CADTH
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CADTH Rapid Response
Report in Brief

The Use of the Electromotive Drug Administration System in Patients With Superficial Bladder Cancer: A Review

Context

Superficial bladder cancer refers to the growth of cancer cells in the lining of the bladder wall but not in the bladder muscle. In 2008, this type of cancer accounted for about 6% of all cancers in Canada. Systemic drug delivery — releasing a drug into the bloodstream — is generally ineffective in treating this condition because the bladder wall prevents drugs from diffusing into the bladder. Intravesical drug delivery — delivering a drug through a catheter directly into the bladder — is more effective but has several limitations, such as the need for repeated infusions. A high recurrence rate coupled with the need for repeated treatments make bladder cancer a costly cancer to treat.

Technology

A new, potential option for treating superficial bladder cancer is electromotive drug administration (EMDA), which delivers drug therapy intravesically using an electrical current. EMDA may also be a cost-effective alternative to the traditional intravesical method. Canadian guidelines on the treatment of bladder cancer issued in 2010 did not provide recommendations for EMDA because there was a lack of evidence at that time.

Issue

A review of the evidence on the efficacy, safety, and cost-effectiveness of EMDA for superficial bladder cancer will help to inform treatment decisions for patients with this condition.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Key Messages

For the treatment of superficial bladder cancer:

- Using EMDA to administer mitomycin before performing transurethral resection of the bladder tumour (TURBT) to surgically remove the tumour may be more effective and result in fewer adverse effects than traditional intravesical drug administration of mitomycin after TURBT or than TURBT alone (based on only one study).
- No information was found on the cost-effectiveness of EMDA.

Results

The literature search identified 46 citations, with 7 additional articles identified from other sources. After screening the abstracts, 1 study — a randomized controlled study — met the criteria for inclusion in this review.

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