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### Citation

Bavinck, J. N. B., Eekhof, J. A. H., & Bruggink, S. C. (2011). Treatments for common and plantar warts. *British Medical Journal*, 342, -. Retrieved from <https://hdl.handle.net/1887/117648>

Version: Not Applicable (or Unknown)

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**Note:** To cite this publication please use the final published version (if applicable).

## EDITORIALS

## Treatments for common and plantar warts

Salicylic acid or liquid nitrogen is probably no more effective than a wait and see policy

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[Image: Chassenet/SPL]

Cutaneous warts are common, benign, and usually self limiting papillomas.<sup>1 2</sup> They present in various forms and sizes and are caused by infection with human papillomavirus (HPV).<sup>1 2</sup> The two most common types are common warts (*verrucae vulgaris*), which usually occur on the hands, and plantar warts (*verrucae plantares*), which are usually found on the soles of the feet. Between 10% and 30% of primary school children have cutaneous warts, of which two thirds resolve within two years.<sup>3</sup> In the linked randomised controlled trial (doi:10.1136/bmj.d3271), Cockayne and colleagues compare the effectiveness of cryotherapy versus salicylic acid for the treatment of plantar warts.<sup>4</sup>

Treatments have been based on destruction (cryotherapy, photodynamic treatment, pulsed dye laser), keratolysis (salicylic acid), immunostimulation (dinitrochlorobenzene, interferons), or antimitotic effects (bleomycin, fluorouracil).<sup>1 5</sup> A systematic review of topical treatments for cutaneous warts was published in 2006 and updated in 2009 to include subsequent randomised controlled trials.<sup>5 6</sup> The authors identified 78 relevant studies, most of which were of low methodological quality, and concluded that the only evidence based treatments were salicylic acid and aggressive cryotherapy.<sup>5</sup> In practice, many warts will need a combination of treatments.<sup>7</sup> Also, because most modalities are user dependent, individual practitioners may have higher or lower success rates than that reported in the literature.<sup>7</sup>

A subsequent randomised controlled trial of 250 participants in primary care compared cryotherapy with liquid nitrogen every two weeks, self application of salicylic acid daily, or a wait and see approach. It found that cryotherapy was the most effective treatment for common warts but found no clinically relevant

difference between the three approaches for plantar warts after 13 weeks.<sup>8</sup>

Cockayne and colleagues' study investigated 240 patients aged 12 years or more with plantar warts.<sup>4</sup> In one group of patients, a healthcare professional delivered cryotherapy using liquid nitrogen two to three weeks apart for a maximum of four treatments. This treatment was compared with daily self treatment with 50% salicylic acid for a maximum of eight weeks. The trial found no significant difference in the proportions of participants with complete clearance of all plantar warts at 12 weeks between the salicylic acid and cryotherapy groups (14.3% v 13.6% clearance).<sup>4</sup> Although no group was allocated to a wait and see approach, the cure rates after intervention are probably not higher than without intervention, as was found in the previous trial.<sup>8</sup>

The patients in Cockayne and colleagues' study were 12 years or more, whereas the incidence of warts is highest in those aged 5-14.<sup>9</sup> The low clearance rates they found are probably not applicable to patients under 12 years because plantar warts in children are less persistent than in adolescents and adults.<sup>8</sup> Spontaneous clearance rates are much higher in younger children than in those aged 12 years or more, and cryotherapy and salicylic acid are not more effective than a wait and see approach.<sup>8</sup> Although it may be best not to treat cutaneous warts, some cases may warrant treatment, such as those associated with considerable social stigma, especially when lesions are on the face and hands.<sup>5</sup> Warts that cause pain, such as those on the soles of the feet or close to nails, may also warrant treatment.<sup>5</sup>

Because currently available treatments for plantar warts often fail, future research should not only focus on new treatments, but also try to identify subgroups of patients who will respond to specific treatments. Large numbers of HPV types, distributed over five genera, infect the human skin.<sup>10</sup> HPV types belonging to four of those genera—alphapapillomaviruses, gammapapillomaviruses, mupapillomaviruses, and nupapillomaviruses—have been detected in cutaneous warts. Little is known about the epidemiology and prevalence of these HPV types that cause common and plantar warts. Reliable detection and sampling techniques are needed to study the epidemiology of these HPV infections and have only recently become available.<sup>11</sup> This assay detects and identifies DNA of all known wart associated HPV types from the alphapapillomaviruses (HPV types 2, 3, 7, 10, 27, 28, 29, 40,

43, 57, 77, 91, 94), gammapapillomaviruses (HPV types 4, 65, 95, 48, 50, 60, 88), mupapillomaviruses (HPV types 1 and 63), and nupapillomaviruses (HPV41), but epidemiological studies using this technique are not yet available.

Definitive treatment for plantar warts remains elusive. Treatment with salicylic acid or liquid nitrogen is probably not more effective than a wait and see policy. Large scale HPV typing may teach us more about the epidemiology of plantar warts and which HPV types are preferentially present. HPV specific treatments that are based on the HPV type in the lesions may be the way forward. However, future treatments must be safe, preferably painless, and not increase morbidity.<sup>7</sup> This is especially important, because around two thirds of warts clear without treatment within two years.

Competing interests: All authors have completed the Unified Competing Interest form at [www.icmje.org/coi\\_disclosure.pdf](http://www.icmje.org/coi_disclosure.pdf) (available on request from the corresponding author) and declare: no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years, no other relationships or activities that could appear to have influenced the submitted work

Provenance and peer review: Commissioned; not externally peer reviewed.

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Cite this as: *BMJ* 2011;342:d3119