

Effectiveness and cost-effectiveness of salicylic acid and cryotherapy for cutaneous warts. An economic decision model

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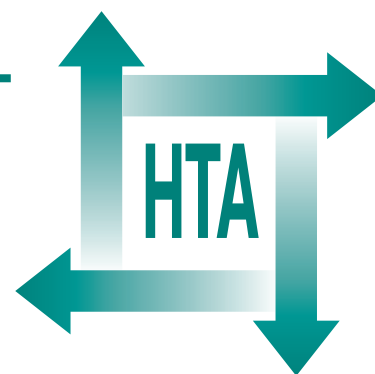
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Executive summary

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Executive summary

Background

This project was commissioned in response to a Cochrane systematic review of randomised controlled trials (RCTs), which found little evidence to suggest that cryotherapy was any more effective than salicylic acid (SA) for the treatment of warts. The aim of this study was to model the likely cost-effectiveness of these two commonly used treatments, and to explore whether commissioning an RCT comparing the two interventions was likely to be worthwhile. To do this, various data-gathering methods were used to inform an economic decision model, from which conclusions were drawn with regard to the cost-effectiveness of these and other commonly used wart treatments.

Objectives

The objectives of the study were:

- to estimate the costs of commonly used treatments for cutaneous warts
- to estimate the health benefits and risks associated with these treatments
- to create an economic decision model to evaluate the cost-effectiveness of these treatments
- to assess, in the light of the economic model, whether an RCT would be feasible and cost-effective, and if so, to comment on its design and conduct.

Methods

A variety of primary and secondary data collection methods was used to inform the development of an economic decision model. Primary data collection involved focus groups, structured interviews and observation of practice. These methods were used to capture the commonly used care pathways, and to identify issues of importance to patients and health professionals. The results were subsequently used to inform the design of a postal survey sent to 723 patients who had recently attended their GP's surgery for the treatment of warts. Data from the postal survey

provided estimates of the effectiveness of wart treatments in a primary care setting. These estimates were compared with outcomes reported in the Cochrane review, which were largely obtained from RCTs conducted in secondary care.

Secondary data used to inform the decision model came from a variety of sources including the recently updated Cochrane systematic review and published cost and prescribing data. These primary and secondary data sources were used to develop a decision model including a variety of over-the-counter (OTC) and GP-prescribed treatments. The model simulated 10,000 patients and adopted a societal perspective. Data were analysed using TreeAge cost-effectiveness analysis and S-plus, using cohort simulation techniques.

Results

OTC treatments were used by a substantial number of patients (57%) before attending the GP surgery. By far the most commonly used OTC preparation was SA.

The results of the economic model suggested that of the treatments prescribed by a GP, the most cost-effective treatment was SA, with an incremental cost-effectiveness ratio (ICER) of 2.20 £/% cured. The ICERs for cryotherapy varied widely (from 1.95 to 7.06 £/% cured) depending on the frequency of applications and the mode of delivery. The most cost-effective mode of delivery was through nurse-led cryotherapy clinics (ICER = 1.95 £/% cured) and this could be a cost-effective alternative to GP-prescribed SA.

Overall, the OTC therapies were the most cost-effective treatment options. ICERs ranged from 0.22 £/% cured for OTC duct tape and 0.76 £/% cured for OTC cryotherapy to 1.12 £/% cured for OTC SA. However, evidence in support of OTC duct tape and OTC cryotherapy is very limited.

Side-effects were commonly reported for both SA and cryotherapy, particularly a burning sensation, pain and blistering.

Conclusions

Implications for healthcare

Many people suffer from warts. Incidence figures estimated from the fourth National Morbidity Survey (1991–2) suggest that almost 2 million people in England and Wales see their GP per year about this condition, at a cost of at least £40 million per annum. Cryotherapy delivered by a doctor is an expensive option for the treatment of warts in primary care. Alternative options such as GP-prescribed SA and nurse-led cryotherapy clinics provide more cost-effective alternatives, but are still expensive compared with self-treatment.

Given the minor nature of most cutaneous warts, coupled with the fact that the majority spontaneously resolve in time, it may be concluded that a shift towards self-treatment is warranted. Although both duct tape and OTC cryotherapy appear promising new self-treatment options from both a cost and an effectiveness perspective, more research is required to confirm the efficacy of these two methods of wart treatment. If these treatments are shown to be as cost-effective as or more cost-effective than conventional treatments, then a shift in service delivery away from primary care towards more OTC treatment is likely. A public awareness campaign would be useful to educate patients about the self-limiting nature of warts and the possible alternative OTC treatment options available.

Recommendations for research

Two future RCTs are recommended for consideration. First, a head-to-head trial of SA compared with nurse-led cryotherapy in primary

care is an obvious gap in the current evidence base. Such a trial would have the benefit of providing efficacy data for these two most commonly used treatments, while also providing a measure of the cost-effectiveness of nurse-led clinics.

Second, further research would be valuable to provide a more reliable evidence base for the available OTC treatments. Nevertheless, by investing in a trial of home treatments, it may be possible to encourage more patients to self-treat their warts and verrucae, thus reducing the overall burden on the NHS. In some cases this will mean greater cost falling on individual patients. A three-arm trial comparing OTC SA, duct tape and OTC cryotherapy (Wartner[®]) is recommended. Greater understanding of the efficacy of these home treatments will give doctors a wider choice of treatment options, and may help to reduce the overall demand for cryotherapy in primary care.

It is recommended that the above trials be conducted in a primary care setting, be of sufficient duration to capture long-term recurrence data, and have sufficient sample size to allow for planned subgroup analysis. Before conducting an RCT of OTC therapies, further work is required to assess the optimum dosage and duration of these treatments.

Publication

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NHS R&D HTA Programme

The research findings from the NHS R&D Health Technology Assessment (HTA) Programme directly influence key decision-making bodies such as the National Institute for Health and Clinical Excellence (NICE) and the National Screening Committee (NSC) who rely on HTA outputs to help raise standards of care. HTA findings also help to improve the quality of the service in the NHS indirectly in that they form a key component of the 'National Knowledge Service' that is being developed to improve the evidence of clinical practice throughout the NHS.

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The HTA Programme commissions research only on topics where it has identified key gaps in the evidence needed by the NHS. Suggestions for topics are actively sought from people working in the NHS, the public, service-users groups and professional bodies such as Royal Colleges and NHS Trusts. Research suggestions are carefully considered by panels of independent experts (including service users) whose advice results in a ranked list of recommended research priorities. The HTA Programme then commissions the research team best suited to undertake the work, in the manner most appropriate to find the relevant answers. Some projects may take only months, others need several years to answer the research questions adequately. They may involve synthesising existing evidence or conducting a trial to produce new evidence where none currently exists.

Additionally, through its Technology Assessment Report (TAR) call-off contract, the HTA Programme is able to commission bespoke reports, principally for NICE, but also for other policy customers, such as a National Clinical Director. TARs bring together evidence on key aspects of the use of specific technologies and usually have to be completed within a short time period.

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Reviews in *Health Technology Assessment* are termed 'systematic' when the account of the search, appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

The research reported in this monograph was commissioned by the HTA Programme as project number 02/12/03. The contractual start date was in April 2003. The draft report began editorial review in August 2005 and was accepted for publication in January 2006. As the funder, by devising a commissioning brief, the HTA Programme specified the research question and study design. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors' report and would like to thank the referees for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

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