“One Year Follow-Up of the Efficacy of Pre-Habilitation in Radical Cystectomy Pathways”

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Patient Education / Information – group - EAU
Member of National Nursing Research Council
National Board of Health – Urology Cancer
For the tenth year running, Aarhus University Hospital is Denmark’s best hospital. The independent specialist newspaper on healthcare sector news “Dagens Medicin” has appointed Aarhus University Hospital as the best in their competition to become Denmark’s best hospital.

Objectives

- To empower nursing research exemplified by a recent study at MSKCC /SKI & Aarhus University Hospital
- To update the audience on current practice evidence in ERAS pathways with regards to major abdominal oncology surgery
- Discuss nursing research and challenges
  How can we share experiences across the pond… e.g. international fellowships, cooperate professionally (studies, conferences etc.), educational initiatives
Overall aims of Enhanced Recovery after Surgery - ERAS

Minimize:
- Surgical stress response (metabolic /hormonal cascade)
- Postoperative morbidity

Improve:
- PROM's
- Clinical & oncological outcome

What is ERAS?

The ERAS Society, a non-profit medical organization, was formed in 2001 with the aim to establish evidence-based protocols as best practice standards in perioperative care.

Its mission is to develop perioperative care and improve recovery through research, education, audit, and implementation of evidence-based best practice.

The ERAS Society was constituted in 2001 – Urology Chapter was officially formed at the 2016 World Congress in Lisbon.

The ERAS Society has published a wide range of publications regarding protocols and guidelines for enhanced recovery after surgery.

Nursing is a part of the multi-disciplinary group in ERAS

Working with an ERAS program is a multidisciplinary challenge to improve:

- The standard of care
- Knowledge of the research evidence and care principles
- Need of organizational changes required to make ERAS programs function in clinical practice.

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ERAS ... The Basic Question...

Why is the patient still in hospital today?

Henrik Kehlet 2015
Why is the patient still in the hospital today (early recovery=Length of stay)

- The idea of ERAS Pathways initiated the focus of early recovery (LOS)and is today based on level 1 and level 2 evidence (multi-professional studies)
- Positive impact on postoperative functional capacity, recovery, self-efficacy & HRQoL (but for how long??)
- Prehabilitation facilitate the return / maintain baseline condition ? leading to evidence supporting an extended ERAS pathway....

Does it work in practice ?

One Year Follow-Up of the Efficacy of Pre-Habilitation in Radical Cystectomy Pathways"

Hypotheses
Increasing age increase the risk of cancer (BC)

Poor physical performance and nutritional risk increase the risk of:

- Postoperative complications (>60%)
- Mortality (3%)
- Loss of muscle mass and strength (20%)
- Demineralization of bone (sarcopenia)
- Loss of aerobic capacity, vasomotor stability
- Changes in respiratory function

Candidates for ERAS - RC because of muscle invasive bladder cancer

ERAS RC in Denmark – Europe 2005

Extended ERAS program? Evidence?

Join the tap
- Preoperative diet
- Physical activity
- Smoking cessation
- Psychological support
- Ablation
- Antibiotics
- Anesthesia
- Fluid therapy

Enhanced Recovery (19 to 7 days)

ERAS in “Urology Cancer Care”

Components of interventional multidisciplinary recovery

ERAS RC in Denmark – Europe 2005

Extended ERAS program? Evidence?

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Enhanced Recovery (19 to 7 days)
Efficacy of a multi-professional rehabilitation programme in radical cystectomy pathways: a prospective randomised controlled trial. Aarhus University & Centre of Research in Rehabilitation 2011-2014

www.ClinicalTrial.gov (NCT 01329107)

Interaction Between Nutrient and Physical Exercises - Use It or Lose It....

Changes in protein synthesis and muscle mass, strength or function

Intervention pre-operatively

- Education (nutritional /physical axis)- protein loading min 1.2 g/kg/day
- 1.5 H instruction by a physiotherapist incl follow-up
- Daily training program consisting of 10 figures with xx repetition - Duration: 30 min/day – step-trainer handled out
- Outdoor activity: 30 min walk / dance/ swimming / cycling / riding / gardening
- Preoperative stoma-education , training kit for practice at home

Learn smart..... & Eat smart

Protein

Insulin and protein (amino acids) are anabolic
Short-term p-booster before major surgery (ESPEN-guideline)

Personal Log-book

- Physical data
- Nutrition
- Stoma self-efficacy

Methods: The Urostomy Education Scale (UES)

Self-efficacy

Intervention post-operatively

- Education (nutritional/physical axis)
- Everyday progressive physical and nutritional goals
- Post-operative stoma-education: everyday goals to improve self-efficacy measured by the Urostomy Stoma Education Scale
- Exact set of discharge criteria (same for all patients)
**Results**

Significantly improved muscle power and maintained nutritional status ahead of surgery

Significantly better mobilized (functional/physical activity)

Significantly reduced the time to independently perform ADL

Significantly improved HRQoL Parameters in 50% of ITEMS EORTC (QLQ C30 + BLS24 7 BLM30

Significantly improved stoma self-care

Improved patient-satisfaction (EORTC INPATSAT-32)

No difference in LOS

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**Efficacy of preoperative urostomy education on self-care efficacy after Radical Cystectomy** secondary outcome of a prospective randomized controlled trial.


Exercise-based prehabilitation is feasible and effective in radical cystectomy pathways – secondary results from a randomized controlled trial.


Efficacy of a multiprofessional rehabilitation programme in radical cystectomy pathways: a prospective randomized controlled trial.


Multidisciplinary rehabilitation can impact on health-related quality of life and functional outcomes in radical cystectomy: reported outcomes of a randomized controlled trial.

Hypotheses

Prehabilitation

Surgery

Functional Recovery

No Prehabilitation

Preoperative Period

Postoperative Period


Prehabilitation: Nutrition - fasting
- Physical exercise
- Stoma care

Standard ERAS in Denmark 2018

Prehabilitation:
- Nutrition: Fasting
- Physical exercise
- Stoma care

Enhanced recovery

Late Prep

Preparation for discharge
- Physical exercise
- Optimal weight
- Optimal nutrition
- No less than 4 - 6 h fasting
- Minimal surgery: Mini-lap procedure / Robot etc.
- Optimize anesthetics
- Antibiotics
- Thrombo prophylaxis
- Oxygen therapy, Fluid therapy, Pain relief regime

Revision of care:
- Sepona; catheter, drain, stents, pain relief etc

Early oral nutrition
Early Ambulation (training)
Adjust to "frail" patient

Prehabilitation:
- Nutrition: Pre-loading
- Physical exercises
- Stoma care
- Sexual health (RCT)*
- Smoking / Alcohol

* Studies to be launched in 2018

Efficacy of pre and post- rehabilitation in RC pathways: One year follow-up
B. Thoft Jensen et al

Muscle capacity / functional capacity

Nutritional Status

Efficiency of pre and post- rehabilitation in RC pathways: One year follow-up
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Stoma self-efficacy – one year follow up

Level of Stoma self-care measured on the Urostomy Education Scale

Day 35
Day 120
Day 365

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Enhanced recovery

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Efficacy of pre and post habilitation in RC pathways. One year follow-up.
B. Thoft Jensen et al. EAU, Copenhagen March 2018

### Results: Changes in Nutritional Status and Physical Functioning

<table>
<thead>
<tr>
<th>Measure</th>
<th>Baseline (2 weeks pre-surgery) Mean (95% CI)</th>
<th>Admission (day of surgery) Mean (95% CI)</th>
<th>Change from baseline to admission</th>
<th>Follow Up (6 weeks post-surgery) Mean (95% CI)</th>
<th>Change from baseline to follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand grip strength, % of ASPV</td>
<td>83.9 (77.0−90.8)</td>
<td>90.7 (84.5−101.0)</td>
<td>6.8</td>
<td>86.1 (75.0−97.4)</td>
<td>-6.4</td>
</tr>
<tr>
<td>Walking distance, % of ASPV</td>
<td>81.7 (76.3−95.4)</td>
<td>N/A</td>
<td>N/A</td>
<td>75.6 (65.0−86.1)</td>
<td>12.2</td>
</tr>
</tbody>
</table>

*ASPV = Age standardized predicted values

### Adherence

<table>
<thead>
<tr>
<th>Measure</th>
<th>Odds ratio (95% CI)</th>
<th>P-value</th>
<th>Adjusted odds ratio (95% CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neoadjuvant chemotherapy</td>
<td>No *</td>
<td></td>
<td>Yes 0.21 (0.04−0.9)</td>
<td>0.04</td>
</tr>
<tr>
<td>ASA</td>
<td>&lt;3 *</td>
<td></td>
<td>≥3 0.15 (0.01−1.27)</td>
<td>0.08</td>
</tr>
<tr>
<td>Karnofsky Performance</td>
<td>≥80% *</td>
<td></td>
<td>&lt;80 4.5 (0.92−21.9)</td>
<td>0.06</td>
</tr>
<tr>
<td>Age</td>
<td>&lt;70 *</td>
<td></td>
<td>≥70 3 (0.67−1.3)</td>
<td>0.15</td>
</tr>
<tr>
<td>Nutritional risk</td>
<td>&lt;3 *</td>
<td></td>
<td>≥3 0.33 (0.06−1.6)</td>
<td>0.17</td>
</tr>
</tbody>
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- Its mission is to develop perioperative care and improve recovery through research, education, audit, and implementation of evidence-based best practice.

Who’s gaining?

- The intention is to address and integrate health prevention and promotion in the patient pathways.

- Support the work towards better health gain by integrating Health Promotion into the organizational structure and culture of the hospitals and health services.

ERAS success depends on 4 components...

- Personal clinical experience of the nurse/team/surgeon
- Existing resources & priorities (healthcare system?)
- Willingness in the organization to change agenda...
- Patient perspective, patient wishes and ideas
- Results of science

Conclusion:

Prehabilitation is evidence based and improve the transition into the survival-phase

- Nutrition
- Physical program
- Pre-op Stoma education
- Smoking Alcohol cessation
- Patient involvement*
- Sexual health*

B. Thoft Jensen et al., Current Opinion in Urology; 28(2) May 2018
FOREIGNERS, PLEASE DON'T LEAVE US ALONE WITH THE DANES!

Thank you 😊