



Low Level Laser Therapy & liver clinical research

Enhancement of Liver Regeneration by the Association of *Hyptis pectinata* with Laser Therapy

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Abstract:

Since new molecules that normally would accelerate regeneration can also be potentialized by light, the use of new substances combined with laser therapy seems to be a natural type of experiment. Therefore, the purpose of this study was to assess the effects of *Hyptis pectinata* leaves on liver regeneration after partial hepatectomy (PH) associated with laser therapy. Twenty-four rats were divided into four groups—PH(control), PHL (laser therapy), PH200 (200 mg/kg of *Hyptis pectinata*), and PHL200 (200 mg/kg of the plant and laser)—which were submitted to 67% hepatectomy. Laser treatment consisted of focusing the light on the remaining liver after hepatectomy. The data analyzed were serum levels of aminotransferases, liver regeneration, and mitochondrial function. Group PH200 showed a statistically significant decrease in AST levels, and PHL200 disclosed an augmentation in ALT levels. The liver regeneration index was significantly increased in group PHL200. Concerning liver mitochondrial respiratory assay, groups PH200 and PHL200 showed lower state 3 levels than groups PH and PHL. Group PHL showed an increase in state 4 levels and a reduction in membrane potential and RCR. The present study shows that the association of the aqueous extract of *Hyptis pectinata* leaves at 200 mg/kg with intraoperative laser therapy can stimulate liver regeneration and cause a reduction in liver mitochondrial respiratory function without altering its phosphorylative activity

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