

RTOG Criteria to Evaluate Acute Skin Reaction and its Risk Factors in Patients with Head and Neck Cancer Submitted to IMRT Radiotherapy

Khaldoon M. Radaideh and Laila M. Matalqah

Department of Radiologic Technology

College of Medical Science

Al- Qassim University

Saudi Arabia

khaldoonmah1@yahoo.com

Abstract

The purposes of this work were to measure skin dose, evaluate and classify skin reactions through the Radiation Therapy Oncology Group (RTOG) criteria and characterize factors that can intervene in these reactions such as using multiple tangential beams with IMRT plans, patients' age, concomitant or previous chemotherapy and the accumulative dose delivered to the skin. This is a prospective study with 21 Nasopharyngeal cancer patients submitted to IMRT. Personal data were collected and in vivo measurements were performed using Thermoluminescent dosimeters (TLDs). All patients were monitored clinically for skin toxicity weekly. Grade 1 toxicity was observed in 8 patients, Grade 2 in 11 patients, and Grade 3 in 2 patients toward the end of treatment. Higher accumulative skin doses ($p < 0.05$) was identified as a risk factor for skin toxicity. However, previous or concomitant chemotherapy with radiotherapy and patients' age were not significant factors for the severity of skin reactions. The neck skin should be identified as a sensitive structure for dose optimization.