Preoperative Insomnia Increases 90-Day Medical Complications and 2-Year Revision Rates in Total Knee Arthroplasty (TKA)

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INTRODUCTION: Chronic insomnia may lead to immune dysregulation, systemic inflammation, and impaired wound healing. However, there is a lack of existing literature investigating its association with postoperative complications following total knee arthroplasty (TKA). This study compares 90-day medical and 2-year mechanical postoperative complication rates between TKA recipients with and without a preoperative diagnosis of insomnia.

METHODS: This retrospective cohort study utilized the TriNetX database. Patients over the age of 18 (n = 328,543) undergoing TKA from 2003 to 2023, with a 2-year postoperative follow-up were included. Subsequently, patients were divided into those with a preoperative diagnosis of insomnia (n = 11,328) and those without (n =317,215) within one year before TKA. Multiple subanalyses (insomnia vs control, medicated insomnia vs unmedicated insomnia, medicated insomnia vs control, and unmedicated insomnia vs control) were evaluated for 90-day medical and 2-year mechanical complications. Statistical analyses were performed to calculate risk ratios for postoperative outcomes.

RESULTS: Propensity score matching yielded 11,326 patients in each cohort. In the 2-year mechanical complications analysis, patients with insomnia experienced higher rates of emergency department visits ($p < 0.001$), admission rates ($p = 0.003$), and revisions ($p = 0.049$). Within 90-day medical complications, the insomnia cohort experienced higher rates of deep vein thrombosis ($p = 0.035$), myocardial infarction ($p = 0.001$), and anemia ($p < 0.0001$). Within each subanalysis, the insomnia cohorts experienced more two-year and 90-day postoperative complications.

DISCUSSION AND CONCLUSION: The study results show that preoperative insomnia was associated with higher short and long-term complication rates post TKA. These findings indicate the importance of screening for and addressing chronic insomnia as part of perioperative optimization.