

3.14.6.1 *Treatments suitable for self-application*

Patient-applied treatments include podophyllotoxin, salicylic acid, imiquimod, polyphenon E, 5-fluoracil and potassium hydroxide [462]. Imiquimod 5% cream showed a total clearance of external genital or perianal warts in 50% of immunocompetent patients [463] as well as in HIV positive patients successfully treated with highly active antiretroviral therapy [464]. A Cochrane review of published RCTs found imiquimod to be superior to placebo in achieving complete clearance of warts (RR: 4.03, 95% CI: 2.03–7.99) [465]. The recommended treatment schedule is imiquimod 5% cream applied to all external warts overnight three times each week for sixteen weeks [462]. In an RCT involving 502 patients with genital and/or perianal warts sinecatechins 15% and 10% showed a complete clearance of all baseline and newly occurring warts in 57.2% and 56.3% of patients, respectively vs. 33.7% for placebo [466]. In addition, sinecatechins 10% has been shown to be associated with lower short-term recurrence rates when used as sequential therapy after laser CO₂ ablative therapy [467]. Sinecatechins is applied three times daily until complete clearance, or for up to sixteen weeks. Clearance rates of 36–83% for podophyllotoxin solution and 43–70% for podophyllotoxin cream have been reported [462]. A systematic review and meta-analysis confirmed the effectiveness of podophyllotoxin 0.5% solution relative to placebo (RR: 19.86, 95% CI: 3.88–101.65) [468]. Podophyllotoxin is self-applied to lesions twice daily for three days, followed by four rest days, for up to four or five weeks. An RCT has also shown potassium hydroxide 5% to be an effective, safe, and low-cost treatment modality for genital warts in men [469].

3.14.6.2 *Physician-administered treatment*

Physician-administered treatments included cryotherapy (79–88% clearance rate; 25–39% recurrence rate), surgical treatment (61–94% clearance rate), including excision, electrosurgery, electrocautery and laser therapy (75% clearance rate) [470, 471]. Physician-administered therapies are associated with close to 100% clearance rates, but they are also associated with high rates of recurrence as they often fail to eliminate invisible HPV-infected lesions [470, 471]. No data about the superiority of one treatment over another are available. However, among all interventions evaluated in a recent systematic review and network meta-analysis, surgical excision appeared to be the most effective treatment at minimising risk of recurrence [472].

3.14.6.3 *Summary of evidence and recommendations for the treatment of anogenital warts*

Summary of evidence	LE
A Cochrane review of published RCTs found imiquimod to be superior to placebo in achieving complete clearance of warts.	1b
In an RCT, sinecatechins 15% and 10% showed a complete clearance of all baseline and newly occurring warts in 57.2% and 56.3% of patients, respectively vs. 33.7% for placebo.	1b
A systematic review and meta-analysis confirmed the effectiveness of podophyllotoxin 0.5% solution relative to placebo.	1b
A systematic review and meta-analysis reported that among all physician-applied therapy, surgical excision seemed to be the most effective at minimising risk of recurrence.	1a

Recommendations	Strength rating
Use self-administered imiquimod 5% cream applied to all external warts overnight three times each week for sixteen weeks for the treatment of anogenital warts.	Strong
Use self-administered sinecatechins 15% or 10% applied to all external warts three times daily until complete clearance, or for up to sixteen weeks for the treatment of anogenital warts.	Strong
Use self-administered podophyllotoxin 0.5% self-applied to lesions twice daily for three days, followed by four rest days, for up to four or five weeks for the treatment of anogenital warts.	Strong
Use cryotherapy or surgical treatment (excision, electrosurgery, electrocautery and laser therapy) to treat anogenital warts based on an informed discussion with the patient.	Strong

3.14.7 *Circumcision for reduction of HPV prevalence*

Male circumcision is a simple surgical procedure which has been shown to reduce the incidence of STIs including HIV, syphilis and HSV-2 [473]. Two systematic reviews and meta-analyses, showed an inverse association between male circumcision and genital HPV prevalence in men [457, 459]. It has been suggested that male circumcision could be considered as an additional one-time preventative intervention likely to reduce the burden of HPV-related diseases in both men and women, particularly among those countries in which HPV vaccination programs and cervical screening are not available [459].