

Degradation of Bleaching Gels In Vivo as a Function of Tray Design and Carbamide Peroxide Concentration

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Clinical Relevance

Products have been found to degrade at the same rate in trays with or without reservoirs; however, more tray areas without reservoirs had no measurable bleaching agent remaining at the end of two hours.

SUMMARY

This study determined the degradation of nine bleaching agents with different concentrations after two hours in vivo following the manufacturers' recommendations. The nine carbamide peroxide products are 10, 15 and 20 Opalescence, 10, 15 and 22 Rembrandt and 10, 16 and 22 Nite White Excel 2. Each subject wore the tray with the bleaching agent for two hours on three separate occasions. The amount of remaining carbamide peroxide was determined after each use. Evaluation of remaining amount of carbamide peroxide was calculated by the US Pharmacopeia method. The study showed that the total carbamide peroxide percent recovered was significantly higher for Opalescence products (47 to 54) compared to Nite White (22 to 25) and Rembrandt bleaching gels (15 to 16). It concluded that this difference was mostly due to the use of facial reservoirs with Opalescence products, and also that whitening gel in trays with reservoirs and trays without reservoirs degraded at the same rate.