

Editors' Pick in March 2023

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Many interesting articles are published via the present issue (Vol. 66 No. 2). The editorial board have selected two articles as "Editor's Pick". We would like that our readers are interested in these two studies.

Characteristics of focused ultrasound mediated blood-brain barrier (BBB) opening in magnetic resonance images (MRIs)

In the last decade, focused ultrasound has been successfully introduced as a powerful device for the treatment of neurological disease, including movement disorders, brain tumor, and psychiatric disorders²⁾. Many researchers have contributed to this development, but the achievements made by the Yonsei University group seemed outstanding among them. This study retrospectively analyzed MRIs among the data of two prospective studies conducted by this group¹⁾.

One of the most important features of the focused ultrasound working on the central nervous system is opening of the BBB^{2,3)}. The author tried to find MRI findings during the opening of BBB after sonication. They found two types of changes after sonication. First, effective opening of the BBB resulted in extravasation of contrast agent that could be found in T1 contrast images. Second, there were large numbers of tiny dark spots in T2-gradient echo images, representing para-

magnetic substances produced by blood degradation. These two MRI findings were transient.

This study provides an objective biomarker for determining whether focused ultrasound opens the BBB. It is believed that this study can be developed in the direction of studying the difference in prognosis of future treatments depending on the presence or absence of these biomarkers.

Artificial intelligence (AI) for neurosurgery : current state and future directions

Since AlphaGo beat the human representative, AI has developed by leaps and bounds. In this article, the authors argued current state of AI in perspective of a neurosurgeon practicing in the medical field. The most pivotal issue in this article is criticism of whether artificial consciousness could be created in the present state of AI technology. The authors appraise that the AI developed so far is more close to a slave role rather than an ego that acts according to its own will. This opinion is equivalent to the editor's view⁴⁾.

Currently, AI technologies are used in diagnosis of disease, surgical assistance, data sorting in an intensive care unit, prediction of prognosis, and drug development⁵⁾. However, many of these technologies are seem to be still investigative⁶⁾. The author has made a reasonably good summary, but it also im-

• Received : February 14, 2023 • Revised : February 16, 2023 • Accepted : February 17, 2023

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plies that AI technology still has a long way to go.

AUTHORS' DECLARATION

Conflicts of interest

No other potential conflict of interest relevant to this article was reported.

Author contributions

Conceptualization : MC; Data curation : MC; Formal analysis : MC; Funding acquisition : MC; Methodology : MC; Project administration : MC; Visualization : MC; Writing - original draft : MC; Writing - review & editing : MC

Data sharing

None

Preprint

None

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• Acknowledgements

This work was supported by the Soonchunhyang University Research Fund.

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