Intralesional Bleomycin for the Treatment of Non-genital Warts in HIV-infected Patients

Sir,

Warts in individuals infected with the human immunodeficiency virus (HIV) are common, frequently disfiguring and a cause of considerable distress to those afflicted. There is a poor response of warts to conventional therapies in HIV-infection, which may reflect the inherent immune dysfunction. Bleomycin has been shown to be effective in treating resistant warts (1, 2) and warts in immunocompromised transplant patients (3). We have investigated the efficacy of direct intralesional delivery of an antimitotic agent (bleomycin) to treat warts in patients with HIV-infection.

Four HIV-infected patients with long-standing, disfiguring hand and finger warts were treated. The mean patient age was 34.7 years, with known duration of HIV-infection from 6 to 8 years (mean 7.25 years). CD4 cell counts ranged from 0.008 to $0.35 \times 10^9/1$ (mean $0.23 \times 10^9/1$). Ten warts from 2 mm to 12 mm diameter were treated, with 10 untreated warts used as controls.

Using a careful, aseptic technique with the physician wearing suitable clothing and eye protection, selected warts were anaesthetised with plain 1% lidocaine. A multiple puncture technique (4) was then used to inoculate bleomycin sulphate (1 U/ml-dose range 0.1 to 0.4 ml depending on wart size) into the wart tissue.

Warts were treated with bleomycin sulphate at 3 weekly intervals for up to 3 cycles of treatment. Warts of similar size and duration on the same subject were selected as controls and received no treatment. Response, side-effects and patient satisfaction were assessed.

Overall, complete resolution was observed in 5 warts, with partial resolution in 5 warts (Table I). No regression of the control warts was observed during the study period.

The procedure was well tolerated in all subjects. Side-effects were limited to local pain in all subjects, and one subject experienced mild hand swelling. Simple oral analgesia was required after the procedure in 2 subjects. Three of the subjects were keen to have the treatment again and completed 3 cycles of therapy. All 4 subjects were pleased with the results of treatment.

Intralesional bleomycin for the treatment of recalcitrant warts, unresponsive to conventional therapy, is a well-tolerated procedure with a good response rate in HIV-infected individuals. The mechanism by which bleomycin acts is as yet unknown. However, its exact mode of action may be related

Table I.

Patient	Sex	Duration of HIV/years	CD4 × 10^9/l	Duration of warts/years	Warts treated	Treatment cycles	Response
1	M	8	0.008	2.5	1	3	Partial
2	M	6	0.32	3	5	3	All complete
3	F	7	0.25	3	2	1	2 Partial
4	M	8	0.35	2	2	3	1 Partial + 1 complete

to its cytotoxic or virucidal properties. Potential side-effects include pain, local swelling and possibly Raynaud's phenomenon (5). Systemic and long-term toxicity is unlikely in view of the extremely low doses of bleomycin used. The procedure is potentially hazardous to perform and considerable care must be taken to avoid needle-stick injury and blood spillage. In selected patients this procedure may provide excellent cosmetic results, with a high level of patient satisfaction.

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