatGPT or other AI language models include bias, misinformation, privacy concerns, and over-reliance. ChatGPT can be biased if it is trained on data that is biased. A common phrase that we used to describe data analysis: garbage in, garbage out [4-7]. For example, if it is trained on text data that contains a lot of stereotypes and prejudices, it may generate biased responses. ChatGPT can generate text that is factually incorrect or misleading. An example to be demonstrated is on uses of intraocular gases in Ophthalmology (Fig. 1).

ChatGPT may raise privacy concerns in some contexts where it is used, especially if it is used to generate responses to personal questions or sensitive information. In addition, AI language models should not replace human interaction and decision-making altogether, as this could lead to a lack of empathy and understanding.

Ophthalmology Application

Up to 26th March 2023, there is only one PubMed indexed publication concerning the use of ChatGPT in Ophthalmology [8]. It evaluated the ChatGPT's accuracy in patient information for common retinal diseases. On top of this study, other potential uses of ChatGPT include providing educational resources to patients, such as on how to apply eye drops; general public education on early recognition of different ophthalmic pathologies and red flag signs; or how to manage post-operative care/ ophthalmic journey of chronic eye diseases; and keeping ocular and lid hygiene.

Further advances to serve as robotic reminders for scheduled appointments, medication refills, and follow-up visits are also possible. With training, ChatGPT could be used to analyze and extract information from large volumes of unstructured text data. For instance, extracting information from electronic medical records and identify trends, patterns, and insights. Of course, these future directions are left to the hands of computer engineers, instead of clinical ophthalmologists like me.

The Future of Medical Writing

Medical writing requires a high level of expertise and specialized knowledge, as well as the ability to communicate complex medical concepts in a clear and concise manner. While ChatGPT can generate text that is contextually sensitive and can understand the context of a conversation, it is limited to the data it has been trained on, and does not have the same level of understanding and expertise as a human medical writer. In addition, medical writing requires a deep understanding of medical terminology and scientific principles, which can only be acquired through extensive education and training. While ChatGPT can be trained on medical text data, it does not have the same level of understanding and expertise as a human medical writer. However, ChatGPT can still be a valuable tool for brainstorming. For example, it can be used to generate new ideas and hypothesis that normal human cannot think out of the box. It can also be used to help identify potential language errors, especially for non-native English speakers like me.

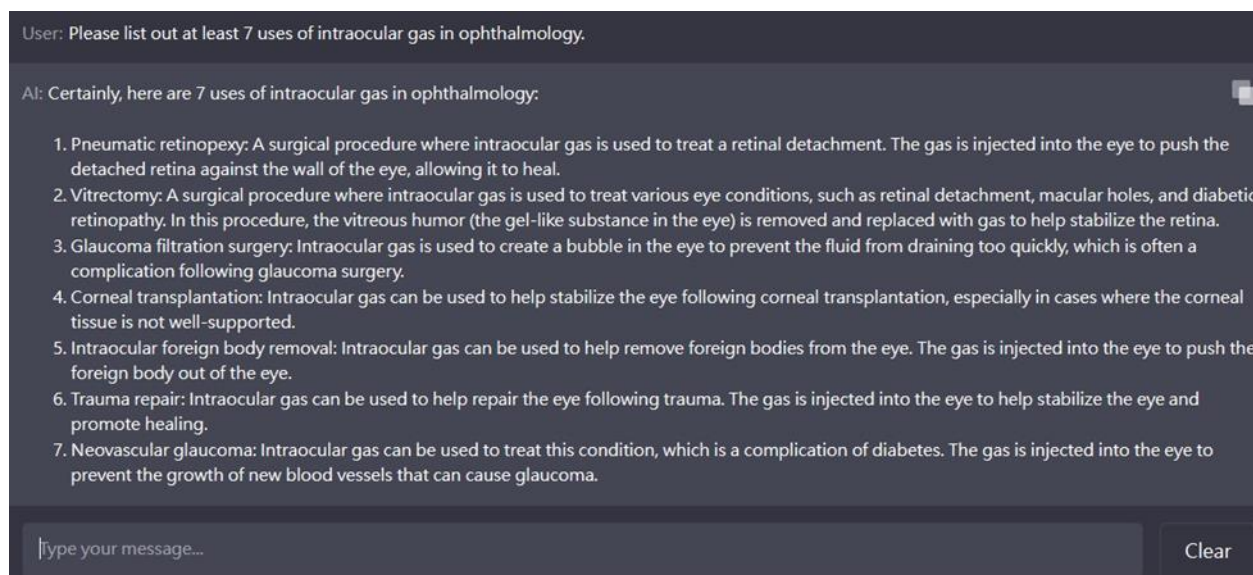


Figure 1: An example of ChatGPT's answering to a resident examination question in ophthalmology. Some points are actually true, whereas some mimics are actually wrong. Caution should be taken on the interpretation and use of ChatGPT for ophthalmology clinical practice.

Keywords: Ophthalmology; Artificial Intelligence

Conflict of Interest

The author has no conflict of interest to declare.

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