Early Clinical Diagnosis of Lacunar Strokes

To the Editor:

Phillips and colleagues\(^1\) report the GAIN Americas data to describe the relationships between the OCSP\(^2\) and TOAST\(^3\) classifications tools, focusing on the accuracy of the OCSP classification in the early diagnosis of a lacunar stroke.

The authors classify lacunar syndromes (LS) within 6 hours of stroke onset and conclude that the OCSP classification is highly accurate in detecting a lacunar stroke. As reference standard they used the diagnosis of small-vessel disease according to the TOAST classification performed at 7 days after stroke onset or at hospital discharge, after a battery of investigations which was not standardized, and, as the authors themselves report, did not include any information from control brain imaging.

However, the TOAST classification has a key point in the detection of the site and size of the brain lesion at neuroimaging. As a matter of fact, when the TOAST authors validated the baseline classification, performed in the TOAST trial patients\(^4\) within 24 hours of stroke onset, by using as reference standard the classification performed after a complete diagnostic work-up, which included control imaging in the following days, the diagnosis of stroke due to small-vessel disease was confirmed in only 66% of cases.\(^4\)

In other words, the reference standard to confirm the accuracy of the clinical diagnosis of a lacunar stroke remain the detection of a “small subcortical lesion” at a control MR or CT, which were not analyzed in the article by Philips and colleagues.

On the other hand, the 87% positive predictive value (PPV) of LS for detecting a lacunar infarct on brain CT or MR reported in the NOMASS study, which the authors comment as a confirmation of the accuracy of the clinical diagnosis, refers to a clinical evaluation performed within 1 week of stroke onset. Moreover, it is not different from the PPV of LS for detecting a lacunar infarct on brain CT reported in the original Bamford’s article in which, again, patients were first assessed days after stroke.\(^2\)

However, when the LS is defined within the first few hours of stroke onset and is compared to brain CT performed some days after stroke, the PPV is 29%\(^5\) to 56%\(^6\) whereas when DW MR is performed 24 to 48 hours after stroke onset, the PPV is 32%\(^7\) to 59%.\(^8\)

Another key issue is that the authors report that only patients with limb weakness were included in the study, but it is known that pure motor hemiparesis and sensorimotor stroke syndromes are those for which the attribution to a lacunar or a nonlacunar stroke is more difficult. Hence, knowing their prevalence among the LS would have added valuable information to their results.

In conclusion, the authors compared a baseline LS classification with the OCSP algorithm, to a lacunar stroke classification with the TOAST algorithm which was somewhat the baseline one, at least as regards the neuroimaging work-up.

Comparing an imperfect syndromic classification to an imperfect pathogenic classification\(^9\) may only lead to nongeneralizable results.

Disclosures

None.

Danilo Toni, MD
Maria Luisa Sacchetti, PhD
Massimiliano Principe, PhD
Department of Neurological Sciences
La Sapienza University of Rome
Rome, Italy

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Danilo Toni, Maria Luisa Sacchetti and Massimiliano Prencipe

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