The effect of an evidence based bowel protocol on time taken to return to normal bowel function in post operative total hip and total knee replacement patients

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Chapter 7 – Conclusion, Implications and Recommendations

This study produced findings of theoretical and clinical significance. The multi-site study was comprehensive and rigorous and supported the hypothesis for the study: that patients who undergo a knee or hip replacement and receive the study protocol will experience a statistically significant reduction in time taken to return to normal bowel function compared with patients who receive standard bowel management. As discussed previously in the Statement of Purpose (page 5) shoulder replacements were not included in the study hypothesis, as their small numbers ($n = 3$) prevented convergence of coefficients and caused spurious results.

A total of 331 patients were recruited across seven hospitals in two Australian states in this cluster randomised trial. Two hospitals were randomised as intervention hospitals, five hospitals were randomised as controls. Patients at intervention hospitals who received the Murdoch Bowel Protocol© were seven times more likely to have returned to normal bowel function by day five compared with patients recruited at control hospitals. Age, gender and length of pre-operative fasting were not found to be significantly associated with days to normal bowel function at discharge (day five). Length of stay was significant with each extra inpatient day resulting in an extra 0.43 days to return to normal bowel function. Patients who received combined regional and general anaesthesia took approximately two days less to return to normal bowel function when compared with patients who received general anaesthesia while total knee replacement patients took approximately one day longer to return to normal bowel function compared with those who underwent total hip replacement. The study also confirmed that post-operative constipation in this patient cohort is opioid induced.
Future Research Directions

The robust empirical evidence provided by this nursing study is unique in the area of opioid-related post-operative constipation in the orthopaedic population. It has confirmed that despite the scope of the problem nurses have managed this important clinical problem according to tradition and habit and without the benefit of an evidence based protocol. This has often resulted in lengthy discomfort for patients with the risk of significant complications which have at times necessitated increased lengths of stay or readmission to hospital for treatment of faecal impaction.

This study explored and tested the effect of the Murdoch Bowel Protocol© on post operative constipation in patients who underwent major joint replacement surgery. It would be prudent to replicate this study on general orthopaedic patients (including spinal surgery patients), other post surgical patient groups, oncology patients who experience similar complications related to the administration of opioid analgesia and paediatric populations.

Movicol® is contraindicated in those with serious underlying gastrointestinal disorders (Crohn’s disease, ulcerative colitis, intestinal obstruction or perforation, toxic megacolon). For this reason it would be prudent to exclude patients who have undergone general abdominal surgery from patient recruitment unless prior approval is received from their medical practitioner.

Movicol® is being increasingly prescribed for pregnant and breastfeeding women due to its efficacy and inert composition. Whilst the product information no longer lists pregnancy and breastfeeding as contraindications for use, it does recommend use in this patient group only on medical advice. Replicating this research would further test the reliability and sensitivity of measures used in this study.
Summary of Recommendations

Clinical nursing.
1. If not already in place, Movicol® and Microlax® enemas should be placed on nurse-initiated medication lists to enable widespread use of the Murdoch Bowel Protocol© in the adult orthopaedic setting.

Future research.
1. This study should be replicated in other patient groups who are administered opioid analgesia: general orthopaedic patients (including those undergoing spinal surgery); general surgical patients (e.g. urology and gynaecology), oncology, maternity and paediatric populations.
2. Future randomised controlled trials should measure analgesia usage and include a cost-benefit analysis of the Murdoch Bowel Protocol® on length of stay.

Education.
1. Findings from this study should be incorporated into orthopaedic and general nursing education programs.
2. Nursing education should be undertaken in relation to:
   a. undertaking baseline bowel assessments;
   b. the importance of clean and private bathroom facilities where possible; and
   c. the importance of discharge education about ongoing bowel management when discharged on opioid analgesia.