

عنوان مقاله:

The Effect of Low-Power Laser Therapy on the TGF/ $\beta$  Signaling Pathway in Chronic Kidney Disease: A Review

محل انتشار:

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تعداد صفحات اصل مقاله: 6

نویسندگان:

Behnaz Ahrabi

Maryam Bahrami

Reza Moghadasali

Mona Zamanian-Azodi

Maryam Sadat Khoramgah

Shahram Darabi

Fatemeh Sadat Tabatabaei Mirakabad

Hojjat-allah Abbaszadeh

خلاصه مقاله:

**Abstract Objective:** The purpose of this study is to investigate the effects of low-power lasers on kidney disease by investigating several studies. **Methods:** A number of articles from ۱۹۹۸ to ۲۰۱۹ were chosen from the sources of PubMed, Scopus, and only the articles studying the effect of low-power lasers on kidney disease were investigated. **Results:** After reviewing the literature, ۲۱ articles examining only the effects of low-power lasers on kidney disease were found. The results of these studies showed that the parameter of the low-power laser would result in different outcomes. So, a low-power laser with various parameters can be effective in the treatment of kidney diseases such as acute kidney disease, diabetes, glomerulonephritis, nephrectomy, metabolic syndrome, and kidney fibrosis. Most studies have shown that low-power lasers can affect TGF/ $\beta$  signaling which is the most important signaling in the treatment of renal fibrosis. **Conclusion:** Lasers can be effective in reducing or enhancing inflammatory responses, reducing fibrosis factors, and decreasing reactive oxygen species (ROS) levels in kidney disease and glomerular cell proliferation. **Keywords:** Low-power laser therapy Chronic kidney disease

TGF/ $\beta$  signaling

کلمات کلیدی:

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