

## GENTIAN VIOLET IN DERMATOLOGY

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## Summary

With increased usage of various topical antibiotics by dermatologists in the recent years, many harmful effects associated with their use are becoming evident. The authors emphasise that the dye, gentian violet which was once very widely used is cheap, non-irritating and non-toxic and is still valuable as a local application in many dermatoses. The only objection to its use on the exposed surfaces is the colour that it imparts to the skin and the clothing. However, the colour washes off in about a week and the patients can always be forewarned about the staining of clothes that is likely to occur. The therapeutic results with this dye and lack of side effects other than staining still justify its use in many dermatoses.

During the past few years there has been a striking increase in the use of topical antibiotics by dermatologists all over the world. It is now being realised that these are not free of side effects and possible hazards in future. To take an example, neomycin which is commonly used in the form of creams, ointments and other topical medications, has a significant capacity to produce allergic contact sensitivity<sup>1</sup>. Once sensitization to neomycin from topical exposure has occurred, systemic administration of either streptomycin or kanamycin both of which may cross-react with neomycin, may cause an eczematous contact-type of dermatitis medicamentosa<sup>2</sup>. About 20-25% of patients who were treated with topical clindamycin from two months to two years for acne vulgaris showed resistant strains of *Corynebacterium acnes*. They did not show resistant strains prior to the antibiotic therapy<sup>3</sup>. It can,

therefore, well be imagined how a serious infection with an organism may fail to respond to the systemic administration of an antibiotic that was earlier used topically for a relatively benign skin infection. It is for these reasons that the dye, gentian violet (GV) which was at one time very widely employed in the treatment of various dermatoses, was thought to be worthy of attention for its antiseptic properties. It further has the definite advantage of having no serious side effects.

The dyes which are used for their local antiseptic action belong to four classes of synthetic organic compounds<sup>4</sup> (1) the azo dyes; (2) the acridine dyes; (3) the fluorescein dyes and (4) the triphenylmethane or rosaniline dyes. Gentian violet (Syn. crystal violet, hexamethylrosaniline chloride) is a rosaniline dye (fig. 1) that is being used as an antibacterial and antifungal agent since ancient times. Other rosaniline dyes include methyl violet and brilliant green. Gentian violet is a purple dye, available in the crystalline form and soluble both in water and alcohol. Gentian violet,

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Received for publication on 24-4-1979

U. S. P. contains 1% of the drug in 10% ethanol.

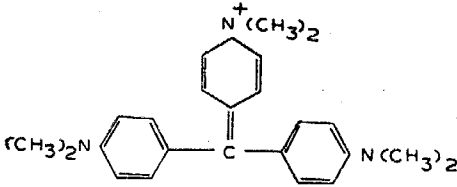


Fig. 1 Structural formula of Gentian violet

Indications for use (a) Gentian violet can be used in a variety of bacterial infections and various other dermatoses which get secondarily infected e. g., impetigo, ulcerated lesions of pemphigus, eczema, seborrhoeic dermatitis of the scalp etc. Gentian violet is bacteriostatic and bactericidal to gram-positive bacteria but gram-negative and acid-fast bacteria are very resistant to the drug<sup>5</sup>.

(b) Gentian violet can be used as an antifungal agent. It is now used chiefly in candidiasis. It is still the drug of choice in chronic paronychia due to candida.

(c) Gentian violet has been used in the past systemically for treatment of strongyloidiasis and pinworm (*enterobius vermicularis*) infestation. It has now been replaced by more satisfactory drugs<sup>6</sup>.

(d) The dye has been used by some dermatologists in the treatment of Vincent's angina with satisfactory results<sup>7</sup>.

(e) Early cases of clonorchiasis (liver fluke) respond to gentian violet administered in enteric coated capsules in 65 mg doses 3 times daily before meals for 1 month<sup>4</sup>.

Advantages of gentian violet over other anti-bacterial agents —

(i) It is non-irritating and does not cause cutaneous hypersensitivity. Most of the topically used antibiotics

have been known to cause contact hypersensitivity and even dyes other than gentian violet e.g., acriflavine, mercurochrome, brilliant green have been found to cause contact dermatitis in some patients. To the best of our knowledge, not even a single case of contact dermatitis due to gentian violet has been reported to date.

(ii) Resistance of bacteria to gentian violet has not been reported.

(iii) Gentian violet is used only locally and therefore, the problem of organisms becoming resistant to systemic administration of the drug does not arise.

(iv) Gentian violet is cheaper than most of the topically used antibiotic creams and ointments.

The chief disadvantage of using this dye is the unappealing colour it gives to the skin. The colour may be disguised with a zinc and ichthammol paste or a cosmetic powder<sup>8</sup>. The colour usually washes off or is removed in a few days during the normal exfoliation of skin. Gentian violet has exceptionally given rise to a tattoo when applied to a wound of the face<sup>7</sup>.

### Comments

On analysing the side effects of the topical antibiotics and their possible future hazards, it is suggested that one should not be too liberal in using these agents. There are, however, a number of occasions where the use of local antibiotics is undoubtedly indicated. Those antibiotics which are commonly used systemically are normally not recommended for topical use. A significant proportion of bacterial infections and other dermatoses can be treated with the safe anti-bacterial agent, gentian violet either alone or in combination with systemic antibiotics.

**References**

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TRUE or FALSE ?

The potency and efficacy of topical steroids are best judged by their vasoconstrictor (VC) effects.

(Answer page No. 293)