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Treatments for unruptured intracranial aneurysms

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Objectives: To analyze the risks and benefits of performing an interventional procedure (microsurgical clipping or endovascular embolization) compared to conservative treatment and to assess the risks and benefits of interventional treatments (microsurgical clipping vs. endovascular embolization) for unruptured cerebral aneurysms. This review examines evidence from randomized clinical trials addressing the risks of recurrent events and the risk of early intervention.

Methods: A search was performed in the Cochrane Stroke Review Group Trials and also in MEDLINE, EMBASE, LILACS and other databases from their respective creations until May 2020. There was no language restriction in the search. Colleagues were contacted to identify further unpublished studies. All complete and randomized studies comparing microsurgical clipping or endovascular embolization and conservative treatment and also complete randomized studies comparing microsurgical clipping and endovascular embolization for individuals with unruptured cerebral aneurysm were included. The authors individually selected studies for inclusion or exclusion, measuring the quality and risk of bias of the studies, and performing data extraction. An intention-to-treat analysis strategy was used.

Results: Only one randomized trial involving 136 participants comparing conservative treatment and endovascular embolization and one randomized trial comparing microsurgical clipping and endovascular embolization for individuals with unruptured cerebral aneurysms was identified. No statistically significant difference was found between the conservative treatment and endovascular embolization groups. New neurological deficits occurred more in surgically treated patients (16/65, 24.6%; 15.8% to 36.3%) vs 7/69 (10.1%; 5.0% to 19.5%); OR 2.87 (95% confidence interval (CI) 1.02 to 8.93), $P = 0.038$. Length of stay for more than five days was also longer in the microsurgical clipping group (30/65 (46.2%; 34.6% to 58.1%) vs 6/69 (8.7%; 4.0% to 17.7%); OR 8.85 (95% CI 3.22 to 28.59), $P = 0.0001$. After one year of clinical follow-up, one patient in each group died (48 patients underwent microsurgical clipping and 58 underwent endovascular embolization) and 1 patient in each group was disabled (mRS > 2). of very low evidence.

Conclusions: At the conclusion of this study, there was not enough good-quality evidence available from a randomized clinical trial to support conservative treatment or interventional treatment (microsurgical clipping and endovascular embolization) for individuals with unruptured cerebral aneurysm. Thus, additional randomized studies are needed to determine whether the intervention is better than conservative treatment and, if so, which intervention would be better and for which patients. Future studies should stratify participants by age, gender, aneurysm size and location (anterior or posterior circulation), degree of ischemia and length of stay.

Biography

Felipe Gomes de Barros Pontes has her expertise in neurosurgery and passion in improving the health and wellbeing. He does surgeries, teach and research both in hospital and education institutions.

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