



Original Article

## Efficacy of high intensity laser therapy in the treatment of male with osteopenia or osteoporosis: a randomized placebo-controlled trial

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**Abstract.** [Purpose] To investigate the effect of high intensity laser therapy, alone or combined with exercise on pain, health related quality of life and fall risk in male with osteopenia or osteoporosis. [Subjects and Methods] 100 male patients with osteopenia or osteoporosis participated in the study. They had T-scores  $\leq -1.5$ . Patients were randomly assigned into four groups and treated with laser plus exercise, placebo laser plus exercise, laser alone and placebo laser in groups I, II, III, and IV respectively. Laser was applied to the lower back and hip regions. Exercises included aerobic exercises, weight-bearing, flexibility, and strengthening and balance exercises. Treatment were performed 3 times/week for 12 weeks. The measured outcomes were pain, health related quality of life and fall risk. [Results] All measured outcomes were significantly decreased post-treatment in all treatment groups. Laser plus exercises showed a higher significant effect than exercises with a least significant effect in the laser group in reduction of pain and quality of life. [Conclusion] High intensity laser is an effective modality for male patients with osteopenia or osteoporosis. Laser combined with exercise is more effective than exercises or laser alone in decreasing pain, fall risk and increasing quality of life after 12 weeks of treatment.

**Key words:** Exercises, High intensity laser therapy, Osteoporosis

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