

SELECTED ARTICLES

We hereby present comments on a selection of articles recently published in internationally acclaimed medical journals. We believe these papers deserve special attention due to the quality and importance of the conclusions reached by the studies. Our objective is to keep an open look on new aspects of scientific research or review articles that may, in turn, update aspects of our own medical specialty.

Also, the Editorial Committee will consider suggestions on recent articles that the readers think deserve to be commented in this section (revista@caccv.org.ar).

PROPHYLACTIC ANTIBIOTIC THERAPY FOR INGUINAL INFECTIONS IN VASCULAR SURGERY **AMATO B, COMPAGNA R, DE VIVO S, ROCCA A, CARBONE F, GENTILE M, CIROCCHI R, SQUIZZATO F,** **SPERTINO A, BATTOCCHIO P. GROIN SURGICAL SITE INFECTION IN VASCULAR SURGERY: SYSTEMIC** **REVIEW ON PERI-OPERATIVE ANTIBIOTIC PROPHYLAXIS**

Antibiotics (Basel). 2022 Feb; 11(2): 134

<https://doi.org/10.3390/antibiotics11020134>

In spite of recent advances in pre and post-operative care, surgical site infections (SSI) in vascular surgery still remain high. B. Amato, et al., from University of Naples Federico II in Italy, conducted a systematic review of papers published from 1980 to 2020 in OVID, PubMed and EMBASE. All specialties report a 2-4% risk of SSI in “clean” surgeries, but rates are higher in post-traumatic procedures (15-50%) or in populations with risk factors, i.e. high-risk vascular surgery patients (15%-22%). Current guidelines recommend no more than 24 hours of peri-operative intravenous antibiotic therapy in cases of clean vascular surgery, as prolonging treatment has shown no benefits. However, when there are clear signs of infection or risk factors, like the use of synthetic prosthesis, management is still not well defined.

The major incidence of SSI in vascular surgery is observed in the inguinal area, with percentages ranging from 5 to 30%. Some of the factors that increase this risk are diabetes, smoking, female sex, synthetic prostheses, obesity and the use of steroids. Although any bacteria may in theory infect a vascular prosthesis or lead to SSI, the most frequently involved are Gram - *Pseudomona aeruginosa* and *Staphylococcus epidermidis* and among Gram + bacteria, *S. aureus*. A major challenge is posed by biofilms, bacterial complexes characterized by secretion of adhesive matrixes that protect them from external antibiotics and host defenses.

Authors identified 364 publications, 36 of which were deemed apt for meta-analysis upon applying inclusion and exclusion criteria. Meta-analysis results indicate that the pre-operative antibiotic therapy of choice for prevention of SSI in vascular surgery is first or second generation cephalosporins, which are

low cost (cefazolin being the most commonly used), whereas vancomycin and clindamycin are reserved for β -lactamic allergies. It is convenient to remember that a history of allergy to these antibiotics is very frequent, but only 10% of cases are a true allergy. For an appropriate treatment strategy in these cases, it is suggested to conduct allergy skin tests. In centers with high prevalence of methicillin-resistant *S. aureus*, or in patients with high risk of infection (elderly individuals, cancer or dialysis patients), the use of prophylactic vancomycin needs to be considered, and the benefit of its use in combination with cefazolin has been observed. Other authors have found benefits with the administration of a second dose of cefazolin in patients with blood loss higher than 1500 ml or in prolonged surgeries.

In the case of endovascular procedures, there is no general consensus on antibiotic prophylaxis. The usual scheme is the same as for open vascular surgeries (single pre-operative cephazolin dose, replaced by vancomycin in case of allergies to β -lactamics). There is controversy regarding the benefit of peri-operative testing of nasal carriers of methicillin-resistant *S. aureus*.

Several authors have found very favorable results with collagen implants with gentamicin in the surgical site, although, given the short evidence available, it is considered necessary to conduct multicenter trials in order to validate such observations.

Authors conclude that the prophylactic administration of peri-operative antibiotics with coverage for Gram+ and Gram-, and the possible addition of a second dose in case of blood losses greater than 1500 ml or prolonged surgeries has a significant impact in SSI reduction in vascular surgery.

CAROTID STENTING VS. MEDICAL THERAPY IN ASYMPTOMATIC PATIENTS

KEYHANI S, ET AL. COMPARATIVE EFFECTIVENESS OF CAROTID STENTING TO MEDICAL THERAPY AMONG PATIENTS WITH ASYMPTOMATIC CAROTID STENOSIS.

Stroke 2022;53:1157-1166

<https://doi.org/10.1161/STROKEAHA.121.036178>

Keyhani S et al. of San Francisco Veterans Affairs Medical Center in the U.S., state that although there are studies that prove the benefits of carotid endarterectomy (CEA) in the prevention of cerebrovascular accidents (CVA) in patients with carotid stenosis, both symptomatic and asymptomatic, there are no clinical trials making a direct comparison of carotid artery stenting (CAS) to medical therapy (MT).

Since the CVA risk in patients with asymptomatic carotid lesion has gone down thanks to advances in MT, the prospective CREST-2 trial comparing MT to surgical approaches is ongoing and the results will be available in 2025. While awaiting for the results, the authors conducted a retrospective study on 219,979 patients ≥ 65 with carotid lesion that had received an image diagnosis between 2005 and 2009. The cohort of asymptomatic patients excluded patients with CVA or transient ischemic accident during the 6 months prior to the image study, as well as those that had received CAS or CEA during the same period.

The authors initially segregated patients with stenosis ≥ 65 <50% and later identified 13,371 that had stenosis reports $>70\%$ or description of severe, critical or almost occlusive stenosis. Time 0 was considered to be the time of the first study that showed the presence of carotid lesion. The authors selected patients with MT and those that received interventions (CAS or CEA) of similar characteristics.

After applying inclusion criteria, 551 patients were grouped as CAS, 2712 as CEA and 2509 as MT. The lower number of patients with CAS and the greater number of comorbidities (coronariopathy, COPD, use of antiangina medications) prevented the possibility of conducting a comparative study among the three groups, for which reason this trial presents the comparison among those that effectively received CAS within the first year of diagnosis and those that received MT only.

The incidence at 5 years of fatal and non-fatal CVA, as well as non-CVA related deaths was analyzed. The percentage of CVA or death in the CAS group within 30 days was 2.2%. The risk of fatal or non-fatal CVA at 5 years was 10.3% in the CAS group and 6.9% in the MT treatment group; survival at 5 years was 61.7% and 66.9%, respectively. Once statistical adjustments were applied, these differences maintained the lack of significance. All analysis indicate that CAS does not offer a significant advantage over MT in terms of CVA reduction.

Authors acknowledge some limitations of the trial because of its retrospective character, the small number of patients in the CAS group, and for having been conducted in an exclusively male population. Considering these limitations, no differences were found between patients treated with CAS and those that received MT. Further studies are required to confirm these results.