Effect of Low Intensity Laser Therapy (LILT 660 and 780 nm) on Epithelial Cells and HSV in Culture

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Purpose: The mechanisms underlying the clinical effects of LILT relative to Herpes simplex lesions have not been established yet. The aim of this in vitro study was analyze the effect of LILT on epithelial cells and HSV in culture. **Material and Methods:** Cultures of HSV and epithelial cells (Vero cell line) were used. The irradiations were done using a GaAlAs laser (660 and 780 nm, focal spot of 4.0 mm^2). One, two and three irradiations with 6 h interval were done. The experimental groups were: Control: non irradiated; L1: 660 nm and 3 J/cm^2; L2: 660 nm and 5 J/cm^2; L3: 780 nm and 3 J/cm^2, and L4: 780 nm and 5 J/cm^2. Experiments were done at four different conditions: irradiation of non infected epithelial cells; irradiation of HSV infected cells; irradiation of the virus prior infection and, irradiation of epithelial cells prior infection. The cell viability was assessed by the MTT test and the cytopatic effect by light microscopy examination. **Results:** Non-irradiated cells grown at the ideal serum concentration condition (10 %) presented higher cell viability than all experimental groups grown in deficient media. The laser radiation does not change either the susceptibility of the Vero cell to the HSV infection or the HSV virulence; however, prolongs the cell viability of HSV infected cell. **Conclusion:** Positive benefits of LILT that have been reported clinically would appear to be due to host effects unrelated to viral replication in infected cells.