

Low level laser therapy for rheumatoid arthritis

Clinical bottom line:

There is some evidence that a minimum of four weeks of low level laser therapy (LLLT) is more effective than placebo in reducing rheumatoid arthritis pain and stiffness. However, this conclusion should be interpreted with caution due to limited data.

Low level laser therapy (LLLT) uses a light source that is thought to generate photochemical reactions in the cells and has been used as a non-invasive treatment for rheumatoid arthritis (RA) for about 10 years.

Systematic review

Brosseau L; Welch V; Wells G; Debie R; gam A; Harman K; Morin M; Shea B; Tugwell P. Low level laser therapy (classes I, II and III) in the treatment of rheumatoid arthritis (Cochrane review). In: The Cochrane Library, Issue 2, 2000. Oxford: Update Software.

Date review completed : January 2000

Number of trials included : 5 randomised controlled trials

Number of patients : 112 in laser treatment groups and 92 in placebo groups

Control group : placebo

Main outcomes : Pain, number of swollen joints, number of tender joints, physician and patient global, functional status, radiological change

Inclusion criteria were randomised controlled trials (RCTs); adults, clinical or radiological confirmation of RA diagnosis; all types LLLT; placebo or standard treatment control, pain or other outcome measures recommended for RA trials.

Reviewers conducted a comprehensive search strategy including the main databases and references of retrieved reports. Experts in the field were contacted for additional and unpublished data. Methodological quality of trials assessed using Oxford rating scale, maximum score is five (Jadad et al., 1996). A quantitative analysis on sub-sets of trials were performed. Reviewers calculated a standard mean difference (SMD), or an odds ratio (OR) for sub-sets of trials based on methodological quality of trials, duration and dose of treatment and site of RA involvement.

Findings

Five double-blind RCTs were included in the analysis. Quality scores ranged from one to five, the median score was three. All compared laser therapy with placebo. Trials varied in the number of laser treatments given, type of laser and wavelength used and outcome measures. Treatment sessions were two to three per week for three to four weeks for all trials except one, which treated patients for 10 weeks, three times a week. Pain was reduced from baseline in LLLT group but not in placebo group by 14 to 36% in three trials. Standardised mean differences (SMD) of pooled results found a statistically significant improvement in pain with LLLT, SMD -0.53 (95% CI: -0.85 to -0.22). Statistically significant improvements were also found for morning stiffness and tip to palm flexibility. All other outcomes were negative.

Adverse effects

No adverse effects were reported and no evidence of harm was found.