Description of Patient-Reported Outcomes in Patients using S<a>elective Serotonin Reuptake Inhibitors Undergoing Total Hip and Knee Arthroplasty

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INTRODUCTION:

Patients undergoing arthroplasty procedures often present with comorbidities, including psychological conditions such as depression and anxiety. Although depression has been associated with worse preoperative and postoperative outcomes in total hip (THA) and total knee arthroplasty (TKA), it is currently unclear if pharmacological treatment with selective serotonin reuptake inhibitors (SSRI) or selective norepinephrine reuptake inhibitors (SNRI) can attenuate these effects. To date, no studies have examined pre- and postoperative pain and patient-reported outcome scores as stratified by medication timing or type of selective serotonin or norepinephrine reuptake inhibitors. Thus, this study evaluated whether perioperative medication timing or medication class is associated with differences in pre- and postoperative pain and patient-reported outcome measures.

METHODS:

This is a retrospective study of 624 patients who underwent a primary TKA or THA between 01/01/2015 – 11/23/22. The cohort consisted of two groups - a treatment group and a control group. The inclusion criteria for the treatment group was patients undergoing TKA or THA who were prescribed a SSRI, SNRI, a serotonin antagonist and reuptake inhibitor (SARI), or a norepinephrine and dopamine reuptake inhibitor (NDRI) within one-year pre or postoperatively. The control group was created based on the nearest neighbor matching method from a cohort of patients who were not prescribed psychotropic medication. Patient age, sex, race, comorbidities, pre and postoperative pain intensity, PROMIS physical function, pain interference, and depression were recorded. We compared the change in pain intensity and PROMIS measures from three months pre operative to three months postoperative between medication timing groups (pre only, post only, pre+post, and control) and preoperative medication class (SSRI, SNRI, NDRI, SARI, and Controls) using separate one-way ANOVAS.

RESULTS:

Six-hundred-twenty-four patients, aged 64 (SD=11.13) 63% female were included in this analysis. There was a statistically significant difference in preoperative depression scores among the medication timing groups ($F(3, 299) = 4.88$, $p = .003$). Tukey post hoc analysis demonstrated that control patients ($M = 47.39$, $SD = 10.06$) had significantly lower depression scores than patients on preoperative medication ($M = 52.53$, $SD = 8.92$, $p = .002$) and those on medication pre and postoperatively ($M = 51.65$, $SD = 9.65$, $p = .02$). There was no difference in postoperative depression scores among the medication timing groups. There was no difference in preoperative or postoperative pain scores and physical function scores between any medication timing groups. Differences in the change in pain interference scores across all medication timing groups was not significant.

There was a statistically significant difference in preoperative pain scores among the medication class groups (F5,617) = 2.35, p =0.0395. Tukey post-hoc analysis however demonstrated no significant differences between any two groups. There was no significant difference in postoperative pain scores among the medication class groups. There was no difference in pre- or postoperative pain scores and physical function scores between any medication class groups. Differences in the change in pain interference scores across all medication class groups was not significant.

DISCUSSION AND CONCLUSION:

These results demonstrate that despite significantly higher preoperative depression scores among patients taking psychotropic medications, the timing and class of serotonin and norepinephrine targeted therapy are not associated with differences in patient-reported postoperative pain, physical function, or depression scores even when compared to controls. While significant differences in preoperative pain score by medication class were demonstrated, no paired comparisons between classes were significantly different. Our findings demonstrate that pharmacological treatment for depression is not associated with worse short-term pain or patient-reported outcomes and that there are no differences in outcomes when stratified by class or perioperative medication timing.