

عنوان مقاله:

Ultrasound-Induced Temperature Rise in Ex-Vivo Cow Eye Chorioretinal Region and Vitreous Humor

محل انتشار:

بیست و ششمین کنفرانس ملی و چهارمین کنفرانس بین المللی مهندسی زیست پزشکی ایران (سال: 1398)

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خلاصه مقاله:

Therapeutic ultrasound has gained the attention of scholars during the past decades. Historically, ultrasound therapeutic application in the eye was one of the first areas to be investigated by researchers. Despite long investigations as well as clinical use in the eye, the effectiveness of ultrasound and its side effects are still questionable among scholars. In this study, the temperature-rise in the chorioretinal region and the vitreous of a cow eye due to ultrasound waves was investigated. Four different ultrasound configurations were utilized. The results showed that the temperature rise increases with increasing the operating frequency of the ultrasound probe. The gap between the temperature rise of the two regions also increased with frequency increment. The same effect was observed when a bigger probe was used. It is noteworthy to mention that the outer surface of the cornea became .opaque after the experiment which could be taken into further consideration in future studies

کلمات کلیدی:

Therapeutic Ultrasound; Temperature rise; Bio-heat generation; Vitreous humor; Chorioretina

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