

CR 27455: Arresting Occlusal Fissure Caries Using Ozone

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Abstract

Ozone has been shown to clinically reverse primary root carious lesions and early occlusal fissure caries. This study aimed to assess the use of Ozone to manage primary occlusal pit and fissure caries in a general dental practice. **Objectives:** This study assessed the effect of a novel ozone delivery system¹ on primary occlusal pit and fissure carious lesions over a 2 month period. **Methods:** 278 patients in a general dental practice were entered with 1275 primary carious lesions. After randomisation, lesions were assigned to either receiving no treatment or ozone treatment. Ozone was applied to each test lesion for either 10, 20, 30 or 40 seconds depending on the clinical severity. The DIAGNOdent² was employed to objectively quantify the lesions. After 2 months, 237 patients were recalled and 978 lesions were clinically re-assessed. The DIAGNOdent was again employed to objectively quantify the primary occlusal fissure carious lesions.

Results: There were no observed adverse events. 93% of the ozone treated primary occlusal fissure carious lesions had clinically reversed based on the reversal of the clinical severity index to lesions which were deemed to be reversing or to have reversed, whilst the control lesions were deemed not to have clinically changed ($P < 0.01$). In addition, this clinical reversal was supported by DIAGNOdent readings, which showed a significant reduction in the test lesions compared to the control lesions ($P < 0.001$).

Conclusions: This treatment regime using ozone is an effective alternative to conventional "drilling and filling" for primary occlusal fissure carious lesions in general dental practice. ¹HealOzone unit, CurOzone USA. ²DIAGNOdent, KaVo, Germany.