

# EVALUATION OF RADIATION INDUCED ESOPHAGITIS IN BREAST CANCER PATIENTS TREATED WITH SUPRACLAVICULAR FIELD IRRADIATION

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## INTRODUCTION:

The current approach of administering radiotherapy in breast cancer includes regional nodal irradiation (RNI) to all patients with node positive disease. With the esophagus lying in close proximity to the supraclavicular nodes (SCN) especially on the left side, the risk of exposure to the side effects of radiation from the supraclavicular field (SCF) is increased.

## AIM OF THE WORK:

Our aim was to determine the incidence and severity of acute radiation induced esophagitis (ARIE).

## METHODOLOGY

This was a single arm prospective study undertaken at Alexandria main university hospital. Patients with node positive disease, prescribed radiotherapy to the breast or chest wall plus SCF irradiation were identified and treated with 3D Conformal radiotherapy. Cervical esophagus was contoured from the beginning to the end of the CTV-SCN. Recorded variable included the mean and maximum dose to the cervical esophagus, mean dose to the full esophagus, length of in-field esophagus and tumor laterality.

Toxicity was assessed once weekly clinically by physician assessment and use of a questionnaire. The common terminology criteria for adverse effects (CTCAE) Version.5 was used to grade ARIE

## RESULT:

A total of 100 patients were selected. Forty-eight (48%) patients reported G2E. Using the ROC curve, we determined that the mean cervical dose >13Gy was a risk for developing G2E. Majority of patients developed G2E in the second and third week of treatment (42% and 29% respectively). On a univariate analysis, mean cervical esophagus dose was the most significant independent factor for developing with a p value<0.001. The other recorded variables were significant (Maximum dose cervical esophagus p value <0.001, mean dose-full esophagus p value< 0.001, length of in-field esophagus p value 0.002, tumor laterality p value 0.009). Correlation between gantry angle (right angles p value 0.440, left angle p value 0.826) and number of fields (p value 0.720) was not significant.

## CONCLUSION:

ARIE is common in patients treated with SCF. Patients who received a mean cervical dose > 13Gy had a 24-fold higher risk of developing G2E. Our results strongly support the routine contouring of the esophagus in patients receiving RNI and our constraints should be incorporated in future studies.



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