Aspirin for Aneurysm

Aspirin intake prevented inflammation of both the periadventitial tissue and aneurysm wall, irrespective of initial wall condition. Although ASA prevented significant growth in aneurysms with vital walls, this preventive effect did not have an important role in elastase-degraded pouches. In possible translation to the clinical situation, ASA might exert a potential preventive effect during early phases of aneurysm formation in patients with healthy vessels but not in those with highly degenerative aneurysm walls [1].

A prospective observational study has been initiated in China (URL: https://www.clinicaltrials.gov. Unique identifier: NCT02846259) while groups in Germany and the Netherlands have both initiated a phase 2 clinical trial (URL: https://www.clinicaltrials.gov. Unique identifier: NCT03063541). On the heels of the prospective observational study in the United Kingdom mentioned above, discussions are underway regarding the initiation of a randomized clinical trial in the United States. It is our belief that the United States-based prospective randomized control trial is critical to help definitively define ASA's role as a protective pharmaceutical for unruptured IAs [2]

Aspirin therapy and well-controlled blood pressure are associated with a low risk of unruptured intracranial aneurysm (UIA) growth; the incidence of UIA growth in high-risk patients in the first year is high, warranting intensive surveillance in this patient group [3].

Patients taking aspirin had a lower rate of hemorrhagic presentation. In addition, taking aspirin did not adversely impact presenting clinical grade or radiographic grade, vasospasm, and outcome in the setting of aneurysmal SAH [4].

Patients with continuous ASA treatment were significantly older than patients without ASA, but there was no difference in admission status or bleeding pattern. The outcome was not different in the matched-pair analysis. There was no statistical difference in treatment-related-complication rates of microsurgical and endovascular procedures. Therefore, ASA use should not influence the treatment decision of the ruptured aneurysm [5]

Case series

Between January 2006 and December 2016, 941 patients without continuous antithrombotic or anticoagulant medication were treated due to SAH in the Department of Neurosurgery, Goethe University, Frankfurt am Main, Germany. Fourteen of them (1.5%) had taken ASA as a single dose because of headache within 24 h before hospital admission. A matched pair analysis was performed. Admission status was good in 93% of patients with one-time use of ASA (OTA), but only in 59% of all other patients ($p < 0.01$). Bleeding pattern did not differ, but half of the patients with OTA had no

identifiable bleeding source; this rate was significantly lower in the rest of the patients ($p < 0.005$). Aneurysm treatment and related complications did not differ between both groups. Cerebral vasospasm was more often only mild and rates of cerebral infarctions were lower in the OTA group but not on a significant level. Eighty-six percent of the OTA group and 84% ($p = 0.8$) of the matched pair control group reached favorable outcome according to mRS 6 months after SAH. Patients with OTA in case of SAH are usually in good clinical condition and bleeding pattern does not differ. In half of the patients with OTA, no bleeding source was detectable. In the case of aneurysm treatment, related complications did not differ and most of the patients reached favorable outcome. In the case of aneurysm treatment procedure, OTA does not influence treatment course and should not influence treatment decisions [6].

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