

**USING AlGaInP LASER IN CUTANEOUS RADIONECROSIS HEALING INDUCED BY <sup>125</sup>I SEED IN AN ATHYMIC MURINE MODEL**

Mosca RC<sup>1</sup>, Zeituni CA<sup>1</sup>, Lima LJ<sup>1</sup>, Costa FC<sup>1</sup>, Ribeiro MS<sup>2</sup> - <sup>1</sup>Energetic and Nuclear Research Institute (IPEN/CNEN-SP) - CTR - Radiation Technology Center, <sup>2</sup>Energetic and Nuclear Research Institute (IPEN/CNEN-SP) - CLA - Laser Application Center

**Introduction:** The malignant cancer incidence has increased significantly in recent years due to population growth and aging. The cancer treatment usually consists in individual or combined use of chemotherapy, surgery and radiotherapy depending on the etiology of the tumor. In cases where radiotherapy is used, and considering the therapeutic effects of radiation, specific severe complications can occur, ranging from erythema to radionecrosis. Studies showed that low-level laser therapy (LLLT) can be successfully used for tissue repair, depending on the light parameters and characteristics of the target tissue.

**Objective:** Evaluate the LLLT influence in radionecrosis guided tissue repair caused by continuous radiation emitted by <sup>125</sup>I seed.

**Methods:** Twelve athymic mice were divided into two groups: group A - 1 week before the implantation of <sup>125</sup>I seed (0,98 mCi) subcutaneously into the back of the mouse (n=4) it was submitted a LLLT, wavelength of 660 nm, 40 mW power with 20 s (20 J/cm<sup>2</sup>) daily until the radionecrosis emerge and continuous until the wound healing (33 days after the <sup>125</sup>I seed implantation); group B - using the same procedure as group A (n=4), but the LLLT was applied only when the radionecrosis emerge and continuous until the wound healing (45 days after the <sup>125</sup>I seed implantation). The control group (n=4) using the same procedure as group A but without LLLT treatment. All animals were photographed every 7 days and the wound sized were calculated by the Image J® software.

**Results:** The animals in group A, showing fast wound healing (in days) and smaller radionecrosis (in area) on comparison between group B and Control. No systemic or lethal sequelae occurred in any animal.

**Conclusion:** Under the parameters used in this study, LLLT was showing better results when applied before the <sup>125</sup>I seed insertion to repair radionecrosis. We are focusing our efforts in using higher energy laser and other parameters, to avoid the laser exposure daily.

**Key-Words:** <sup>125</sup>I seed, LLLT, radionecrosis, radiodermatitis, radiotherapy.

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