

Poster: 21

Evaluation of Aesthetic Modification in Human Bone Preserved after Sterilization by Ionizing Radiation

MATHOR, M B¹, SANTIN, S P¹, SANTOS, L A U², MARTINHO JUNIOR¹, A C, SOARES, F A N¹

¹Instituto de Pesquisas Energéticas e Nucleares - CNEN (São Paulo - SP - Brazil)

²Instituto de Ortopedia e Traumatologia do Hospital das Clínicas da Faculdade de Medicina da USP (São Paulo - SP - Brazil)

Key words

bone tissue, Tissue Bank, sterilization, ionizing radiation, aesthetic modification

Objective and introduction

Several patients are benefited with bones stored in Tissue Banks and used in orthopedic reconstructive surgery and implant as allograft. However, there is a strong concern to ensure safety in sterile allograft transplantation in order to provide efficacy. To minimize a probable contamination, ionizing radiation is used as a form of final sterilization, since the procedure is done in a controlled manner, avoiding possible changes in the bone matrix. In this work, the technique of colorimetry was used to evaluate aesthetic modifications caused by the preservation method, as well as the different irradiation doses.

Method

Eight fibulae from four donors were fractionated from these forty-eight samples lyophilized and forty-eight frozen samples were obtained. The samples were irradiated with doses of 15, 25 and 50 kGy. A colorimeter model was used and samples were analyzed at angles of 0° and 180°.

Results and discussion

A decrease in the intensity of the initial colors was noticed and it seems to be related to the processing and preservation of the samples, for the irradiated samples, only an increase in the yellowness was observed in the 50 kGy dose.

9 – Resumo e apresentação de painel intitulado “Evaluation of aesthetic modification in human bone preserved after sterilization by ionizing radiation” no 7° World Congress on Tissue Banking – WCTB7, Melbourne, Australia, no período de 12 a 14 de maio de 2014.