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Usefulness of tumor volumetry as a prognostic factor of survival in head and neck cancer.

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Source

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Abstract

BACKGROUND:

The TNM classification system of tumor stage does not always reflect the actual tumor mass present at diagnosis. This study aimed at evaluating the prognostic value of volumetric data regarding survival in head and neck cancer patients being treated with either cisplatin or carboplatin administered concomitantly with radiotherapy.

PATIENTS AND METHODS:

We retrospectively analyzed 107 patients suffering from squamous cell carcinoma of the head and neck in a Greek-German cooperative study (see Table 1). All patients were treated by radiotherapy and concomitant chemotherapy. 65 patients received chemotherapy with carboplatin and 42 with cisplatin. More than 6,200 CT scans were analyzed by digitalization of contours which subsequently led to the computation of the tumor volume (primary and macroscopic lymph node metastases).

RESULTS:

Median follow-up was 43 months and median survival 30 months. Median initial tumor volume was 32.5 ml (range 2.1-220.1 ml) in the carboplatin and 44.4 ml (range 3.2-202.5 ml) in the cisplatin group (see Figure 1). After treatment, tumor volumes did not differ significantly (median of 3.1 ml [range 0.0-167.1 ml] and 3.5 ml [range 0.0-166.0 ml], respectively). 41 patients (63.1%) died in the carboplatin group and 22 patients (52.4%) in the cisplatin group (see Figure 2). Pretherapeutic tumor volume was prognostic with respect to survival while TNM classification and age were not. Pretherapeutic tumor volume was negatively and percent decrease in tumor volume positively associated with survival (see Tables 2 and 3).

CONCLUSION:

Knowledge of the initial tumor volume adds valuable information in terms of prognosis. Initial tumor volume should be included in all future clinical trials regarding head and neck cancer patients.