The prognostic value of irradiated lung volumes on the prediction of intra-/post-operative mortality in patients after neoadjuvant radiochemotherapy for esophageal cancer. A retrospective multicenter study.

To assess the association between dosimetric factors of the lung and incidence of intra- and postoperative mortality among esophageal cancer (EC) patients treated with neoadjuvant radiochemotherapy (N-RCT) followed by surgery (S). Inclusion criteria were: age=10% in 6 months prior to diagnosis, risk ratio: 1.60, 95%CI: 0.856-2.992, p=0.043), Eastern Cooperative Oncology Group-performance status (ECOG 2 vs. 1, risk ratio: 1.931, 95%CI: 0.898-4.150, p=0.018) and postoperative pulmonary plus non-pulmonary complications (risk ratio: 2.533, 95%CI: 0.978-6.563, p=0.004) were significantly associated with postoperative mortality. There was no significant association between postoperative mortality and irradiated lung volumes. Lung V45 was the only variable which was significantly associated with higher incidence of postoperative pulmonary plus non-pulmonary complications (Exp(B): 1.285, 95%CI 1.029-1.606, p=0.027), but not with the postoperative pulmonary complications (Exp(B): 1.249, 95%CI 0.999-1.561, p=0.051). Irradiated lung volumes did not show relevant associations with intra- and...
postoperative mortality of patients treated with moderate dose (36 - 50.4 Gy) conventionally fractionated conformal radiotherapy combined with widely used radiosensitizers. Postoperative mortality was significantly associated with greater weight loss, poor performance status and development of postoperative complications, but not with treatment-related factors. Limiting the volume of lung receiving higher radiation doses appears prudent because of the observed association with risk of postoperative complications.

Zeitschriftentitel / Abkürzung:
J Cancer

Jahr:
2015

Band:
6

Heft / Issue:
3

Seiten:
254-60

Sprache:
ing

Pubmed:

TUM Einrichtung:
Klinik und Poliklinik für RadioOnkologie und Strahlentherapie

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Klinik und Poliklinik für RadioOnkologie und Strahlentherapie > 2015

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