



# Journal of Acute Disease

## Letter to Editor



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## Stroke care in the ChatGPT era: Potential use in early symptom recognition

Wai Yan Lam<sup>1</sup>, Sunny Chi Lik Au<sup>2</sup>✉<sup>1</sup>Department Ophthalmology, Grantham Hospital, Hong Kong, China<sup>2</sup>Department Ophthalmology, Tung Wah Eastern Hospital, Hong Kong, China

Dear editor,

Generative Pre-trained Transformer-based Chatbot (ChatGPT)[1] or similar natural language processing[2] and large language models[3] are artificial intelligence systems designed to understand and respond to human languages, allowing them to provide information, answer questions, and provide guidance on a wide range of topics. One of their key benefits is immediate access to information in a conversational format, as if a hotline call, which is essential in acute medical conditions. Currently, medical utilization of ChatGPT is a hot research topic. Because its intrinsic difference from search engines, ChatGPT has the potential to revolutionize our mode of information access.

In the field of stroke diseases, ChatGPT can help patients recognize the symptoms early, provide guidance on immediate responses, and brief users on what to expect during their medical evaluation and treatment processes. Table 1 (Supplementary Figure 1) showed the chat records from one of our ischemic stroke patients upon his symptoms' onset. Stroke patients and their relatives are often

in a state of panic and stress when facing the uncertainties ahead. Chatbots, in some sense, are providing telemedicine[4], which is particularly important in remote or underserved areas. However, if stroke patients are experiencing symptoms of dysarthria, dysphasia, aphasia, or alexia[5], using Chatbots may be challenging. Seeking help from caregivers, or virtual assistants may be needed.

In short, the role of Chatbots in medical emergency pre-hospital care is evolving. By providing instant responses to patients and their families, these systems may help improving patients' outcomes by enabling early detection of symptoms and facilitating timely referral for appropriate medical advice.

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### Authors' contributions

WYL acquired the data and drafted the manuscript. SCLA contributed to the concept development and the design of this study, and revised the manuscript. Both authors analyzed and interpreted the data.

✉To whom correspondence may be addressed. E-mail: kilihua@gmail.com

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**Table 1.** Patient's chat record with ChatGPT upon his onset of symptoms. The acronym of "FAST" in stroke management was also mentioned by ChatGPT.

User	I found that my left arm and legs are numb since this morning upon woke up, am I having a serious problem and shall I go to visit the Doctor?
AI	<p>Yes, it is important that you seek medical attention right away if you are experiencing sudden numbness or weakness in your arm and leg, especially if it is only on one side of your body. These symptoms could be a sign of a stroke, which is a medical emergency that requires immediate treatment.</p> <p>Remember the acronym FAST: Face drooping, Arm weakness, Speech difficulty, Time to call emergency services. If you experience any of these symptoms, call for emergency medical assistance right away.</p> <p>It's always better to be safe than sorry, so I would recommend that you seek medical attention as soon as possible. A doctor can evaluate your symptoms and determine the cause, and they can provide the appropriate treatment if necessary.</p>
User	You mentioned about the arm weakness, I feel that too! The power of my left arm and leg seems to be weaker than usual, should I go for the emergency department right away?
AI	<p>Yes, if you are experiencing weakness in your left arm and leg, along with the numbness you mentioned earlier, it's important that you seek medical attention right away. Weakness in one side of the body is considered a classic symptom of stroke, and it's important to act quickly to get treatment.</p> <p>Call for emergency medical assistance immediately, and remember the acronym FAST: Face drooping, Arm weakness, Speech difficulty, Time to call emergency services. Tell the emergency operator that you are experiencing weakness in your arm and leg, along with numbness, and they will dispatch an ambulance to take you to the emergency department.</p> <p>Remember, "time is brain" when it comes to stroke, and the faster you receive treatment, the better your chances are for a good outcome.</p>
User	I am so worried and scared now. What will the ambulance man and doctors do for me?
AI	<p>I understand that this is a scary and stressful situation, but please know that the ambulance crew and doctors are highly trained professionals who are there to help you. They will take the necessary steps to evaluate your symptoms, determine the cause, and provide the appropriate treatment.</p> <p>When the ambulance arrives, the crew will assess your condition and provide any necessary emergency treatment, such as oxygen or medication to help manage your symptoms. They will then transport you to the emergency department, where a team of medical professionals will be waiting to evaluate you further.</p> <p>In the emergency department, the medical team will conduct a physical exam and ask about your medical history and symptoms. They may also perform imaging tests such as a CT scan or MRI to determine the type and location of the stroke. Based on their evaluation, they will determine the appropriate course of treatment, which may include medications or surgery.</p> <p>Throughout the evaluation and treatment process, the medical team will keep you informed and answer any questions you may have. They will work closely with you and your family to ensure that you receive the best possible care and support.</p> <p>Remember, the most important thing you can do right now is to seek medical attention immediately. The sooner you receive treatment, the better your chances are for a good outcome.</p>

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