

Canterbury

District Health Board

Te Poari Hauora o Waitaha

Intravesical
Bladder Instillations
Self Learning
Package
Urology unit

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Introduction

Welcome to the intravesical cytotoxic drug self learning package. This package is offered to RN/ENs working within the CDHB involved in looking after patients who are required to have cytotoxic bladder instillations.

Cytotoxic drugs are referred to as drugs that have the ability to kill or destroy the growth of living cells, they have the following potential:

- Carcinogenic- they have the potential to cause the development of cancer.
- Teratogenic – they interrupt with or alter the normal growth of foetus.
- Mutagenic- they increase the rate of mutation of cells or organism.

Direct contact with cytotoxic drugs may cause irritation to skin, eyes, and mucous membranes therefore exposure to these drugs should be minimised. This self learning package is to ensure safe practice for CDHB nurses

It is expected that the health care professional will have up to date knowledge of the anatomy of the bladder.

Other associated documents include:

- CDHB manual volume 12, cytotoxic section.
- The CDHB cytotoxic and biotherapies website.

Nurses who are pregnant or trying to conceive should not administer or handle cytotoxic medication and waste products.

Learning Outcomes

On completion of this self learning package the nurse will be able to:

- Describe relevant anatomy of the bladder.
- Describe non-invasive bladder cancer.
- Describe how the intravesical chemotherapy acts on the bladder cancer.
- Discuss the CDHB policy for the administration of intravesical chemotherapy.
- Summarise the handling of cytotoxic waste.
- Outline spill management.

Instructions

To successfully complete this package the registered nurse must read this package and associated documents and complete the assessment and achieve 100%. Once the package is completed please copy the assessment and send to the Urology CNS to be marked. On completion of this package, 2 hours of professional development will be entered on the training and competency database.

It is recommended that the nurse will maintain competency in the safe handling of cytotoxic drugs.

Bladder cancer

In 2009 there were 361 new bladder cancer registrations which accounts for 2% of all the cancer cases. Bladder cancer is a chronic illness and requires surveillance (MOH 2009). It is the 2nd most common cancer of the genitourinary tract. It is the 4th most common malignancy in males and 8th most common in females.

Pathology

A bladder tumour develops in the epithelium lining of the bladder and quite often starts as papillary growth.

Transitional cell carcinoma: It's the most common and starts in the layer of the cells that form the lining of the bladder.

Squamous cell carcinoma: Represent approximately 5% of all bladder cancer and starts in one of the types of cells in the bladder lining.

Adenocarcinoma: Represent approximately 2% of all bladder cancer and originates from the glandular cells.

The causes of bladder cancer are not well known however the following factors are thought to increase the risk-

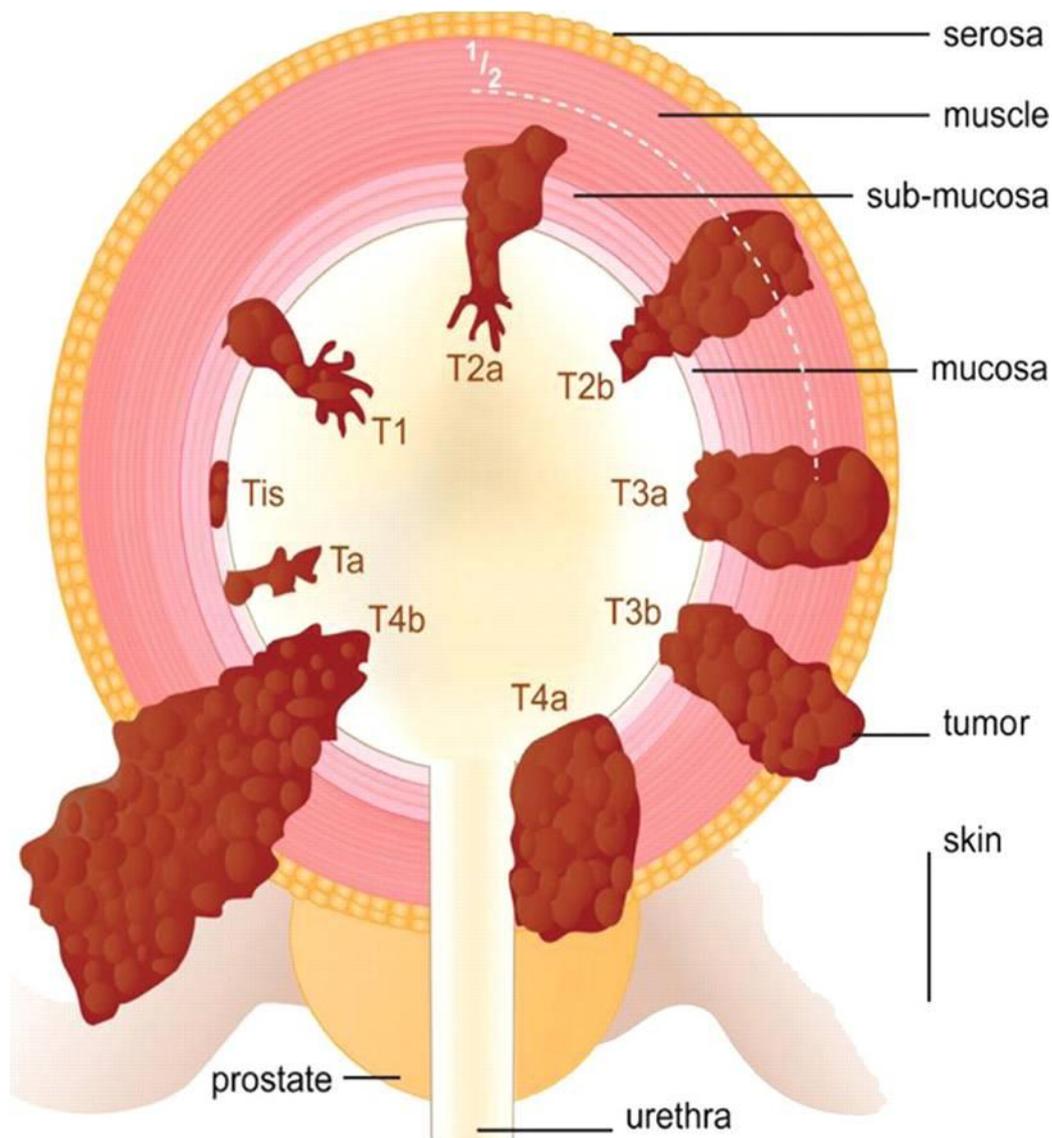
- Smoking –beta-naphthylamines in cigarettes
- Chemical exposure (chemical used in the manufacture of rubber, dye, insecticides, and leather)
- Diet
- Bladder infection
- Long term infections with tropical diseases e.g. Schistosomiasis
- Family history
- Epithelial trauma (long term catheters).

Bladder Tumour Staging

A commonly used staging system for bladder cancer is called the **TNM** system:

- **T** is the size of the tumour (cancer).
- **N** is whether it has spread to the nearby lymph nodes (sometimes called glands).
- **M** is whether the cancer has spread to other parts of the body (metastases).

T primary tumour	
TX	Primary tumour cannot be assessed
T0	No evidence of primary tumour
Ta	Non –invasive capillary carcinoma / only in the inner surface of the bladder
TIS	Carcinoma in situ “flat tumour”
T1	Tumour invades the subepithelial connective tissue
T2	Tumour grown into muscle layer of bladder T2a -Tumour invades superficial muscle(inner half) T2b- tumour invades the deep muscle (outer half)
T3	Tumour grown through bladder muscle T3a- microscopically T3b- macroscopically (extravesical mass)
T4	Tumour spread to the surrounding organs e.g. prostate, bowel T4a -tumour invades prostate , uterus, or vagina T4b-tumour invades pelvic wall or abdominal wall
N lymph nodes	
NX	Regional tumour cannot be assessed
N0	No regional lymph node metastasis
N1	Metastasis in a single lymph node in the true pelvis (hypogastric, obturator , external iliac, or presacral)
N2	Metastasis in multiple lymph nodes in the true pelvis
N3	Metastasis in a common ileac lymph node(S)
M distant metastasis	
MX	Distant metastasis cannot be assessed
M0	No distant metastasis
M1	Distant metastasis



Bladder tumour staging

Tumour grading

Grading refers to the how the cancer cells appear on the microscope. Grade one is one factor to predict how likely the cancer is to recur after treatment.

Grade one - Papillary urothelial neoplasm of low malignant potential. The cancer cells tend to grow slowly and look quite similar to normal cells (i.e. are 'well differentiated'). They are less likely to spread than grade two or grade three cancers.

Grade two - Low grade papillary urothelial cancer. The cancer cells look more abnormal and grow slightly more quickly than grade one.

Grade three- High grade papillary carcinoma. The cancer cells tend to grow more quickly, look very abnormal (are 'poorly differentiated') and are more likely to spread.

Treatment

The primary treatment for bladder cancer is transurethral resection of bladder tumour (TURBT). The procedure is often followed by an immediate single instillation of cytotoxic drugs into the bladder.

The drugs commonly used in New Zealand and Australia are Epirubicin, Mitomycin C and Doxorubicin.

Indications for treatment

Treatment of bladder cancer is dependent on the stage of disease. TURBT is indicated for all patients with non-muscle invasive bladder cancer.

Low risk diseases – a single dose instillation of chemotherapy is recommended immediately following TURBT.

Aim of treatment:

- To eradicate the primary lesion.
- To prevent superficial relapse.
- To prevent progression to muscle invasion and a less curable form of disease.

The chemotherapeutic effect of the cytotoxic drugs is both at the resection site and on the urothelial wall. It will also destroy any circulating tumour cells that could implant in the bladder.

Intravesical Bladder Instillations

Procedure for the installation of a single post operative dose of epirubicin

This may be administered immediately at completion of surgery and then completed in recovery. Alternately it can be done in the post-operative ward by a Registered nurse who has completed this learning package.

Equipment

- Personal protective equipment for the nurse: impervious protective gown, sterile gloves, eye protection, mask.
- Medication as charted in prefilled syringe.
- Flip flow valve.
- Two cytotoxic rubbish bags.
- Protective sheets or plastic draw sheets.
- Catheterisation pack (if patient does not have a catheter).

- Bag ties and cytotoxic labels.
- Cytotoxic spill to be available at all times.
- Chlohexidine.

Procedure

Patient will have a catheter post operatively.

	Procedure	Rationale
Cytotoxic instillation		
1	Gain informed consent. Outline the risks, side effects and complications of cytotoxic medication.	To make sure patient fully understands the procedure and the side effects.
2	Confirm patient identity as per CDHB protocol.	Two nurses should check identity and prescription prior to administration of chemotherapy.
3	Check current medications and allergy status.	To identify any medication allergy
4	Assess pain before giving the medication.	Pain could be due to bladder spasms and this may cause catheter to leak.
5	Assess the urine colour and consistency.	Treatment should not be given when there is moderate or heavy haematuria. Treatment may be delayed. Consult Urologist if unsure.
6	Assemble equipment on the trolley.	
7	Place both plastic and draw sheet under the patient.	To prevent spillages.
8	Switch off bladder irrigation (If they have one. Do not dispose it).	To ensure the bladder is empty before commencing treatment.
9	Empty catheter bag (remember to enter on the fluid balance chart).	
10	Place a plastic backing sheet under the patient and another under the penis and over the scrotum in males / or tuck it around the labia in females.	To prevent any spillages of any chemotherapy on the bedding and skin if there is leak.
11	Wash hands and don protective clothing and sterile gloves.	To maintain sterility and protect yourself from contamination.
12	Disconnect the catheter bag from the catheter and cleanse the catheter connection, attach a flip-flow to the catheter. Place sterile guard.	To maintain sterility, flip flow reduces the risk of spillages.
13	Attach the Epirubicin syringe at the end of the flip-flow. Open the valve and then slowly introduce the drug, do not introduce forcefully and if painful stop immediately .	Slow instillation allows assessing the patient for pain or discomfort that could be due to bladder spasm and may cause extravasation.
14	Leave the catheter in situ for an hour and	Patient may not be able to

	ensure the patient is aware of the time the medication needs to stay in the bladder.	tolerate the full hour.
15	Ensure the patient is comfortable and regularly check for leakages.	Patient may not be able to feel any leakages if they have had spinal.
Draining out		
16	Turn off the flip flow and carefully disconnect the Epirubicin syringe.	If not using a flip flow there is high risk of spillage.
17	All effort must be taken to ensure the cytotoxic drug does not get in contact with the skin. Follow the CDHB protocol on management of spill if any spillages.	To protect self from contamination.
18	Following treatment the Epirubicin should be drained from the patient's bladder by attaching a catheter drainage bag and allowing drainage into a closed catheter bag. Make sure the bladder has drained completely.	To ensure complete emptying of the bladder.
19	Tie the tubing and dispose the bag and any equipment in double cytotoxic bag, label and dispose according to CDHB protocol.	To protect staff from cytotoxic contamination.
20	Connect a new drainage bag and continuous bladder irrigation may be recommenced if indicated and bags must be labelled with cytotoxic stickers.	
21	Continue with post –operative management and ongoing assessment. Document in the clinical notes and medication chart.	
22	Encourage patient to drink at least 2-3 litres of fluid within the first 24 hours of treatment to encouraged elimination of the drug.	To the flush the medication out of the system.
23	Urine samples must not be sent to the laboratory within 72 hours of receiving treatment and if necessary samples must be clearly labelled with a cytotoxic sticker.	To prevent potential contamination in the laboratory services.
Removal of catheter and drainage bag		
24	Don PPE	
25	The catheter is unclamped from instillation as documented in the patient's postoperative orders.	
26	Allow the catheter to drain the Epirubicin into the drainage bag until empty.	
27	Deflate the ballon and remove the catheter.	
28	Using measure on drainage bag, estimate the amount of fluid in the bag and record on the fluid chart.	
29	Dispose the whole closed system into the purple cytoyoxic bag.	
30	Remove PPE and dispose into the purple cytotoxic waste bag.	
31	Dispose the bag as per CDHB cytotoxic policy.	To ensure safe disposal

Trial of void process		
32	<p>The patient must void post operatively prior to discharge. The patient is advised to use the toilet for voiding, not urinal or bedpan. Male patients are advised to sit whilst urinating for 72 hours (to prevent splashing).</p> <p>Universal precaution should be used for at least 72 hours when handling body fluids.</p>	Reduces the risk of contamination.
33	Advice the patient to flush the toilet twice.	
34	If a pan or urinal is used place it alone in the sanitizer and has to go through the cycle twice.	
35	<p>Advice family</p> <p>Contaminated clothes should be removed immediately using disposable gloves and washed separately in a hot cycle.</p> <p>Cytotoxic precautions should be continued for 72 hours.</p> <p>There is no restriction in movement or normal routine and normal social contact will not result in contamination.</p>	To protect family from contamination.
Management of spills		
36	If contaminated body fluid is spilled on the floor follow the CDHB policy.	To protect staff and patients

Management of Spillages

Prevention of leakage and of spillages should be a priority when administering intravesical chemotherapy. If contact occurs with the patients skin immediately place an absorbent paper on the area and wash with soap and water and apply barrier cream.

A chemotherapy spill kit should be available at all times. The kit is available from the pharmacy and should be returned to pharmacy to be refilled.

If a spill occurs

Procedure

1. Isolate the area

- Contain the spill by covering with a plastic backed pad.
- Cordon off the area (close windows and doors).
- Move patients away from the spill.

2. Protect

- Don PPE, in the following order: Shoe covers, disposable impermeable long sleeved gown, mask, goggles and gloves – (2 pairs).

3. Clean up the spill

- Put clear plastic into the cytotoxic bag and roll edges.
- Collect the contaminated material /towels and put into clear bag.
- Gently pour water over the spill area on floor.
- Dry with disposable towels from outside of the spill to the middle of the spill.
- Linen: change immediately and dispose of in cytotoxic bag.
- Clothes: remove immediately and manage skin contamination then wash the clothes separately in a hot cycle.
- Contamination of skin, eyes, and mucous membranes: irrigate with copious amount of sodium chloride 0.9% and seek medical advice immediately.

4. Dispose of waste

- Remove protective clothing in the following order shoe covers, gown, mask, goggles and outer gloves and dispose in the clear bag.
- Unroll the edges of the clear bag and tie off.
- Unroll the purple bag and, remove the second pair of gloves and tie off the purple.
- Dispose of all the equipment in the in cytotoxic bag.

5. Documentation

- Complete an incident form and OSH form.
- Return the used spill kit to the hospital pharmacy for refilling.

Staff decontamination

Eyes

- Remove gloves
- Irrigate with water for 15-20 minutes
- Seek medical advice
- Complete incident form/OHS forms

Skin –drug contact

- Shower with copious amount of water 10-20 minutes
- Use soap and rinse off with running water
- Clean the shower thoroughly
- Complete incident form /OHS forms

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Intravesical Cytotoxic Assessment

Name:	Designation:	Work area:
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1. Who can administer intravesical cytotoxic?

2. Which personnel should not handle cytotoxic waste and cytotoxic waste products?

3. List the protective clothing that must be worn when administering or draining out cytotoxics.

4. If you noticed heavy haematuria draining out from a catheter bag what would you do?

5. A patient has received Epirubicin into his bladder, is incontinent and contaminates: the bed linen, their own pyjamas and the floor. How would you clean this and in what order?

6. How would you dispose of the used equipment after draining out?

7. For how long after administration of intravesical cytotoxic would precautions need to be taken with body fluid?

8. Where do you order cytotoxic kit from?

9. State the process of managing accidental exposure of a cytotoxic agent on the skin?

10. What steps do you take following a cytotoxic spill?

11. What advice do you give to a patient post removal of catheter?
13. What advice do you give to the patient and family on discharge?

Please complete and return to the urology CNS.

Marked by -----

Date -----

Signature -----

Entered into the database -----Y/N