

Reproducibility of flow and velocity parameters in intracranial arteries measured with phase-contrast magnetic resonance imaging: a methodological issue

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Dear Sir,

I was interested to read the paper by Correia de Verdier M and colleagues published in May 2016 issue of *Neuroradiology* [1]. The authors aimed to examine the reproducibility of phase-contrast MRI (PC-MRI)-measured flow and velocity parameters in the intracranial arteries [1]. They measured the highest flow (HF), lowest flow (LF), peak systolic velocity (PSV), and end diastolic velocity (EDV) at two dates in the anterior (ACA), middle (MCA), and posterior (PCA) cerebral arteries of 30 healthy volunteers using two-dimensional PC-MRI at 3 T. The least detectable difference (LDD) was calculated [1].

It is crucial to know that, for reliability purposes, an individual-based approach instead of group based (mean) should be considered [2–5]. Therefore, Intraclass Correlation Coefficient (ICCC) single measure instead of average measure should be reported to correctly assess the reliability.

As the authors pointed out in their conclusion, reproducibility is highest in MCA. Such a conclusion is a misleading message because in reliability analysis, group-based (average) approach is a methodological mistake and should be avoided

by researcher; otherwise, misdiagnosis and mismanagement of the patients cannot be avoided.

Compliance with ethical standards

Conflict of interest I declare that I have no conflict of interest.

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