A Pilot and Feasibility Study to Assess An Interactive Voice Response Intervention in the Follow-up of Primary Arthroplasty

Roshan Jacob[1], Kelly M Chandler, Sameer Naranje
[1]University of Alabama At Birmingham

INTRODUCTION:
Despite advances in arthroplasty procedures, the rate of unexpected emergency department visits following hip and knee arthroplasty remains greater than 10% along with a readmission rate of nearly 6%. We propose that an early-phase telephone adapted intervention, Interactive Voice Response System (IVR), will both mitigate premature/unnecessary emergency department visits while also monitoring patients regularly for early symptoms of more severe conditions such as deep infection and formation of clots.
METHODS:
24 patients were assessed, consented and randomized to either the control or intervention groups at their preoperative visit and patient information was logged into REDCap. Patients in the intervention group received automated phone calls in addition to their regularly scheduled in person follow-ups. Phone calls started on post operative day 2, initially occurring daily and progressively reducing in frequency over 12 weeks. Phone calls assessed for pain control, signs of infection and initial signs of DVT formation. Based on patients response, further questions would be asked and ultimately the physician notified if needed. Outcomes were monitored using Short Form 36 Health Survey Questionnaire (SF-36), either Hip disability and Osteoarthritis Outcome Score (HOOS) or Knee injury and Osteoarthritis Outcome Score (KOOS) surveys, and Visual Analog Scale (VAS) at 2 weeks, 6 weeks, and 12 weeks postoperative along with any further patient complaints. Retention rate, patient satisfaction, and overall feasibility were considered the primary outcomes of this pilot study. Descriptive statistics were used to evaluate the feasibility and acceptability of this intervention among patients.
RESULTS:
12 control and 12 intervention patients completed the 12 week study with a retention rate of 80%. The overall response rate to the IVR calls was 82%. There were a total of 10 notifications to the healthcare team, 8 of which were related to pain control and 2 related to difficulty breathing. 2 emergency room visits were avoided in the IVR group due to the IVR calls. 100% of patients provided positive feedback regarding the calls and rated the questions as relevant to their surgery. 100% of patients stated they would use the IVR service again if they had to undergo another procedure. While this study is not well powered to assess efficacy, patients in both groups demonstrated improvement over the course of 12 weeks based on the short form survey, HOOS/KOOS joint outcome score, and visual analogue scale.
DISCUSSION AND CONCLUSION: We suggest that IVR can be a helpful tool in the follow-up of postoperative total joint patients.