The effect on irradiance from using infection control barriers on dental light curing units

Gregory M Schuster, Brent Peterson, Nicole Putnam and John C Mitchell
Midwestern University, USA

Objective: This study investigated the effect of several disposable infection control barriers on the light intensity, or irradiance, from a LED dental light curing unit (LCU). It was hypothesized that there would be a slight reduction in irradiance associated with barriers but that the range of reduction among different barriers would be narrow.

Methods: A total of 11 Valo LED LCU's (Ultra dent, South Jordan and UT) were collected from the Midwestern University Dental Clinic. Irradiance was measured using an Ocean Optics Flame spectrometer equipped with Ocean View software. Each LCU was rigidly mounted on an optical bench and a 3.0 neutral density filter was mounted between LCU and the spectrometer bench. Six separate measurements were recorded for each of the eleven LCU's, including a measurement with two different Ultradent Valo LCU sleeves, a measurement with two different Henry Schein Air/Water syringe covers, a measurement using Kirkland Signature Stretch-Tite plastic food wrap, and a control scan without any barrier. Data was collected without ambient light and each LCU was operated on the lowest setting for 20 seconds. Analysis of variance (ANOVA) followed by a post-hoc Fisher's Test was used to look for statistical differences (α=0.05).

Results: The reduction in irradiance of each of the barriers was about 10% with the plastic food wrap producing the least amount.

Conclusion: Each of the barriers tested demonstrated statistically significant reduction in irradiance of LCU's compared with the control. Although statistically significant, the degree of reduction was deemed to be clinically insignificant.

Conservative treatment of bilateral condylar fractures in children: Case report and review of the literature

Zhou Haihua
Wuhan University, China

Two children (11 year old) with bilateral condylar fractures associated with symphysis fracture were conservatively treated. Both of them were followed up for about 1 year. A review of 21 cases of bilateral condylar fracture available in the literature revealed the younger the patient, the better the outcome of TMJ function or in radiographic remodeling. However, the longer the time elapsed, the higher the incidence of remodeling deformity and dysfunction. Thus, it must be better that a close follow-up of bilateral condylar fracture in children should be continued until the end of growth period.