extended follow-up data are needed to assess the long-term safety and durability of the device.

mechanics could be precisely evaluated over time using registration and fusion algorithms.

Conclusion The new I.V MicroDynaCT protocol improves image quality to assess aneurysm occlusion, vessel patency, and luminal narrowing in patients with FD treatment. Advanced post-processing techniques allows precise comparisons with previous studies to evaluate adverse mechanics and their changes over time. Although the preliminary experience is promising, more data are needed to establish its role as a potential substitute for DSA and intraarterial cone-beam CT.

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Abstracts

0-054 PROSPECTIVE STUDY ON EMBOLIZATION OF INTRACRANIAL ANEURYSMS WITH THE PIPELINE DEVICE (PREMIER STUDY): 3-YEAR RESULTS WITH THE APPLICATION OF A SPECIFIC FLOW-DIVERTER OCCLUSION CLASSIFICATION

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Introduction Flow diverters proved to be a safe and efficacious approach for the management of large intracranial lesions. The PREMIER trial was the first prospective study to examine the efficacy of the pipeline embolization device (PED, Medtronic) for the management of small and medium size wide-necked aneurysms. Herein, we present the 3-year follow-up results from the PREMIER cohort.

Methods The PREMIER was a prospective, single-arm study, including patients with a target wide-necked aneurysm of ≤ 12 mm, located in the internal carotid artery or vertebral artery. The primary effectiveness endpoint (complete aneurysm occlusion) and primary safety endpoint (major stroke in the supplied territory or neurologic death) were independently monitored and adjudicated. Additional angiographic evaluation to highlight the natural history of aneurysms treated with flow diverters was performed using the modified Cekirge-Saatsi Classification (mCSC).

Results According to CRL review, of 141 patients treated with PED, 25 (17.7%) required angiographic follow-up after the first year due to incomplete aneurysm occlusion. Three (12%) of these patients progressed to complete occlusion, resulting in a complete aneurysm occlusion rate at 3-year of 83.3% (115/138). Further angiographic evaluation using mCSC demonstrated that complete occlusion, neck residual, or aneurysm size reduction occurred in all cases with consecutive available follow-ups (97.1%). Overall safety endpoint occurred in 2.8% (4/140) of the patients over the 3-year follow-up, with only one event occurring after the first year – which was non-disabling at 2-year follow-up. Retreatment rate since initial device implantation was 5.0% (7/138): 4 within the first year and 3 within the second year, all carried on with PED in elective procedures. There was one case of aneurysm recurrence (0.7%) in a patient with an initially occluded aneurysm who afterward demonstrated residual neck at a 3-year follow-up. Not a single case of aneurysm rupture occurred in the series.

Conclusions A high rate of aneurysm occlusion, low morbidity, and absence of aneurysm rupture emphasize the PED as a safe treatment strategy for small and medium-sized aneurysms located along the ICA and VA in the long term.

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