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ORIGINAL ARTICLE

LASER versus electromagnetic field in treatment of hemarthrosis in children with hemophilia

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Abstract Children with hemophilia usually have recurrent joint bleeding that leads to joint damage, loss of range of motion, and restriction of mobility, therefore affecting the quality of life in these children. The purpose of this study was to compare the effects of low-level laser therapy (LLLT) to that of pulsed electromagnetic field (PEMF) in treatment of hemarthrosis in children with hemophilia. Thirty boys with hemophilia A with ages ranging from 9 to 13 years were selected and assigned randomly, using sealed envelopes, into two equal intervention groups. The study group I received the traditional physical therapy program in addition to LLLT, whereas the study group II received the same physical therapy program given to the study group I in addition to PEMF. Both groups received the treatment sessions three times per week for three successive months. Pain, laboratory investigations, swelling, and range of motion (ROM) of the affected knee joint, in addition to physical fitness were evaluated before, at the end of the sixth week and at 12 weeks of the treatment program. Laser group showed significant improvement in all measured variables after the sixth week of treatment when compared with PEMF. By 12 weeks of treatment, there was a significant improvement in pain, ROM, ESR and leucocytes levels in laser group compared with PEMF, while there was no significant difference in knee circumferences and the 6-min walk test (6MWT) between both groups. Both groups showed significant improvement at 12 weeks of treatment compared with that at 6 weeks. Both LLLT and PEMF are effective modalities in reducing pain, swelling, increasing ROM and improving physical fitness. Twelve weeks of treatment of both modalities demonstrated significant improvement than 6 weeks of treatment. Laser therapy induced significant improvement than electromagnetic therapy in treatment of hemarthrosis-related problems in children with hemophilia.

Keywords Laser · Electromagnetic field · Hemarthrosis · Hemophilia

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