

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

Editor: Assoc. Prof. Chris Alderman, University of South Australia – Director of Pharmacy, RGH

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Intravesical BCG for superficial bladder cancer

Bladder cancer is more common in men than in women; with a male/female ratio of approx. 4:1. About 70-80% of patients present with superficial tumour which is confined to the mucosa (stage Ta) or lamina propria (stage T1). Carcinoma in situ (CIS) is another form of superficial tumour characterised by diffuse malignant cells confined to the epithelium.

The standard treatment for these patients is transurethral resection of all visible tumour. However despite complete resection, the tumour will recur in 50-70% of patients within 5 years. The decision to use adjuvant intravesical bacillus Calmette-Guerin (BCG) to reduce recurrence or progression of bladder cancer depends on the individual's risk factors and type of tumour presented. CIS has a high risk of disease progression (ie development of muscle invasion or metastasis) and the presence of even a small focus of CIS is a definite indication for intravesical BCG.

The use of intravesical BCG (a live attenuated Mycobacterium bovis bacilli) offers significant advantage in reducing tumour recurrence when compared to transurethral resection alone. The mechanisms by which intravesical BCG exerts its antitumour effect are not well understood. It is an immune stimulant and draws macrophages to the bladder: these enhance the release of Tumour Necrosis Factor- α and Interlukin-1 alpha which are involved in tumour killing.

The BCG is instilled into the bladder (usually the dose diluted with 50mL of saline) and retained for two hours. The optimal dose, maintenance dose and instillation schedules remain unclear; there are many different dosing schedules with varying strains of BCG used in different studies. Currently in Australia, there are two different brands of BCG for instillation available (OncoTice^R containing $2-8 \times 10^8$ units of BCG or Immucyst^R containing $6.6-19.2 \times 10^8$ units of BCG). The contents of one vial is instilled in the bladder once a week for 6-12 weeks, followed by maintenance treatment every 1-3 months for 1-2 years. Treatment should not be given for 7-14 days (or after mucosa has healed) after biopsy, transurethral resection or traumatic catheterisation as if administered to damaged mucosa, there is an increased risk of BCG infection.

Local and systemic adverse effects are seen with intravesical BCG. Dysuria, urinary frequency, malaise, low grade fever and flu-like symptoms are common. Other side-effects include arthralgia/arthritis, rash and systemic BCG infection. For severe irritative bladder symptoms lasting >48 hours or if BCG sepsis is suspected, the use of anti-tuberculous therapy should be considered after consultation with specialist advice.

BCG is a viable attenuated mycobacterium, it is potentially infectious and to reduce the risk for transmission, it should be prepared, handled and disposed of as a biohazard material. Patients should be advised that all urine voided within 6 hours after instillation should be diluted with an equal volume of undiluted household bleach for 15 minutes.

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FOR FURTHER INFORMATION – CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@rgh.sa.gov.au
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