



Response: Heroin Use Could Also Be Associated with Ruptured Aortic Aneurysms

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We thank Drs. Wu and Lin for their insightful editorial on our study, “Heroin Use Is Associated with Ruptured Saccular Aneurysms,” which showed that heroin use is significantly associated with intracranial aneurysm rupture in patients with non-mycotic saccular aneurysms [1]. Their finding of acute aortic dissections in heroin users is interesting and suggests that there may be a common mechanism behind the formation of intracranial saccular aneurysms and aortic aneurysms. As Drs. Wu and Lin pointed out, it has recently been shown that hypoxia-inducible factor-1 α (HIF-1 α) induction exacerbates angiotensin II-induced abdominal aortic aneurysms (AAA) by upregulating matrix metalloproteinases (MMP) in angiotensin II-infused hyperlipidemic mice, whereas HIF-1 α inhibition attenuated aneurysm progression [2, 3]. Whether these findings are applicable to intracranial aneurysms remains to be elucidated.

Indeed, the role of HIF-1 α has been suggested in gene expression studies of intracranial aneurysms [4] and implies that this may be a common pathway between intracranial saccular and aortic aneurysms. Future animal studies examining the mechanistic roles of hypoxia and HIF-1 α in intracranial aneurysms are required.

Whether or not angiotensin II inhibitors are effective in heroin users remains to be elucidated. We agree with Drs. Wu and Lin that prospective studies are needed to determine the effectiveness of pharmacologic agents such as angiotensin II inhibitors in patients with intracranial and aortic aneurysms in general, and in heroin users in particular.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants performed by any of the authors.

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