

Research Project Plan RP10-04

Adherence to Fast-track Programmes within Urology Nursing Care
2008-2010

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Introduction

The incidence rate of kidney cancer in Denmark is 650 cases annually. Approximately one third of the patients have advanced metastatic disease at time of diagnosis. Most of the remaining two thirds of patients will have the kidney and the tumour removed surgically. All surgical procedures (open, laparoscopic or Cryo procedure) are performed in inpatient departments. Approximately two thirds of the operated patients can be rehabilitated in a fast-track programme. The average length of hospital stay is thus reduced from ten to four days [1].

The Perioperative Unit for Nursing in Denmark has, in corporation with the urology clinics in Denmark, produced a clinical guideline for fast-track patient pathways: "Nursing for patients who have undergone transperitoneal nephrectomy "[2]. The purpose of using clinical guidelines is to improve quality and outcome. Major surgical interventions entail pain and stress-induced catabolism causing unwanted metabolic and inflammatory response. Moreover, major surgical procedures may also result in impaired organ function and risk of thrombosis. The above complex factors will delay the process of rehabilitation.

A fast-track pathway is a multimodal multidisciplinary effort to optimize all important postoperative elements, i.e. the preoperative course, early mobilisation and nutrition. The theory behind the fast-track multimodal multidisciplinary effort is to reduce the patient's complication risk and optimize convalescence [3-5]. The multimodal team consists of the patient, the anaesthesiologist, the surgeon and the urology nurse. Studies have shown that the multimodal effort leads to an increased survival rate, reduces the average length of hospital stay and costs [5-7]. These results are primarily documented in connection with high risk colorectal surgery.

The positive results of the fast-track multimodal effort have been known for years; however, implementation into clinical practice is still in its start-up phase all over Europe [8,9]. Studies on urology nursing care are rare. It is claimed that best practice standards published by professional groups have so far not been able to demonstrate improvements in care. However, web-based, evidence-based care principles and updated literature related to nursing together with procedure-specific workshops, local audits and site-visits have facilitated progress for several procedures in Denmark [9]. A single study in urology care has shown that fast-track pathways combined with laparoscopic nephrectomy reduced length of stay and patients experienced less post-operative nausea and pain[10].

The primary focus of urology nursing is preoperative information and compliance, patient education, pain treatment, adjusted nutritional status and enhanced mobilisation. A fast-track patient programme in nephrectomy was implemented in our department in the middle of 2008. According to the literature there are barriers to change behaviour among healthcare professionals [9,11]. Moreover, the implementation of fast-track programmes into clinical practice has remained slow [12].

The purpose of this study is to review adherence, achievements and experiences with fast-track urology nursing care up and until 2010.

Objectives

The aim is to investigate any differences within urology nursing care indicators and patient profiles in nephrectomy pathways following introduction of fast-track programmes. Moreover, to evaluate adherence to fast-track programmes among nursing staff.

Hypothesis

- Standardised urology nursing intervention with fast-track programmes reduces perioperative complications and length of stay compared to standard care principles regarding:
 - Extended preoperative information
 - First event of passing gas
 - Full mobilisation
 - Sufficient nutrition
 - Sufficient pain relief (VAS score <3)
- The fast-track programme is successfully implemented among the staff

Literature

A literature review has been conducted and findings have been integrated in this protocol. We used the following search string; [nephrectomy],[fast track],[enhance recovery],[nutrition],[patient satisfaction],[early ambulation],[nursing]. The Mesh terms are combined with an "OR" in the basic search and with and "AND" for each of the items combined with [nephrectomy]. Finally we made a free search on Henrik Kehlet and fast track as he is one of the most productive researchers in this field. The criteria for inclusion into the study were relevance to nursing in fast-track programmes in general or specifically in urology nursing. Moreover, the level of evidence and validity of the paper

was investigated. The literature search was performed in three databases; Pubmed, Cinahl and Scopus.

Material

The study population encompasses patients with cancer referred to nephrectomy at the Department of Urology, Aarhus University Hospital, Skejby, Denmark from 2008 to 2010. Patients referred before 1 June 2009 will constitute the control group in each procedure (open, laparoscopic and Cryo procedure). Patients referred after 1 June 2009 and until 31 December 2010 entering a fast-track programme will be included consecutively in the study. Exclusion criteria are patients < 16 years and patients with advanced malignancy.

Methods

This study is a quality assurance project based on data from nursing and medical records. The study design is a non-randomised controlled trial (quasi-experimental) with differences in time and care principles. Selected indicators for nursing care will be compared before and after the intervention and analysed to detect any differences due to concept of care, procedure, gender, age and adherence to fast-track objectives among nursing staff.

Power estimation and calculation of sample size to show any expected difference between the groups are not possible as no studies, to our knowledge, have reported any results related to selected indicators and adherence to fast-track programmes among nursing staff.

Prior to the study a pilot test will be performed systematically reviewing patient records to test intervariability. The selected variables will be entered into Epidata and analysed in Stata Intercooled version 9.

Endpoints and Outcome Measures

Endpoint - Length of stay

Outcome measures; Extended preoperative information (Y/N), time to passing gas, time to defecation, time to mobilisation, time to sufficient nutrition, pain-score on the VAS scale.

Nursing staff - adherence adhered to fast-track programme (Y/ N) and extent of adherence.

Statistics

All indicators will be reported as proportions with 95% confidence intervals (CI). Bivariate analyses will be performed to investigate possible associations between variables'. T-test will be used for testing any differences between the groups regarding linear variables. Dichotomous data will be tested with a

chi-square test. Correlations will be analysed using Spearman's test when a normal distribution cannot be demonstrated. Associations will be reported as odds ratio (OR) and (IRR) with 95% CI when a time factor is present. Multivariate analyses will be performed with length of stay as dependent variable adjusting for different surgical procedures and gender. Statistical significance is defined as $p < 0.05$.

Time table

October 2009 – 1 December 2009: Finalize the research protocol for the EAUN Annual Meeting in Barcelona in 2010. Apply for permission to collect data.

January 2010 - February 2010; Pilot study including 20 patient pathways to test inter-person reliability.

February 2010 -June 2010; Create database in Epidata. Afterwards collecting data from patient record and data entering in Epidata.

June 2010 - January 2011; Ongoing data sampling and initiate analysis of data.

February 2011- June 2011: Analysis, interpretation and presentation of results in peer reviewed journals and at relevant congresses.

Budget

Table 1. Costs related to research plan for approximately 300 medical records in Euro 2008 prizes. Adherence to Fast-track Programmes within Urology Nursing Care 2008-2010.

<u>Resources in averages salary</u>			
Secretary resources; E	46.933 Euro / year	15 min /record	1960
Senior doctor resources; E	116.000 Euro / year	20 Hours	1288
Research Nurse; E	56.000 / Euro / year	30 min/ record	4133
<ul style="list-style-type: none"> • Manual collecting data from patient records • Development Database • Analyses. interpretation and reporting data 			2400
	E ¹		
Statistician consultancy;	100 Euro / Hour	5 Hours	500 E
Overhead 6 %			
618,00 E			
<u>Estimated costs</u>			

- ¹. EAUN grant will in best case be used for covering these expenses.

Ethical considerations

Data will be anonymized. Data collection methods will be approved by the national Data Protection Agency[13]. The study is not considered to cause any harm to the patient. The Central Denmark Region Committees on Biomedical and Research Ethics will be informed about the study.

Relevance for clinical practice

Multidisciplinary rehabilitation programmes are common and must be based on implementation of procedure-specific care principles. This study will provide results of fast-track programmes concerning specific procedures and can provide important knowledge on components of care to enhance rehabilitation. When implementing new programmes it is important to monitor own results with the results of others to act either locally or nationally in case of major discrepancies or when results or recent scientific data call for improvement. If the present study shows that fast-track pathways are beneficial to patients concerning length of stay, risk of complications and discomfort, it might be relevant and inspiring for urology settings in Europe to start implementing fast-track pathways or to improve the process towards evidence-based clinical practice with respect to nursing staff adherence.

Reference list

- [1] http://www.sst.dk:80/Planlaegning_og_behandling/Specialeplanlaegning/Principper_for_specialeplanlaegning. 2007.
- [2] Rud K, Jakobsen DH, Egerod I, Kehlet H. Surgical care guidelines. *Ugeskr.Laeger* 2008 Apr 28;170(18):1559-1563.
- [3] Svanfeldt M, Thorell A, Hausel J, Soop M, Rooyackers O, Nygren J, et al. Randomized clinical trial of the effect of preoperative oral carbohydrate treatment on postoperative whole-body protein and glucose kinetics. *Br.J.Surg.* 2007 Nov;94(11):1342-1350.
- [4] Kehlet H, Bundgaard-Nielsen M. Goal-directed perioperative fluid management: why, when, and how? *Anesthesiology* 2009 Mar;110(3):453-455.
- [5] Kehlet H, Wilmore DW. Evidence-based surgical care and the evolution of fast-track surgery. *Ann.Surg.* 2008 Aug;248(2):189-198.
- [6] on behalf of the ERAS Group, Nygren JMD, Ph.D., Soop MMD, Ph.D., Thorell AMD, Ph.D., Hausel JMD, Ljungqvist OMD, Ph.D. An Enhanced-Recovery Protocol Improves Outcome After Colorectal Resection Already During the First Year: A Single-Center Experience in 168 Consecutive Patients. *Diseases of the Colon & Rectum* 2009 May;52(5):978-985.

- [7] Scott F, Beech R, Smedley F, Timmis L, Stokes E, Jones P, et al. Prospective, randomized, controlled, single-blind trial of the costs and consequences of systematic nutrition team follow-up over 12 mo after percutaneous endoscopic gastrostomy. *Nutrition* 2005 Nov-Dec;21(11-12):1071-1077.
- [8] Kehlet H. Multimodal approach to postoperative recovery. *Curr.Opin.Crit.Care* 2009 August;15(4):355-358.
- [9] Kehlet H, Wilmore And DW. Surgical Care - How can new evidence be applied to clinical practice? *Colorectal Dis.* 2009 Oct 22.
- [10] Jakobsen MS, Lund L, Jønler M, Dich JO. Patienten i centrum ved accelereret laparoskopisk nefrektomi. *Sygeplejersken* 2007;107(24):54-60.
- [11] Cabana MD, Rand CS, Powe NR, Wu AW, Wilson MH, Abboud PA, et al. Why don't physicians follow clinical practice guidelines? A framework for improvement. *JAMA* 1999 Oct 20;282(15):1458-1465.
- [12] Kehlet H. Multimodal approach to postoperative recovery. *Curr.Opin.Crit.Care* 2009 Aug;15(4):355-358.
- [13] Datatilsynet. 2009; Available at: <http://www.datatilsynet.dk/english/>. Accessed 2009.