Carbon dioxide (CO2) laser ablation versus other surgical treatment of condylomata acuminata

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Record Status
This is a bibliographic record of a published health technology assessment. No evaluation of the quality of this assessment has been made for the HTA database.

Citation

Authors' objectives
Condylomata acuminata (CA) (also referred to as anogenital warts) are benign epithelial lesions caused by the human papillomavirus (HPV). No clear standard of care exists in the treatment of CA. Treatment options fall into 3 main categories—chemical or physical destruction, immunological therapy, and surgical therapies, including cryotherapy, laser therapy, and excisional procedures. The first line of defense against CA typically involves patient-administered topical treatment; however, the comparative effectiveness of such treatments has not been established, with some evidence suggesting that surgical techniques may be more effective in clearance rates than topical treatment.

Description of Technology: This health technology assessment focuses on carbon dioxide (CO2) laser treatment compared with other surgical treatments for CA. CO2 lasers emit infrared light (10,600 nanometers). The CO2 laser works by absorbing water around and within cells, causing them to heat to the point that their destruction ensues. The beam of a CO2 laser can be focused to the point that it can be used to remove the cellular layers of a lesion, as well as vaporize the base of a lesion. Proponents suggest that CO2 laser treatment can penetrate the depth of the lesions, resulting in fewer treatments; can be used on large-sized lesions; can be used for clusters or multiple lesions on different areas of the skin; and that the laser ablates as it cuts, reducing blood loss. Patient Population: CO2 laser treatment can be used for all patients (including children and pregnant women). However, the studies analyzed for this health technology assessment were limited to adult populations. Clinical Alternatives: Alternative surgical treatments to CO2 laser for CA include electrocautery, cryotherapy, and surgical excision. Noninvasive alternatives include watchful waiting, topical treatments (such as imiquimod, cidofovir, trichloroacetic acid, podophyllotoxin, podophyllin), and photodynamic therapy. This health technology assessment focuses on surgical excision and cryotherapy as alternative treatments to CO2 laser therapy.

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