

IN BRIEF A Summary of the Evidence

Imiquimod for the Treatment of Basal Cell or Squamous Cell Carcinoma: A Review

Key Messages

- For basal cell carcinoma, squamous cell carcinoma, and Bowen disease, surgical excision appears to be the most favourable treatment with respect to complete lesion clearance and lower cumulative recurrence probability.
- Of non-surgical treatments for completely clearing cancerous lesions, imiquimod appears to be the most effective, followed in order by cryotherapy, photodynamic therapy, fluorouracil, and placebo.
- Of non-surgical treatments regarding the cumulative probability of the cancer recurring, radiotherapy appears to be the most favourable, followed in order by fluorouracil, imiquimod, cryotherapy, and photodynamic therapy.
- Placebo and cryotherapy appear to be least likely to result in adverse events, followed in order by surgical excision, fluorouracil, and imiquimod.
- For the treatment of superficial basal cell carcinoma:
 - Imiquimod appears to result in greater tumour-free survival when compared with photodynamic therapy, based on limited evidence.
 - Imiquimod and fluorouracil appear to be both more effective and less costly than methyl aminolevulinate photodynamic therapy based on one-year follow-up results; but the cost-effectiveness in the long term is unclear.
- Given the variation in the characteristics and the associated risks of basal cell lesions, the type of lesion and clinical risk factors need to be considered when determining the appropriate course of treatment.

Context

The most common types of non-melanoma skin cancers (NMSCs) are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). BCC is a superficial, slow-growing papule or

nodule that begins in the cells within the deeper – or basal – layer of the epidermis, the outer layer of skin. Although this type of cancer rarely metastasizes (spreads), the local growth can be very destructive. SCC is a malignant tumour of the outermost layer of the epidermis and not only can it cause considerable local destruction, but it can also, in advanced stages, metastasize. Bowen disease, also called “in situ SCC,” is an early stage of SCC.

Approximately 80% of all NMSCs are BCCs. BCC is the most common type of skin cancer and its incidence is increasing worldwide. SCC is the second most common type of skin cancer. BCC and SCC are generally most common in fair-skinned individuals with a history of sun exposure.

Technology

A variety of treatment options are available for BCC and SCC. These include surgical excision, radiotherapy, cryotherapy, photodynamic therapy, and the use of topical medications such as imiquimod and fluorouracil. Radiotherapy uses high-energy X-rays to destroy the cancer cells, cryotherapy uses liquid nitrogen to destroy tissue by freezing it to -196°C , and photodynamic therapy uses visible light (blue or red) and a light-sensitive compound to destroy cancer cells. Fluorouracil reduces cell proliferation and induces cell death, particularly in cells with high cell division rates. Imiquimod is an immune-response modifier that has strong antiviral and antitumour properties. However, treatment with surgery is generally considered the gold standard.

Issue

Although surgical excision is commonly considered the best treatment option for BCC and SCC, it can also cause bleeding and scarring, and it carries the risk of infection. In addition, some patients may not want to undergo surgery or may not be able to tolerate surgical procedures. As a result, non-surgical treatments are gaining favour; however, there appears to be no consensus as to which of these treatments are optimal. A review of the evidence on the clinical and cost-effectiveness of the various treatments for BCC and SCC will help inform treatment decisions.

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).

Results

The literature search identified 204 citations, with no additional articles identified from other sources. Of these, nine publications met the criteria for inclusion in this review, which provided information on six unique studies — three systematic reviews, two randomized controlled trials, and one economic study.

Read more about CADTH and its review of imiquimod for the treatment of basal cell or squamous cell carcinoma at:



cadth.ca/imiquimod-treatment-basal-cell-or-squamous-cell-carcinoma-review-clinical-effectiveness-and-cost

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