

Successful treatment of oral verrucous hyperplasia and oral leukoplakia with topical 5-aminolevulinic acid-mediated photodynamic therapy

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Abstract

BACKGROUND AND OBJECTIVES: Our recent studies showed that a new topical 5-aminolevulinic acid-mediated photodynamic therapy (ALA-PDT) protocol using a light-emitting diode (LED) light source is an effective and successful treatment modality for five cases of oral verrucous hyperplasia (OVH) and one case of verrucous carcinoma. In this study, we treated eight OVH lesions with the same topical ALA-PDT protocol to further confirm the efficacy of this protocol on OVH lesions. In addition, our recent study demonstrated an unsatisfactory clinical outcome for 24 oral leukoplakia (OL) lesions treated once a week by the same topical ALA-PDT protocol. Therefore, in this study 24 OL lesions were treated twice a week by the same protocol to compare whether the twice-a-week treatment modality could result in a better clinical outcome than the once-a-week treatment modality. **STUDY DESIGN/MATERIALS AND METHODS:** In this study, 8 OVH and 24 OL lesions were treated by the same topical ALA-PDT once a week and twice a week, respectively. **RESULTS:** All the former eight OVH lesions treated once a week showed complete response (CR) after 2-5 (mean, 3.8) treatments of ALA-PDT. The latter 24 OL lesions treated twice a week demonstrated CR in 8, partial response (PR) in 16, and no response in none. The present 24 OL lesions treated twice a week had a significantly better clinical outcome than the previous 24 OL lesions treated once a week ($P = 0.000$, chi-square test). **CONCLUSIONS:** We conclude that complete regression of OVH lesions can be achieved by less than six treatments of topical ALA-PDT once a week. Although the response of OL lesions to the topical ALA-PDT is not as good as the response of OVH lesions to the same therapy, all OL lesions can have at least PR after eight treatments with the topical ALA-PDT twice a week. In addition, OL lesions treated twice a week have a significantly better clinical outcome than OL lesions treated once a week.