

Letter to the Editor

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“Medicine is a science of uncertainty and an art of probability.” These are the words of Sir William Osler, the father of medical education who taught internal medicine at the Johns Hopkins University in the United States. Although this quote is more than a century old, I believe that it accurately expresses the subject “medicine,” including the current state of affairs.

How should we, as clinical doctors who provide medical care based on the uncertain science of medicine, apply ourselves? First, we should conduct properly designed randomized controlled trials (RCT) to clarify the results of our treatments. In other words, we should figure out probabilities. Next, we should further perform research to improve the identified probabilities. For instance, if 70% of patients with a certain disease show good outcomes with treatment (the probability), then we should seek to improve the existing therapies or develop new treatment methods to further improve patient outcomes. Both basic and translational researches are necessary to achieve this.

Japan has few large volume centers, and with hospitals dispersed throughout the country, there is a tendency for each hospital to have its own style of treatment. Naturally, since each facility has only a small number of patients, it is difficult to perform RCT and other large cohort studies. However, it is possible to perform a variety of perioperative exams on each patient. For example, in carotid artery stenting (CAS), we perform a variety of preoperative tests, including carotid ultrasonography, MR angiography (plaque study), brain MRI, multidetector computed tomography (MDCT), angiograms, evaluation of cognitive function, and cerebral blood flow exams. Further, postoperatively, we perform ultrasonography, MRI, MDCT, higher brain function tests, and cerebral blood flow exams. In addition, follow-up angiograms are performed whenever possible. Medico-economically, these approaches may have some demerits, but analyzing the detailed data from these tests has helped us discover various problems with CAS that were previously unknown. Such data are treasures for clinical doctors. By analyzing the data on a relatively small number of cases,

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we have published clinical research reports on CAS and have similarly studied other diseases. Although it may seem trifling, we believe that such accumulation of clinical research can serve as the basis for improving the existing treatment methods and developing therapeutic techniques. It is said that persistence pays off, and this is true at our facility; over time, the small number of patients that we have treated has given us the experience and data of more than 500 cases of CAS. In the future, we would like to use this accumulated data to perform research to obtain new findings.

In Japan, surgical procedures for diseases such as cerebrovascular disorders, brain tumors, and head trauma are the provenance of neurosurgeons. Moreover, neurosurgeons often handle neuroendovascular therapies. At our facility, neurosurgeons additionally shoulder tPA therapy in brain infarctions and conservative treatments for other neurological diseases. Our workdays are extremely busy, and at times, clinical doctors such as us, are overworked by our daily duties. Nevertheless, I believe that clinical doctors must perform clinical research as part of their involvement in the practice of medicine. In addition to our daily duties, it is also important to instruct junior doctors. Dr. Osler said the following to medical students and residents: “The practice of medicine is an art, not a trade; a calling, not a business; a calling in which your heart will be exercised with your head.” This quote describes the importance of the mindset in the practice of medicine. I try to help junior doctors understand Dr. Osler’s words, and in addition to teaching them surgical techniques, I attempt to integrate a positive mindset, so that they engage in research to improve the clinical results and build healthy, trusting relationships with patients by understanding their ailments.

To conclude, I hope our studies and reports published in this journal will contribute to improving therapeutic results in neurological diseases.