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Haemorrhagic

EP01* SAFETY AND EFFICACY OF EPTIFIBATIDE FOR ENDOVASCULAR INTRACRANIAL ANEURYSM TREATMENT

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Introduction The rate of thromboembolic complications during endovascular aneurysm treatment remains at a relatively high rate of about 10%.¹ However, only 30% of these complications result in clinically symptomatic events. One effective group of drugs in treating and preventing embolic events are GP IIb/IIIa inhibitors.²

Aim of Study To report our results concerning safety and efficacy of eptifibatide in the prevention and treatment of thromboembolic complications in ruptured and unruptured aneurysms and develop a treatment algorithm.

Methods During a three-year period, 41 patients received eptifibatide at our institution during aneurysm treatment (23 patients (56%) with ruptured aneurysms). Reasons for eptifibatide treatment were: clot at the coil surface, clot prevention before stent placement and distal emboli. Presence of distal occlusion at the end of the procedure and intracranial hemorrhage were recorded as predictors of efficacy and safety.

Results Treatment indications were: clot at the coil surface in 27 (57%), prevention before stent placement in 10 (24%) and distal embolism in 4 cases (10%). Eptifibatide was given as arterial bolus in 5 (12%), as intravenous infusion in 7 (17%) and combined in 29 cases (71%). In 4 cases (10%), a distal occlusion persisted at the end of the intervention, one resulted in a symptomatic infarction (2%). In two patients (10%), intracranial hemorrhage occurred (one clinically silent bleeding and one fatal parenchymal hemorrhage (2%)).

Conclusions Based on our experience, we propose an algorithm for eptifibatide administration for endovascular aneurysm treatment based on patient characteristics as well as the postinterventional angiogram.

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Disclosure Nothing to disclose

EP02* PIPELINE EMBOLIZATION DEVICES FOR THE TREATMENT OF INTRACRANIAL ANEURYSMS (PEDESTRIAN), SINGLE CENTRE REGISTRY: LONG-TERM ANGIOGRAPHIC AND CLINICAL OUTCOMES FROM 1,000 ANEURYSMS

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Introduction Prospective studies have established the safety and efficacy of the Pipeline™ Embolization Device (PED) for treatment of intracranial aneurysms (IA)

Objective/Aim To investigate long-term outcomes from the Pipeline Embolization Devices for the Treatment of Intracranial Aneurysms (PEDESTRIAN) Registry.

Methods The PEDESTRIAN registry data was retrospectively reviewed, which included patients (March 2006–July 2019) with complex IAs treated with PED. Patients with unfavorable anatomy and/or recurrence following previous treatment were included and excluded those with acute subarachnoid hemorrhage. The primary angiographic endpoint was complete occlusion and long-term stability. Clinical and radiological follow-up was performed at 3–6 months, 12 months, and yearly thereafter.

Results A total of 835 patients (mean age 55.9±14.7 years; 80.0% female) with 1,000 aneurysms were included. Aneurysms varied in size: 64.6% were small (≤10 mm), 25.6% were large (11–24 mm), and 9.8% were giant (≥25 mm). A total of 1,214 PEDs were deployed. Follow-up angiography was available for 85.1% of patients with 776 aneurysms at 24.6±25.0 months (mean). Complete occlusion was demonstrated in 75.8% of aneurysms at 12-months, 92.9% at 2–4 years, and 96.4% at >5 years. During the post-procedural period, mRs remained stable or improved in 96.2% of patients, with stability or improvement in 99.1% of patients >5 years. The overall major morbidity and neurological mortality rate was 5.8%.

Conclusion This study demonstrated high rates of long-term complete aneurysm occlusion, stable or improved functional outcomes, and low rates of complications and mortality. Clinical and angiographic outcomes improved over long-term follow-up, demonstrating endovascular treatment of IA with PED is safe and effective.

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Disclosure Dr Scrivano is a proctor in the use of the PED for Medtronic. Dr Lundquist is a proctor in the use of the PED for Medtronic. Dr Pedro Lylyk serves as a consultant/proctor for Medtronic and he received fees from Medtronic for lectures and for development of educational presentations. This project was supported by Medtronic through an unrestricted research grant.

EP03* INTENSIVE THERAPIES OF DELAYED CEREBRAL ISCHEMIA TARGETING VASOSPASM: A TWO-CENTER PROPENSITY-MATCHED STUDY

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Introduction Distal balloon angioplasty of cerebral vasospasm has promising preliminary results over conventional angioplasty with intraarterial infusion of vasodilator for treatment of delayed cerebral ischemia (DCI) in aSAH.

Aims We aimed to test the superiority, between two centre-driven strategies, of an interventional strategy with distal balloon angioplasty versus conservative strategy without angioplasty, as first-line therapy for DCI.

Methods Two Centres with either conservative or intensive interventional strategies for treating DCI participated to this 1:1 matched retrospective cohort study. Consecutive patients admitted with aSAH between 2018 and 2019. Radiological DCI, death at 1 month, and favourable outcome at 6-months (modified-Rankin Scale score ≤ 2) were retrospectively analysed and compared between two-centres before and after propensity-score-matching for baseline characteristics.

Results The final analysis included 400 patients (200 in each group). Interventional and conservative groups differed in age (54 vs. 55 yrs, $P=0.040$), smoker (54% vs. 36%) and chronic high-blood pressure (37% vs. 48%), and intensive therapy for DCI including vasospasm angioplasty (38% vs. 0%, $P<0.001$), intravenous milrinone (35% vs. 0%, $P<0.001$), and induced hypertension (0%-vs-22%, $P<0.001$). After PS matching, 159 patients remained in each group. There was no significant difference of incidence of radiological DCI (9%-vs-14%, $P=0.15$), death (8% vs.9%, $P=0.4$), and favourable outcome 74%vs.72% ($P=0.4$) between interventional and conservative groups.

Conclusions This study failed to provide evidence that distal balloon angioplasty significantly improves the outcome following aSAH. Although the effect of unknown confounders between centres cannot be ruled out, our results question the use of such intensive therapies in clinical practice without further optimization and validation.

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Disclosure Nothing to disclose

EP04* EFFICACY AND SAFETY IN THE USE OF STENT-RETRIEVERS FOR TREATMENT OF CEREBRAL VASOSPASMS AFTER SUBARACHNOID HEMORRHAGE

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Introduction Cerebral vasospasms are an important cause of considerable morbidity and mortality after subarachnoid hemorrhage (SAH). In addition to conservative therapy, endovascular spasmolysis can play an important role in the management of this disease. Still, optimal management remains controversial. Stent-retrievers may provide an alternative and additional technique for the treatment of cerebral vasospasms.¹

Aim of Study To investigate the feasibility and safety of mechanical spasmolysis with different stent-retrievers.

Methods We retrospectively analyzed all patients with vasospasms after SAH that were treated with percutaneous spasmolysis using self-expanding and adjustable stent-retrievers and

remodeling devices in addition to conventional vasospasm therapy.

Results 21 vessel-segments with vasospasms in 12 patients were included. Spasmolysis with stent-retrievers was conducted in proximal and distal vessel segments without complications. In 42.9% a good effect, in 52.4% a medium effect and in only one case (4.8%) a poor angiographic effect was achieved, respectively. Spasmolysis was more effective in distal vessel segments compared to proximal (reduction of stenosis 56.6% vs. 26.7%, $p<0.05$) and more effective with 3 mm compared to 4 mm stent-retrievers (43.6% vs. 25.8%, $p=0.059$). 71.4% of patients had a favorable outcome (mRS 0–1) at long-term FU (77–226d).

Conclusion Stent-retrievers are frequently used in interventional stroke therapy and may represent a safe and effective treatment option for intracranial spasmolysis after SAH, especially for the more distal vessel-segments. Compared to conventional balloon-PTA, this method seems promising by its ease of use, low risk of rupture and retained blood flow during dilatation, however further improvement of the radial force is recommended.

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EP05* EARLY CEREBRAL INFARCTION FOLLOWING ANEURYSMAL SUBARACHNOID HEMORRHAGE IS ASSOCIATED WITH PRIOR CIRCULATORY FAILURE AND SEVERE INTRACRANIAL HYPERTENSION

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Introduction Early Cerebral injury (ECI) occurring in the first three days following a aneurysmal subarachnoid hemorrhage (aSAH) is associated with poor outcome and delayed cerebral ischemia.

Aims We aimed to correlate ECI with occurrence of circulatory-failure, and severe intracranial-hypertension.

Methods Two Institutional databases were searched retrospectively to identify consecutive patients admitted within 7 days following aSAH. ECI was defined as any radiological cerebral