Low Dose Aspirin for VTEp Results in Lower PJI Rates

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INTRODUCTION:
The use of Aspirin as VTE prophylaxis, has shown to have anti-staphylococcal and anti-biofilm role. Optimal ASA dosage would facilitate antimicrobial effects while avoiding over-aggressive inhibition of platelet antimicrobial function. Our purpose was to determine the rate of PJI after TJA in patients receiving low-dose ASA (81mg bid), in comparison to high-dose ASA (325mg bid).
METHODS:
We conducted a retrospective cohort study between 2008 and 2020. Eligible patients were older than 18 years, undergoing primary TJA, had a minimum follow-up of 30 days and received a full course of ASA post-operatively as VTE prophylaxis. Patients' records were reviewed for PJI, according to MSIS criteria. Entries were excluded if patients underwent a revision arthroplasty, had a previous history of coagulopathy or ASA regimen was not completed.
RESULTS: In total, 15,825 patients were identified, 8,761 patients received low-dose ASA, and 7,064 patients received high-dose ASA. More patients in the low-dose ASA cohort had a history of diabetes mellitus (7.1% vs. 2.53%, $p < 0.001$). Patients receiving high-dose ASA had a higher rate of PJI vs. patients receiving low-dose ASA (0.35% vs. 0.10%, $p = 0.001$). This relationship was maintained when comparing subgroups comprising TKA (0.32% vs. 0.06%, $p = 0.019$) or THA (0.38% vs. 0.14%, $p = 0.035$) solely, and accounting for potentially confounding demographic variables (OR 3.37, 95% CI 1.58 - 8.04, $p = 0.003$). There were no statistically significant differences in rates of post-operative MI, CVA, GI ulceration or hemorrhage. ROC/AUC analysis of platelet count as a variable for the development of PJI in both cohorts revealed no significant association.
DISCUSSION AND CONCLUSION: When comparing low-dose to high-dose ASA as VTE prophylaxis, low dose ASA had a lower rate of PJI. This may be attributable to a balance of the anti-infective properties of ASA, and anti-platelet effects.