International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2013): 4.438

Cutaneous Warts and its Treatment: A Literature Review

Dr. Devendra Parmar[1], Dr. Jayesh Shah[2]

[1]Associate Professor, Department of Skin, Gujarat Adani Institute of Medical Sciences, Bhuj, Gujarat, India

[2]Professor, Department of Skin, Gujarat Adani Institute of Medical Sciences, Bhuj, Gujarat, India

Abstract: ***Viral warts are one of the most common skin diseases. They are caused by the human papilloma virus and most commonly found on the hands and feet. HPV types 2, 4, 26, 29 and others are responsible for common warts. HPV can spread from one individual to another by direct contact or via the environment. It is not known exactly how long the infectious virus can persist outside the body, but the related bovine papillomavirus is believed to retain infectivity for months or possibly years, and the same may be true for HPV. Warts are a common skin disease worldwide. Infection is common in childhood, but can occur at any age. While warts are not harmful and usually go away in time without any treatment, they are unattractive and can be painful. The clinical appearance of warts is variable and depends to some extent on the type of HPV involved and the anatomical site. HPV can also remain dormant within epithelial cells without visible disease. Many local treatments are used to treat warts, which include salicylic acid, cryotherapy, bleomycin, 5-fluorouracil, dinitrochlorobenzene, interferon -a /b /c, photodynamic therapy, pulsed-dye laser, duct tape and combinational therapy such as SA and cryotherapy.***

Keywords: Skin diseases, Treatment, Virus, Warts

1. Introduction

Human papillomaviruses (HPVs) are the causative agents of a variety of benign and cancerous lesions of the skin and other epithelial surfaces. At least 189 HPV genotypes have been described [1]. Most HPV types are associated with one or a few histopathologically distinct types of lesions and may be restricted to a particular location on the body. HPV types 2, 4, 26, 29 and others are responsible for common warts, which are slightly raised rough surface epithelial proliferations that occur most often on the hands, but can also grow elsewhere on the body. Other types of warts include plantars warts that occur most commonly on the soles of the feet (HPV 1 and others) [2], flat warts usually appearing on the face (HPV 3, 10, 38 and others) [3], butcher's warts of the hands and fingers (HPV 7) [4], and oral, gentialoranogenital warts[5]. Viral replication only takes place in fully differentiated epithelium and the subsequent proliferation results in a clinically evident warty papule or plaque.

The clinical appearance of warts is variable and depends to some extent on the type of HPV involved and the anatomical site. HPV can also remain dormant within epithelial cells without visible disease. Any epithelial surface can be affected and different types of HPV tend to favour particular anatomical sites.

Although it may be advisable not to treat warts, there are cases which may warrant treatment such as those associated with considerable social stigma, especially when lesions are on the face and hands, or warts that cause pain, e.g. those on the soles of the feet or near nails.

Many different treatments have been described for HPV-induced lesions. Salicylic acid (SCA) and cryotherapy, which are intended to kill HPV-infected cells, are the most frequently employed treatments for common warts by dermatologists. Over-the-counter versions of these treatments are also available. Numerous studies, albeit with highly variable protocols, have examined the efficacy of SCA and cryotherapy for treating HPV-induced lesions. The efficacy of these treatments is low, and there is a high rate of recrudescence and adverse effects. Although well-controlled clinical trials have not been performed, retinoids are promising alternative treatments for warts [6,] Topical vitamin A was an effective treatment of common warts in a prior informal study.

2. Epidemiology

There are very few precise epidemiological data on viral warts. Most prevalence surveys have tended to use selected subsets of the population such as dermatology outpatients or school children. Two large studies of populations with a complete age range in the USA and Russia produced widely different prevalence figures for viral warts of 0.84% [7] and 12.9% [8]respectively. The much-cited 1978 Lambeth study of skin disease found an overall prevalence of warts of 32.8/1000 in the 15 to 74 years age range [9]. Two studies of school populations found prevalences of 3.9 to 4.7% in the 11 to 16 year age range [10] and 12% in 4 to 6 year olds and 24% in 16 to 18 year olds. This wide variation in prevalence figures is probably due to a combination of true variation between samples and populations, variations of study design and age-related effects.

Despite the scarcity of robust data, it is generally agreed that in the general population viral warts are uncommon in infancy, increasingly common in childhood and sharply declining in prevalence thereafter. Young people in institutions are at greater risk, particularly for plantar warts in communal 'bare foot' areas such as changing rooms and swimming pools. Fishmongers, butchers and other meat

handlers are also known to be at greater risk of acquiring large and numerous hand warts.

3. Natural History

Non-genital warts in healthy people are quite harmless and usually resolve spontaneously due to natural immunity within months or years. The rate of resolution probably depends on a number of factors including host immunity, HPV type and the site of infection. One well known study in an institutional population showed that two thirds resolved within a two year period[11] but the rates of cure in placebo and no treatment groups of some of the trials reviewed here clearly show a more rapid rate of resolution. In view of this, and because there are probably no universally effective treatments for warts, many clinicians and health planners suggest, if possible, avoiding the treatment of viral warts. On the other hand some viral warts persist for many years and untreated warts represent a pool of HPV infection within the community. Moreover many people find warts either unsightly or painful and there is considerable social stigma and hence morbidity associated with visible warts. Therefore, although in theory a policy of not treating warts is logical, in practice many people present to health professionals and are treated.

4. Diagnosis

Diagnosis of common hand and foot warts is usually not difficult. Paring down a wart will often result in pinpoint bleeding as the capillary loops of the elongated dermal papillae are exposed. Warts need to be distinguished either clinically or histologically from other keratotic lesions on the hands or feet, such as actinic keratoses, knuckle pads or, more rarely, squamous cell carcinoma or focal palmoplantar keratoderma. On the feet, corns and calluses or callosities can be confused with warts, but paring and close inspection should allow them to be distinguished. On limbs, other hyperkeratotic lesions such as lichen planus or angiokeratoma may cause confusion, and plane warts may need to be distinguished from lichen planus or thin actinic or seborrhoeic keratoses.

5. Treatment

No therapy
Depending on their site and size, warts may be just a minor nuisance. If the affected individual is immunocompetent, then an expectant approach to management is entirely acceptable.

Interventional Treatment
Some warts can be uncomfortable or interfere with function, or may be a major cosmetic bother and embarrassment when numerous or on sites such as the face. Under these circumstances, a number of different treatments may be considered. The ideal treatment for viral warts should be simple, cheap, effective and free of side effects. The usual first line treatment of wart paints containing salicylic acid and/or lactic acid fulfil these criteria but are slow to work, somewhat laborious and require a degree of perseverance. However, they are readily available and cheap. Cryotherapy, usually with liquid nitrogen, is another first line treatment or a second line treatment if topical treatments have been ineffective. A number of freezes at intervals of two to four weeks are usually employed. In industrialized countries this treatment is usually available in both primary and secondary care but is expensive essentially because of the cost of clinic time.

Other substances sometimes used topically are:
- Glutaraldehyde;
- Formaldehyde;
- Podophyllin;
- Podophyllotoxin;
- 5-fluorouracil;
- Silver nitrate;
- Cantharidin.
- Very resistant warts are sometimes treated with 'third line' treatments such as:
- Topical or systemic immunotherapy;
- Intralesional bleomycin injections;
- Surgical excision;
- Curettage and cautery.

Lasers: PDL (585 nm) is the laser used most frequently and acts by destroying wart vessel vasculature through haemoglobin's absorption peak at 585–595 nm. Direct thermal injury to the heat-sensitive HPV virus may also play a role. Treatment protocols (pulse width, fluence, spot size, number of pulses and duration of treatment) vary between studies, making efficacy difficult to evaluate.

These treatments are more specialized and generally carry a higher risk of side effects. They are also more expensive and, generally speaking, more uncomfortable.

6. Conclusion

Viral warts are one of the most common skin diseases. They are caused by the human papilloma virus and most commonly found on the hands and feet. While warts are not harmful and usually go away in time without any treatment, they are unattractive and can be painful. Many different treatments have been described for HPV-induced lesions. Salicylic acid (SCA) and cryotherapy, which are intended to kill HPV-infected cells, are the most frequently employed treatments for common warts by dermatologists.

References

[1] Bernard HU, Burk RD, Chen Z, van Doorslaer K, Hausen H, de Villiers EM: Classification of papillomaviruses (PVs) based on 189 PV types and proposal of taxonomic amendments. Virology 2010, 401(1):70-79.
[2] Davis MD, Gostout BS, McGovern RM, Persing DH, Schut RL, Pittelkow MR: Large plantar wart caused by human papillomavirus-66 and resolution by topical cidofovir therapy. J Am Acad Dermatol 2000, 43(2 Pt 2):340-343.
[3] Yoo H, Won SS, Choi HC, Yoon TJ, Ye SK, Park TK, Lee KH: Detection and identification of human

papillomavirus types isolated from Korean patients with flat warts. Microbiol Immunol 2005, 49(7):633-638.

[4] Oltersdorf T, Campo MS, Favre M, Dartmann K, Gissmann L: Molecular cloning and characterization of human papillomavirus type 7 DNA. Virology 1986, 149(2):247-250.

[5] Rijkaart DC, Berkhof J, Rozendaal L, van Kemenade FJ, Bulkmans NW, Heideman DA, Kenter GG, Cuzick J, Snijders PJ, Meijer CJ: Human papillomavirus testing for the detection of high-grade cervical intraepithelial neoplasia and cancer: final results of the POBASCAM randomised controlled trial. Lancet Oncol 2012, 13(1):78-88.

[6] Gelmetti C, Cerri D, Schiuma AA, Menni S: Treatment of extensive warts with etretinate: a clinical trial in 20 children. Pediatr Dermatol 1987, 4(3):254-258.

[7] Johnson LW. Communal showers and the risk of plantar warts. Journal of Family Practitioners 1995; **40:136**–8.

[8] Beliaeva TL. The population incidence of warts. Vestnic Dermatologii i Venereologii 1990;. 2:55–8.

[9] Rea JN, Newhouse ML, Halil T. Skin disease in Lambeth. A community study of prevalence and use of medical care. *British Journal of Preventative and Social Medicine* 1976; **30:107**–14.

[10] Williams HC, Pottier A, Strachan D. The descriptive epidemiology of warts in British schoolchildren. *British Journal of Dermatology* 1993; **128:504**–11.

[11] Massing AM, Epstein WL. Natural history of warts. Archives of Dermatology 1963; 87:306–10.