Delivery Science Grants Program

Adductor Canal Catheters not Superior to Conventional Therapy for

Postoperative Pain Management After Total Knee Arthroplasty: A Trial

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| Challenge | **Adductor canal catheters are a common, invasive, and potentially beneficial method for improving post-operative pain control among patients undergoing total knee arthroplasty, but it is unknown if their use provides benefits beyond simpler pain management techniques, such as intra-operative peri-articular injection.** |
| Existing Evidence | In the last 7 years, the length of stay for total knee replacement patients in KPNC decreased from 3 days to <1 day, partially from improved pain control. Pilot KPNC data, and external trial data suggest adductor canal catheters may not substantially influence length of stay, opioid use, or pain scores beyond peri-articular injection. They are also associated with complications (e.g. leaking, dislodging, bleeding, hematoma, prolongedneuropraxia), that can require additional outpatient & ED visits, and substantial resources. |
| Target Population | All patients undergoing a non-complex unilateral total knee replacement who are eligible to receive an adductor canal catheter |
| Intervention or Exposure | Use of an adductor canal catheter as a supplement to other ERAS pain control protocols |
| **Outcomes/Key Findings** | Pain control and postoperative use of opioid medications were comparable (non-inferior) between patients using vs. not using adductor canal catheters as a supplement to other pain management strategies after knee replacement surgery. Complex and invasive multi-modal pain treatments using adductor canal catheters may not provide additional benefit for pain control, not impact length of stay, and increased costs/effort beyond simpler current methods for pain management  |
| **Resulting Action/Change** | The orthopedic and pain control services are evaluating whether to modify the current common use of adductor canal catheters in patients undergoing knee replacement. This would be projected, for similar outcomes, to result in: comparable pain control; fewer catheter-related complications; decreased operating room staff, anesthesiologist, & room time for insertion; decreased nursing time for patient education; fewerpost-operative visits for complications and removal; and directly reduced catheter costs of $1.5 million annually for KPNC. |
| Additional Recommendations | For additional conditions, comparative evaluations of whether invasive multi-modality pain interventions may provide value beyond simpler interventions |
| Implementation Tools  | Data summaries regarding comparable outcomes for patient & physician education |
| Implementation Measurement | Adductor canal catheter use, variation by medical center, physician, and patient demographics; post-discharge healthcare utilization (e.g. ED, office, phone visits) |
| Reference | Manuscript SubmittedA comparison of a graph  Description automatically generated with medium confidence |