عنوان فارسی مقاله:
یک مدل عددی برای توزیع دما و محاسبه آسیب گرمایی در دندان‌هایی که تحت تأثیر لیزر CO₂ قرار گرفته اند

عنوان انگلیسی مقاله:
A Numerical Model for Temperature Distribution and Thermal Damage Calculations in Teeth Exposed to a CO₂ Laser
CONCLUSIONS
A numerical model, which can be used for evaluation of laser dental treatments, is presented. This model facilitates:
(a) Analysis of different laser exposures on a tooth surface and their thermal effects.
(b) Evaluation of the thermal damage to the dental pulp, using different treatments.
(c) Optimization of laser exposure parameters, for the most effective treatment with the least thermal damage.

The model solutions were compared with analytical solutions for surface and small depth temperature profiles. The temperature rise of the irradiated surface was also compared with reported experimental work [25,27]. A comparison of results for surface temperature and for temperatures deep in the tooth was made with other published numerical results [4]. These comparisons support the model accuracy in calculating the temperature distribution at every point in the tooth. For the thermal damage calculations, the model uses the temperature distribution results, while the damage parameters are taken from data published in literature. Histological work is needed to determine more accurately the damage parameters for pulp, in order to define the damage regions more accurately. This may allow the safe use of wider range of laser treatments even with smaller safety margins.

پبخشی از ترجمه مقاله

این فایل تنها قسمتی از ترجمه می‌باشد. برای تهیه مقاله ترجمه شده کامل با فرمت ورد (قابل ویرایش) همراه با نسخه انگلیسی مقاله، اینجا کلیک نمایید.

برای جستجوی جدیدترین مقالات ترجمه شده، اینجا کلیک نمایید.