Pre-Operative Beta-Blockers Prior to Major Elective Vascular Surgery Do Not Improve Cardiac Outcomes and May Be Harmful

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OBJECTIVE: Pre-operative β-blocker (pBB) initiation is controversial due to conflicting data in the literature. The purpose of this analysis was to determine whether pBB started before major elective vascular surgery decreased postoperative cardiac events or mortality.

METHODS: Using the VQI dataset, a retrospective cohort analysis was performed of patients undergoing infrainguinal bypass (IIB), suprainguinal bypass (SIB) and open AAA repair (oAAA). Patients on chronic BB (>30 days) were excluded. Comparisons were made between pBB (0-30 day) and no BB (nBB) groups. Patients were risk stratified and multiple iterative analytic methods were performed. End-points included in-hospital major adverse cardiac events [MACE: MI, dysrhythmia (DYS), CHF] and 30-day mortality.

RESULTS: A total of 5,957 patients (pBB, N=1,797;30%; nBB, N=4,160;70%) were analyzed. A propensity-matched pairs analysis revealed higher rates of DYS (IIB, SIB, oAAA) with pBB, but no difference in MI, CHF or mortality in any group. When stratified into low, medium and high-risk groups within each procedure, all groups treated with pBB had either no difference or higher rates of MACE and 30-day mortality, with the exception of high-risk oAAA patients, who had a lower rate of MI when treated with pBB (Figure).

CONCLUSIONS: Exclusive of high-risk oAAA patients, pBB did not decrease rates of MACE after elective IIB, SIB or oAAA, and in fact increased the rate of some adverse events. The data in VQI do not support the practice of routine pBB before major vascular surgery in most patients.

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