

Impact of an Enhanced Recovery After Surgery (ERAS) program on the quality of care and emotional well-being of kidney cancer patients undergoing a nephrectomy

Caterina Marcangione, Simon Tanguay, Maurice Anidjar, Armen Aprikian, Wassim Kassouf, Franck Bladou

CQI Research Grant 2014

INTRODUCTION

- In 2015, 6,200 Canadians were diagnosed with - and 1,800 died from - kidney cancer. Surgery, either the removal of the entire kidney (radical nephrectomy) or a portion of the kidney where the tumour is located (partial nephrectomy), represents the standard treatment for non metastatic kidney cancer.
- Although improvements to surgical techniques, such as minimally invasive robotic or laparoscopic surgery, and perioperative management, have improved patient recovery, 1 out of 4 patients will still experience a complication after surgery. Complications include: minor pain, delayed bowel movement, skin infection or less frequent cases of life-threatening thromboembolism, bleeding, or sepsis.
- Studies have shown that implementing an Enhanced Recovery After Surgery (ERAS) program, a modified care pathway before, during, and after surgery, can effectively increase quality of life (QOL) by reducing complications and anxiety, as well as increasing overall patient satisfaction, leading to reduced length of hospital stay (LOS) and total costs.

OBJECTIVES

To assess the emotional well-being (anxiety, depression, and satisfaction) and QOL of kidney cancer patients before and after surgery, as well as perioperative patient outcomes, such as complication, LOS, and blood loss

Phase 1 study: before implementation of an ERAS program at the JGH (completed)

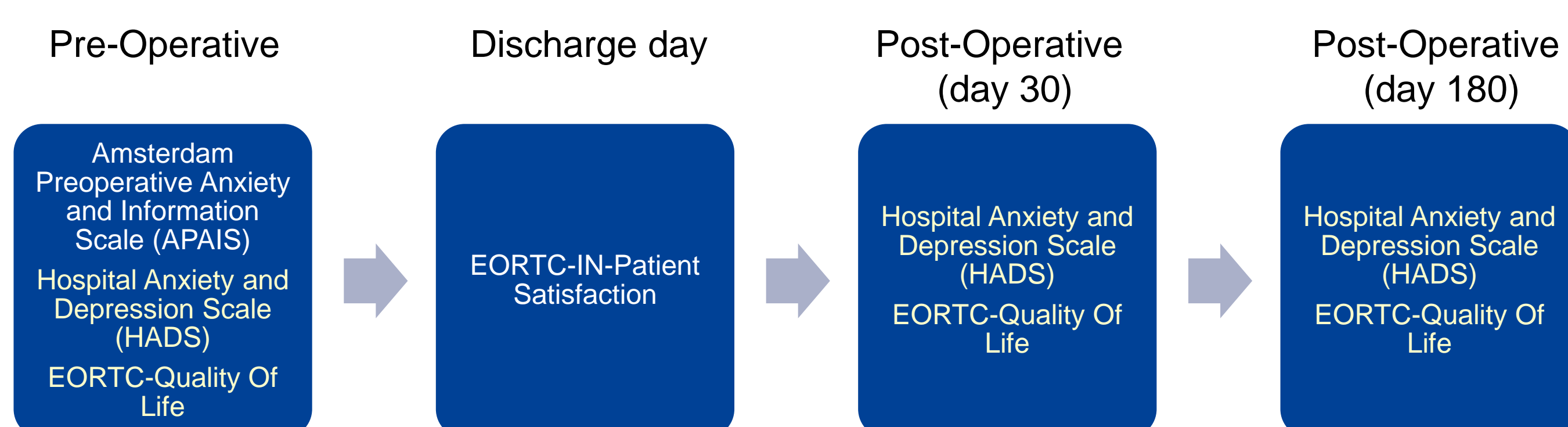
Phase 2 study: after implementation of an ERAS program at the JGH & MUHC (in process)

To assess the impact of open vs minimally invasive surgical procedures on the patient's QOL and satisfaction, as well as post-operative outcomes after kidney cancer surgery

Comparisons will be made between data collected at the JGH (Phase 1 and Phase 2 studies) to determine the impact of an ERAS program on the emotional well-being and QOL of kidney cancer patients at the JGH

METHODS

Procedure: Quality of care and emotional well-being assessed via standardized questionnaires at 4 different time points:



RESULTS Phase 1 study (JGH only): Before implementation of ERAS

Overview of Surgery and Outcomes

Participants: 43 patients (24 men & 19 women); age 58.98 ± 11.53 years old
Type: 30 partial + 13 radical nephrectomies [right kidney=17, left kidney=26]
Approach: 2 open procedures, 41 minimally invasive (7 lap, 32 robotic, 2 conversions to open)
Duration (mean±SD, median): 3.49 ± 1.08 hours, (3.30 hours)
Blood loss (mean±SD, median): 290.95 ± 416.89 mL, (200.00 mL)
Length of hospital stay (mean±SD, median): 2.12 ± 1.68 days, (2 days)
Early Post-Operative complications (within 30 days post-op) – 16.28% (7/43):
 Minor – 13.95% (6/43): wound infection (2), deep vein thrombosis (1), small bowel obstruction (1), peripheral edema (1), discharged with foley (1)
 Major – 2.33% (1/43): inferior epigastric bleeding
Late Post-Operative complications (after 30 days post-op) – 4.65% (2/43): functional hemiparesis

APAIS: High Levels of Anxiety Pre-Operatively

Anxiety related to:	Anesthesia	Surgery	Need for Information relative to surgery
Low (score 2-4)	71.43%	40.47%	Low – “Evaluators” (score 2-4) 47.62%
High (score 5-10)	28.57%	59.52%	Average (score 5-7) 33.33%
			High – “Monitors” (score 8-10) 9.52%

Anxiety & Depression, Quality of Life: Variability Across Time

	Pre-Operative (n=43)	Post-Operative (Day 30) (n=43)	Post-Operative (Day 180) (n=39)
HADS - Anxiety	7.1±3.62 (7)	4.56±4.1 (4)	4.21±3.76 (3)
HADS - Depression	4.21±3.92 (3)	3.7±4.43 (1)	3.10±3.24 (2)

Mean ± SD (Median) – Normal=0-7, mild = 8-10, moderate = 11-14, severe = 15-21

EORTC Quality of Life-C30	Pre-operative (n=43)	Post-Operative (Day 30) (n=43)	Post-Operative (Day 180) (n=39)
Global health status/QoL	69.37±22.35 (65)	71.90±21.80 (80)	75.23±19.49 (75)
Functional scales			
physical	84.34±20.53 (93.33)	77.98±21.80 (80)	81.98±19.04 (86.67)
role	81.01±29.00 (100)	70.16±28.77 (83.33)	85.59±21.21 (100)
emotional	71.90±20.09 (75)	80.14±19.17 (83.33)	82.95±18.18 (83.33)
cognitive	86.82±18.39 (100)	88.76±13.47 (100)	87.84±16.03 (100)
social	84.11±24.65 (100)	81.00±19.78 (83.33)	86.94±21.92 (100)
Symptom scale/items			
fatigue	30.88±29.95 (22.22)	33.59±29.25 (33.33)	27.33±22.77 (22.22)
nausea & vomiting	2.71±7.21 (0)	2.71±10.87 (0)	2.70±10.03 (0)
pain	21.03±24.98 (16.67)	27.13±27.70 (16.67)	17.12±23.73 (16.67)
dyspnoea	11.90±19.23 (0)	20.16±25.34 (0)	18.92±22.96 (0)
insomnia	30.08±32.32 (33.33)	31.78±32.49 (33.33)	19.82±26.60 (0)
appetite loss	13.49±27.60 (0)	12.40±26.25 (0)	8.11±18.27 (0)
constipation	16.67±25.77 (0)	20.16±29.22 (0)	12.61±26.47 (0)
diarrhoea	7.94±16.15 (0)	14.73±22.19 (0)	11.71±21.11 (0)
financial difficulties	9.13±20.23 (0)	15.50±29.41 (0)	9.01±20.26 (0)

Higher score for Global Health Status = High Quality of Life Higher score for Functional Scales = Higher healthy level of functioning
 Higher score for Symptom Scale/Item = High level of symptomatology/problems – Mean ± SD (Median)

Post-operative Patient Satisfaction

	Doctors	Nurses
Interpersonal skills	85.32±19.20 (91.67)	74.60±24.98 (75)
Technical skills	88.69±15.81 (100)	77.18±19.66 (75)
Information provision	80.75±21.74 (87.50)	66.67±27.67 (75)
Availability	74.11±27.52 (75)	71.43±24.43 (75)
Other hospital personnel kindness, helpfulness, information giving		70.24±23.36 (75)
Waiting time (performing medical tests/treatments, receiving results)		72.87±23.20 (75)
Access		62.20±24.15 (62.50)
Exchange of information		68.45±24.11 (75)
Comfort/cleanliness		66.67±25.10 (75)
General satisfaction		76.79±21.66 (75)

Higher score score represents a higher level of satisfaction with care – Mean ± SD (Median)

PATIENT IMPACT Phase 1 study (JGH only): Before ERAS

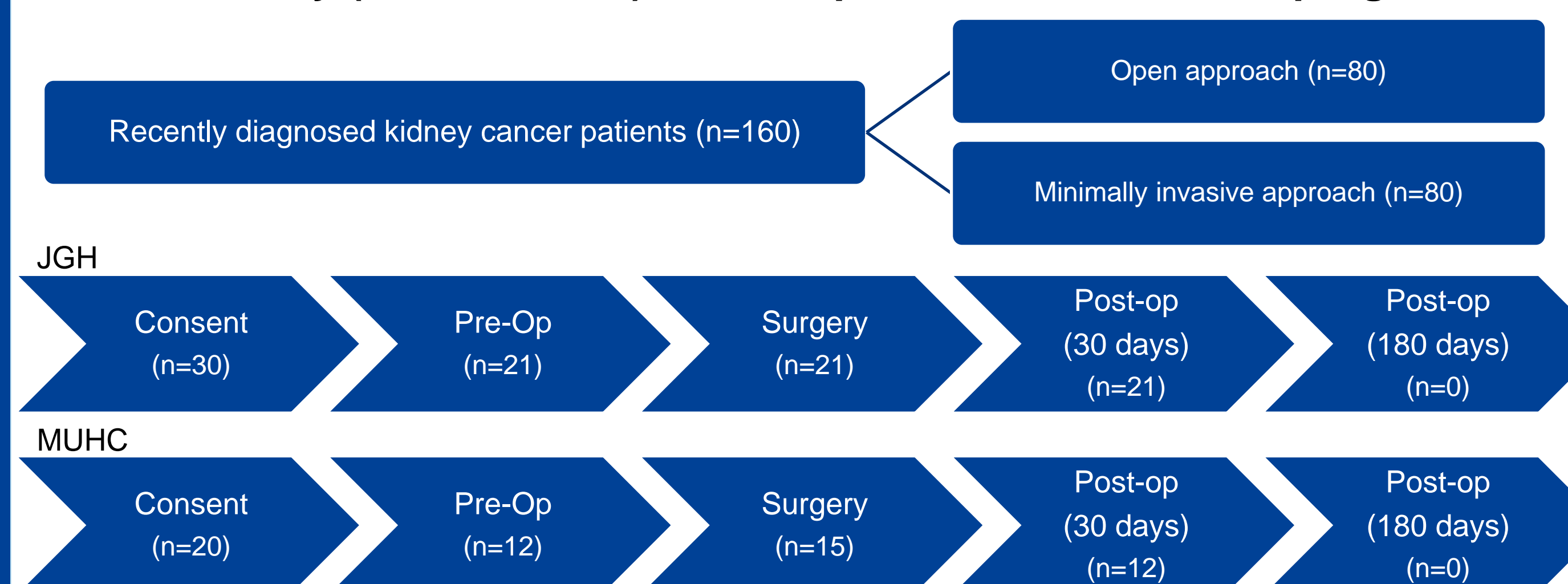
- Pre-operatively, the majority of the total anxiety reported can be attributed to anxiety related to the surgery rather than the anesthesia.
- Global health status and quality of life increased post-operatively, especially at the 180-day post-operative time point.
- Overall, patients were found to be more anxious rather than depressed and have slightly lower emotional functioning pre-operatively than post-operatively.
- Insomnia was found to be greatest at the pre-operative and 30 day post-operative time points. Fatigue and pain were slightly increased at the 30 day post-operative time point relative to their pre-operative and 180 day post-operative levels. Gastro-intestinal issues (constipation and diarrhoea) were slightly higher at the 30 day post-operative time point.
- Patient satisfaction with care provided by doctors ranked highest, followed by care provided by nurses and other services.

CONCLUSION Phase 1 study (JGH only): Before ERAS

The present study provides an overview of the current quality of care and emotional well being of patients undergoing radical/partial nephrectomy at the JGH. It offers a baseline measure to compare the effects of implementing an ERAS program on the patient's experience at the JGH.

Overall, the patient population at the JGH show greater levels of anxiety related to their surgery prior to their surgery. The APAIS questionnaire can be used as a screening tool to flag patients that score much higher than the norm on anxiety related to the surgery or anesthesia and need for information. Providing the patients that are anxious prior to their surgery with more information may lead to a decrease in their anxiety and better prepare them for their surgery.

Phase 2 study (JGH & MUHC): After implementation of ERAS program



Comparisons will be made between:

- the impact of open vs minimally invasive surgical procedures on the patient's QOL and satisfaction. Post-operative outcomes after surgery will also be assessed.
- data collected at the JGH (Phase 1 & 2 studies) to determine the impact of an ERAS program on the emotional well-being and QOL of kidney cancer patients at the JGH.

TRANSLATION ACROSS THE RCN

To identify areas that may need improvement to guide the standardization of optimal care within the RCN institutions.