Deficiency of Bradykinin Receptor B2 Is not Detrimental in Experimental Stroke

To the Editor:

We studied the role of bradykinin receptor 2 (B2R) in stroke development after transient middle cerebral artery occlusion (tMCAO) in mice (Austinat Braeuninger S, Pesquero JB, Bader M, Stoll G, Renné T, Kleinschnitz C, unpublished data) and could not find a detrimental effect of B2R deficiency, which is in line with previous observations.¹ In contrast, Xia et al² reported that B2R knockout mice exhibit significantly larger infarctions after tMCAO compared with wild-type (WT) controls.

Analyzing the figure provided by Xia et al,² the 2,3,5-triphenyltetrazolium chloride–stained brain section on bottom of the left panel (first row) in Figure 3 for the WT and on bottom of the right panel (first row) in the B2R knockout group appear identical.² Moreover, the authors depict eight 2,3,5-triphenyltetrazolium chloride sections per animal in this figure, each with a thickness of 2 mm. The normal mouse brain only has an average sagittal cross-section dimension of 7.6 mm (without cerebellum),³ and we cannot imagine how to dissect 8 coronal sections of 2-mm thickness from a regular mouse brain, which, however, might be possible in rats (Figure). Interestingly, the results from the infarct volumetry are given in “mm³/rat” twice (page 754).²

Infarct size in WT mice after 90 minutes of tMCAO was surprisingly small in this study,² whereas the B2R knockout mice developed infarcts at a size one would usually expect in WT mice after 90 minutes of tMCAO. Several studies could demonstrate that 60 minutes of tMCAO already causes infarct volumes between 50 and 80 mm³ in mice.⁴,⁵ Here, 90 minutes of occlusion only led to infarct volumes of 12.8±7.3 mm³ in the WT group (Figure 3).² These very small infarctions are highly suggestive for insufficient vessel occlusion, and, indeed, testing for sufficient tMCAO, eg, by laser Doppler flowmetry, as well as blinding of the operators, was not described.²

Disclosures

None.

Figure. Serial coronal 2,3,5-triphenyltetrazolium chloride–stained brain sections (thickness: 2 mm) cut with a mouse or rat brain slice matrix, respectively.

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