March 15, 2022

Dr. Raffaella Bosurgi  
Executive Editor, *PLOS Medicine*

Dear Editor:

I wish to submit an original article for publication in *PLOS Medicine* , titled “**Deep-learning model for needle electromyography electrodiagnosis in comparison with physician assessment: A retrospective study**.” The paper was coauthored by Ilhan Yoo, Jaesung Yoo, Dongmin Kim, Ina Youn, Hyodong Kim, Michelle Youn, Jun Hee Won, Woosup Cho, Youho Myong, Sehoon Kim, Ri Yue, Sung-Min Kim, and Kwangsoo Kim

Electromyography (EMG) plays an important role in the diagnosis of neuromuscular diseases by identifying the characteristic abnormalities of the waveform. However, it has some limitations in that there are discrepancies in the electrodiagnosis results among physicians, and the accuracy of electrodiagnosis of EMG relies on the experience of physicians. Therefore, a more objective and accurate method of EMG analysis is required. This study assessed a novel a deep-learning model that can classify patients into myopathy, neuropathy, or normal based on volitional state nEMG signals. The classification results of the deep-learning model and the electrodiagnosis results of the six physicians were compared. We believe that our study makes a significant contribution to the literature because we found that classification using our deep-learning model was more accurate and faster than that by physicians.

Further, we believe that this paper will be of interest to the readership of your journal because we show that there is a potential for deep-learning to assist physicians in diagnosing patients with neuromuscular disease.

This manuscript has not been published or presented elsewhere in part or in entirety and is not under consideration by another journal. The requirement for informed consent was waived due to the retrospective nature of the study. The study design was approved by the appropriate ethics review board. We have read and understood your journal’s policies, and we believe that neither the manuscript nor the study violates any of these. There are no conflicts of interest to declare.

Thank you for your consideration. I look forward to hearing from you.

Sincerely,

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