

dissection who were enrolled in IRAD from December 26, 1995 with a follow-up to 5 years who had follow-up data that included the use of medications. There were records from 1301 patients available for analysis; these included 722 with type A dissection and 572 with type B dissection. Univariate analysis demonstrated beta blockers were associated with improved survival in all patients ($P = .03$), in patients with type A dissection overall ($P = .02$), and in patients with a type A dissection who receive surgery ($P = .006$). Calcium channel blockers were associated with improved survival in patients with type B dissection overall ($P = .02$) and in patients with type B dissection receiving medical management ($P = .03$). With multivariate modeling beta blockers were associated with improved survival in those with type A dissection undergoing surgery (OR, 0.47; 95% CI, 0.25 to 0.90; $P = .02$) and calcium channel blockers were associated with improved survival in patients with type B dissection managed medically (OR, 0.55; 95% CI, 0.35 to 0.88; $P = .01$). There was no association of angiotensin converting enzyme inhibitors with mortality.

Comment: The bottom line, within the limitations of the data, is that beta blockers are beneficial in all types of aortic dissection regardless of operative or nonoperative management. However, calcium channel blockers appear to be only beneficial in the medical management of type B dissection. No benefit could be found for the use of ace inhibitors in patients with aortic dissection. In patients with Marfan's syndrome, however, recent studies suggest benefit of ace inhibitors. A separate analysis of patients with Marfan's syndrome in IRAD was not performed in this study. The IRAD data predate the more widespread use of angiotensin receptor blockers. The data also did not allow authors to test the effects of drug combinations and varying dosages on mortality.

Adapted from Moneta G et al. 2012 Year Book of Vascular Surgery. Philadelphia, PA: Elsevier; 2012; with permission.

Vascular Trauma in Geriatric Patients: A National Trauma Databank Review

Konstantinidis A, Inaba K, Dubose J, et al. J Trauma 2011;71:909-16.

Conclusion: In the geriatric patient, vascular trauma is uncommon with most injuries being blunt and the thoracic aorta the most frequently injured vessel. Vascular trauma in the geriatric patient is associated with a fourfold increase in adjusted mortality compared to vascular trauma in the nongeriatric patient.

Summary: There is little literature on the epidemiology of vascular injuries in elderly patients with poor documentation of diagnosis, management, and outcome of these injuries. In this study, the authors used the National Trauma Data Bank (NTDB), the largest trauma registry in the United States, to determine the epidemiology of vascular injuries in geriatric patients and to compare geriatric vascular injuries to vascular injuries in younger adults. The authors compared incidence of injury, injury mechanism, and outcome. Geriatric patients were defined as those 65 years or older. The "control" group was an adult cohort age 16 to 64 years. Vascular injuries were determined from the NTDB, version 7.0, which contains 1,861,779 medical records from 2002 to 2006. Patients were identified with the use of the International Classification of Diseases, Ninth Revision (ICD9), codes 900.0 to 904.9. Patients of unknown age were excluded.

During this study period, there were 29,736 patients with a vascular injury, 1.6% of the patients in the NTDB for the time considered. Of the patients identified with vascular injury, geriatric patients accounted for 7.6% ($n = 2268$) and nongeriatric adult patients accounted for 83.1% ($n = 24,703$). Geriatric vascular injury patients had a higher injury severity score compared to nongeriatric vascular injury patients (26.6 ± 17 vs 21.3 ± 16.7 ; $P < .001$). Geriatric patients were less frequently victims of penetrating injuries (16.1% vs 54.1%; $P < .001$). The thoracic aorta, innominate and subclavian vessels, and other vessels of the chest were the most commonly injured vessels in the elderly ($n = 637$, 40.2%). The incidence of thoracic aortic injuries was higher in geriatric patients compared to nongeriatric patients (33.0% vs 13.9%; $P < .001$). This incidence increased linearly with age. Adjusting for confounding variables, geriatric patients had a fourfold increase in mortality following vascular injuries (OR, 3.9; 95%CI, 3.32-4.58; $P < .001$). The most common mechanism of injury in the geriatric patient was a motor vehicle accident, with falls being the second most common mechanism of injury.

Comment: This is likely the largest examination of the epidemiology of geriatric vascular trauma available. There are obvious limitations. The study is retrospective and dependent on accurate data from more than 900 trauma centers in the NTDB. Nevertheless, we can conclude vascular trauma in the elderly is infrequent compared to younger patients, there is predominately a blunt mechanism of vascular trauma in the elderly, the thoracic aorta is the most frequently injured vessel, and there is the increased relative mortality of vascular injury in the elderly.

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