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**Can postoperative Nutritional Therapy influence the Convalescent period for patients who have undergone Radical Cystectomy.**

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## **Introduction**

As a team, we have experienced that patients who have undergone radical cystectomy, have a very long convalescent period after the operation. Patients are informed that they can expect to regain their normal functional level three months after the operation. This information is based on what has been experienced in clinical practice.

An investigation has shown that the catabolic loss which happens in connection with radical cystectomy is not re-established six months after the operation. Plans for early nutritional support could be of help in the re-establishment of the body composition, with following clinical advantages. (Mathur, S 2007, BJU. No 101).

A study in the clinic shows that in the period 1.11.2008 – 31.10.2009, 71 patients had a radical cystectomy operation due to bladder cancer. Patients with other diagnoses were not included in the study. The average length of stay in hospital was 9 days. 33 of these patients were re-admitted within the first six months because of infections, weight loss, constipation, insufficient emptying of the urinary tract, obstruction, and acidosis.

The patients' intake of nourishment is insufficient during their stay in hospital as well as in the period afterwards.

At the moment the patients have a nasogastric tube, typically until the 3<sup>rd</sup> – 5<sup>th</sup> day after the operation and there are restrictions in relation to food and liquid intake because of the risks connected with the operation, such as anastomosis and postoperative intestine paralysis. The patients do not receive any therapy regarding nutrition from any set plan, and their nutritional requirements are not met during the postoperative phase. It is therefore a relevant subject on which to focus, as nutrition has an important effect on postoperative complications, and the following length of convalescence. (Thurairaja, R. 2005. BJU no 95)(Weimann, A. 2006. Clinical Nutrition no. 25).

## **Summary**

The aim of the project is to investigate whether patients, who have had a radical cystectomy, would benefit from a nutritional plan, made up of oral feeding, enteral nutrition via a nasogastric tube (EN) and parenteral nutrition (PN), starting from the first 24 hours after the operation and lasting until discharge from hospital. This is to ensure that the patient receives a minimum of 75% of the daily nutritional requirements. Furthermore the plan would also include giving the patient systematic instructions regarding nutrition before discharge from hospital, with a view to reducing the length of the convalescence period after radical cystectomy.

## **Objectives**

The overall objective of the project is to ensure that 75% of the patient's total energy and protein requirements are met starting on the first postoperative day, and that the patient is given instructions regarding nutrition after hospitalization.

The patient's period of convalescence after radical cystectomy is expected to be shorter when these measures are used, compared with patients treated according to current practice regarding nutritional therapy.

## **Literature Review**

When seeking information in international databases, it becomes apparent that material concerning nutrition, radical cystectomy and convalescence is very limited. Much of the knowledge concerning nutrition and radical cystectomy has its starting point in abdominal surgery. Nutritional plans for patients undergoing cystectomy are in many cases based on surgical and clinical experience and not on evidence based knowledge.

This lack of evidence concerning the nutritional area in relation to patients who have undergone radical cystectomy is also emphasised in EAUN's guidelines for incontinent and continent urinary tracts. (Geng, V. et al. 2009. EAUN)Geng. V. et al. 2010. EAUN)

The way in which patients who have undergone cystectomy are treated after the operation regarding nutrition, has been investigated in England by means of a questionnaire. The investigation was based on 277 completed questionnaires sent to urologists in England. The investigation showed amongst other things, that postoperative nutritional plans vary greatly, but mostly (60%) followed traditional strategy with nothing per os until there are signs of the re-establishment of bowel functions. However it was also shown that fewer (46%) found this to be the best way of dealing with nutrition for patients who have had this operation. 30% of the respondents replied that their nutritional regime was based on published evidence, the rest was based on personal experience. 52% of the respondents were of the opinion that there is a need for more investigations in this area, so that the postoperative nutritional regime can be guided by evidence. (Barrass, B:J:R: Urol. Int. 2006. No 77)

The postoperative course for patients who have had a cystectomy operation is complicated and is influenced by many factors. In the same way the patients' postoperative condition regarding nutrition is also influenced by many factors, such as biochemical status, pain management, level of mobilization, bowel function, etc. (Maffezzini M 2008, Surg. Onc.)

In a multimodal investigation patients having had a cystectomy were divided into three groups, the first two groups were given parenteral nutrition, and the

third group was fed per os. One of the results of the investigation showed that all groups had a negative nitrogen balance, but that this was less negative in the case of patients, who had parenteral nutrition. The patients fed per os, did not achieve a protein intake on the same level as the patients receiving parenteral nutrition before the 5<sup>th</sup> day after the operation. However the authors of the article point out that the patients who had nutrition per os, had bowel movements earlier than the other groups, and it might therefore be possible to feed this group more aggressively with protein per os. (Brodner, kG. Anesth. Analg. 201, no. 92).

The ESPEN guidelines recommend a combination of EN and PN, in cases where it is not possible to cover the patients nutritional requirements via the enteral route. (Weimann, A. 2006. Clinical Nutrition no 25)

## **Relevance to urology nursing**

As described above, knowledge in the area dealing with the connection between nutrition and the convalescence period for patients who have had a cystetomi operation is insufficient. Much practice is based on clinical experience as opposed to evidence based knowledge. The aim of the project is to contribute to the development of knowledge in the area, as well as to improve the course of treatment for the patient. It is one of the projects theses that an optimization of the nutritional state can contribute to a shorter convalescence period for the patient.

## **Methodology**

The project is an interventional study. Quantitative data from the intervention group will be compared with a control group made up of patients treated according to current practice. The design of the project has been chosen as we wished to investigate the connection between nutritional intake during hospitalization and the patient's experience of the convalescent period. In this way we think it possible to measure the effect of an intervention concerning nutrition, in relation to the patients' experience of the convalescence period. The following questionnaire will be used: EORCT QLQ-C30

The project is limited regarding intervention by restrictions in connection with maximum intake per os, because of risks and complications connected with urinary tract and bowel surgery. The size of the patient group is limited by the number of possible participants. The target group consists of patients undergoing radical cystectomy due to cancer vesicae.

## ***Inclusion***

Diagnosis cancer vesicae

Must be able to speak and understand Danish.

Must be reasonably capable and thus be able to give consent following information

## ***Exclusion***

Earlier radiation or chemotherapy for cancer vesicae

Patients who have had a cystectomy operation for other reasons than bladder cancer

Patients who have had ureterocutanostomi applied

The patients in both groups have to fill in the EORTCT QLQ-C30 form before the operation, be screened for nutrition and registered regarding diet during the whole period of hospitalization, according to regional guidelines. The EORTCT QLQ-C30 forms must be completed again 6 and 12 weeks after the operation.

Patients in the intervention group will, during hospitalization, receive nutritional therapy in the form of both EN and PN, as a supplement to oral intake. The aim is that they have 75% of their nutritional needs covered. Nutritional therapy will be concluded when the patient is discharged from hospital. Before discharge the patient will be given information regarding diet. At the conclusion of the project the project data will be analyzed in order to find out whether the intervention has had an effect on the length of convalescence.

There will be 20 patients in the control group and 20 patients in the intervention group. The control group and the intervention group will be registered in separate periods, and the project will therefore not be carried out as a random investigation.

## ***Feasibility***

The project will commence in April 2011 with the collection of data from the control group.

In October 2011 collection of data from the intervention group will start.

Collection of data is expected to be completed in June 2012.

Analysis of data is expected to be completed in December 2012.

	Jan.	febr.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>2011</b>												
Protocol	X	X	X	X								
Control group				X	X	X	X	X	X	X		
Intervention group										X	X	X
<b>2012</b>												
Intervention group	X	X	X	X	X	X						
Analysis of data									X	X	X	X
Result of project												X

During the project period foundation funds received will be used to cover one project nurse's salary. The project nurse is responsible for collection of data, practical work in the intervention group, information to the project participants and staff, as well as analysis of collected data.

Need for assistance in connection with statistical treatment of data is expected. Apart from funds from EAUN, funds from The Nurse's Organisation, and from the hospital in question's rehabilitation funds will be applied for.

## Conclusion

Radical cystectomy is one of the biggest operations in the field of urology as it involves several organ systems. As a result of this patients have a long period of convalescence. There is therefore a great challenge in relation to urological nursing.

At the same time as the actual course of the operation, the patients have to relate to the fact that there will be a lifelong change in their bodily function due to the new urinary tract. Because of this they will be permanently in touch with the urological department.

Research in the area of nutrition relating to radical cystectomy patients and convalescence is limited. The project will therefore be able to contribute with pioneering new knowledge in this field. The intention of this project is to make the best possible use of nursing competence in nutritional therapy and patient information, in order to improve this group of patient's convalescent period and their quality of life after an operation for bladder cancer, and at the same time create useful material for use in this highly specialized part of urological nursing.

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## Conflicts of interest

None.