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Results of nonoperative treatment for esophageal cancer

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From 1983 to 1987, 152 patients with esophageal cancer were treated at the Institute of Oncology, Ljubljana, Slovenia. Ninety-eight of these had radiation therapy alone, 36 radio- and chemotherapy, whereas 18 patients were treated symptomatically only. One, two and five-year survival of 69 irradiated patients with TD > 45 Gy was 32 %, 13 %, and 5 % respectively. There was a significant difference in survival according to the tumor dose delivered (i. e. > 45 Gy or < 45 Gy), length of tumor stenosis, and performance status. Chemotherapy, tumor site, duration of dysphagia, and sex had no influence on the survival. There was no difference in survival between patients treated symptomatically and those irradiated with TD < 45 Gy. The effect of radiotherapy and chemotherapy on dysphagia was poor: in only 1/5 of the patients the improvement lasted more than two months whereas in 2/5 of the patients dysphagia worsened already after two months. It seems reasonable to restrict radiotherapy only to patients with radical intent, these being chiefly the patients in good general condition and with short tumor stenosis.

Key words: esophageal neoplasms-therapy; radiotherapy, antineoplastic agents; survial analysis

Introduction

The prognosis for patients with esophageal cancer is poor. Irrespective of therapeutic modality, only few patients survive five years after diagnosis. It is important to choose such a therapy, that would influence the survival and diminish dysphagia at minimal hospitalization time. Standard therapies for esophageal cancer are surgery and radiotherapy; recently, the use of chemotherapy has been reported as well. The aim of this article is to present the results of nonoperative treatment of 152 patients with esophageal cancer at the Institute of Oncology, Ljubljana, Slovenia, in the period 1983–1987.

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Methods and patients

Of the 152 patients, 136 were male and 16 female, i. e. the sex ratio 8.5 : 1. The age of patients ranged from 35 to 86 years; the highest incidence was in the age group 50-65 years.

Tumor was microscopically confirmed in 141 patients. There were 126 epidermoid carcinomas, 7 adenocarcinomas, 6 undifferentiated and 2 small-cell carcinomas.

Site of primary tumor was as follows: 10 cervical, 30 upper, 76 middle and 36 lower thoracic region.

According to clinical TNM classificiation of

esophageal carcinoma valid in this time period there were 13 (9%) Stage I, 50 (33%) Stage II, 55 (36%) Stage III, and 34 (22%) Stage IV tumors. Twelve patients had fistuals, 11 bronchial or tracheal infiltration, and 2 invasion to the aorta. Palliative surgical procedures were performed in 15 patients: 8 gastrostomies, 5 tubus insertion, and 2 by-pass. Three patients had a naso-gastric tube inserted for the needs of nutrition.

Performance status (Karnofsky) was as follows: > 70 in 106 patients, 50–70 in 33 patients and < 50 in 13 patients.

The length of esophageal stenosis was estimated in 120 patients: up to 5 cm in 26, 5–10 cm in 74, and over 10 cm in 20 patients.

The duration of dysphagia was as follows: 1 month in 15, 1–3 months in 61, 3–6 months in 36, and over 6 months in 24 patients. For 16 patients there were no reliable data on the duration of dysphagia.

Radiotherapy was performed by a linear accelerator (x ray, 8 or 10 MeV), daily doses ranged between 1.5 and 3 Gy with two opposite or three planned fields, and maximum equivalent TD 70 Gy/7 weeks, mostly in split course regimen.

Chemotherapy consisted of 5-FU 1.000 mg/m^2 in 24^h infusion, on days 1-4, and cisplatin 90 mg/m^2 on day 1, repeated 1–4 times.
Ninety-eight patients were treated by radiotherapy alone, 36 by radiotherapy and chemotherapy, and 18 symptomatically only.

Of 134 irradiated patients, 69 received "radical" TD > 45 Gy/weeks, 51 patients < 45 Gy, whereas in 14 patients radiation was started but had to be terminated before TD 15 Gy had been achieved because of worsening of the patient's condition. So, only 69 "radically" and 51 palliatively irradiated patients could be considered.

Results

One-, two- and five-year crude survival of all 152 patients was 18%, 7%, and 4% respectively; median survival was 5.5 months (Figure 1).

The survival of irradiated patients was better:

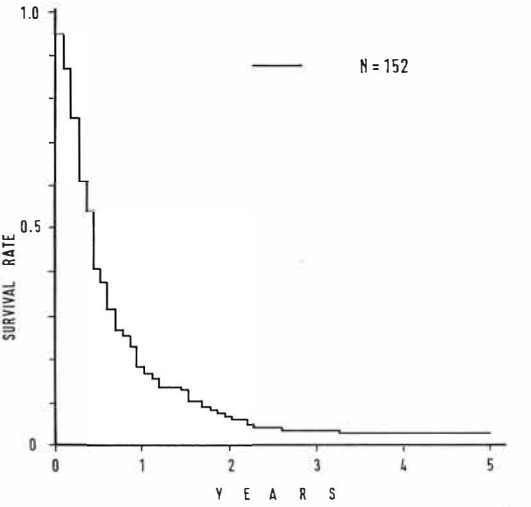

Figure 1. Crude survival of all treated patients.

in "radically" irradiated patients the rate was 32%, 13% and 5% respectively; median 8 months. The difference between "radically" and palliatively irradiated patients was significant (Figure 2).

There was no difference in the survival of our patients irradiated with palliative doses and those treated symptomatically (Figure 3).

Performance status and length of esophageal stenosis influenced the survival of irradiated patients (Figures 4 and 5).

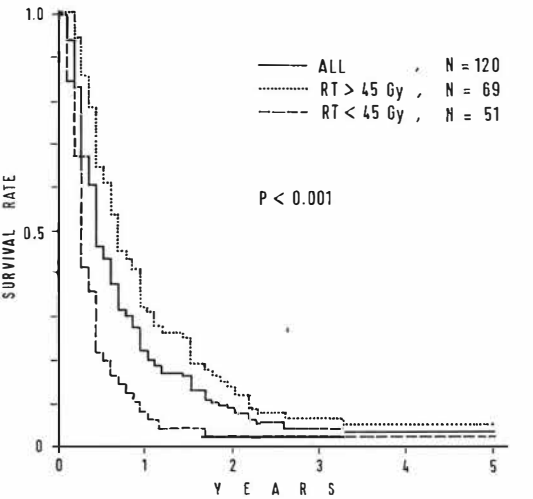

Figure 2. A comparison or irradiated patients by tumor dose.

Chemotherapy did not improve the survival of irradiated patients, irrespective of tumor dose (Figure 6), duration of dysphagia, tumor localisation and sex (all $p > 0.1$).

The influence of radio- and chemotherapy on dysphagia was poor: in only 21 of 101 evaluable patients the improvement lasted two months or more whereas in 39 of 101 patients swallowing ability worsened.

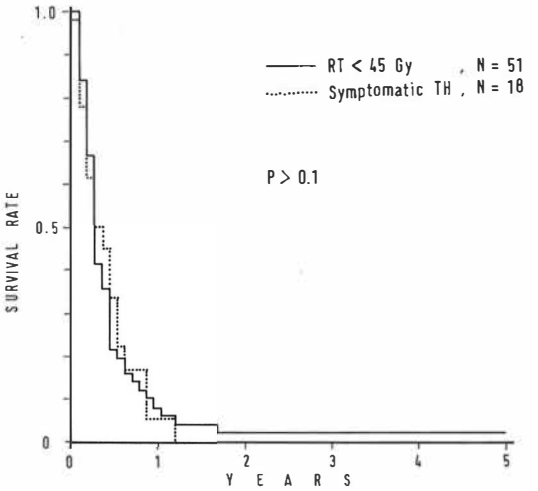

Figure 3. A comparison of survival by treatment method: radiotherapy with TD < 45 Gy and symptomatic therapy.

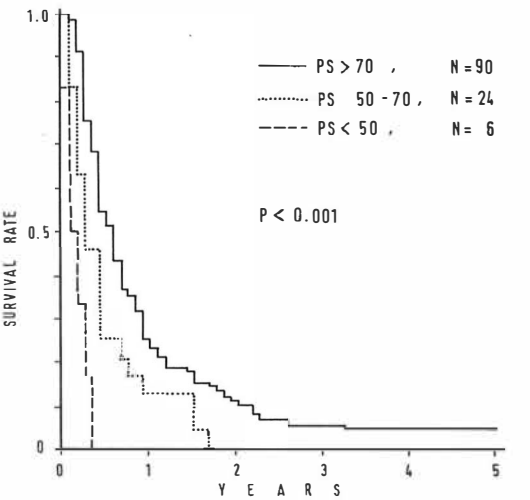

Figure 4. A comparison of irradiated patients by performance status.

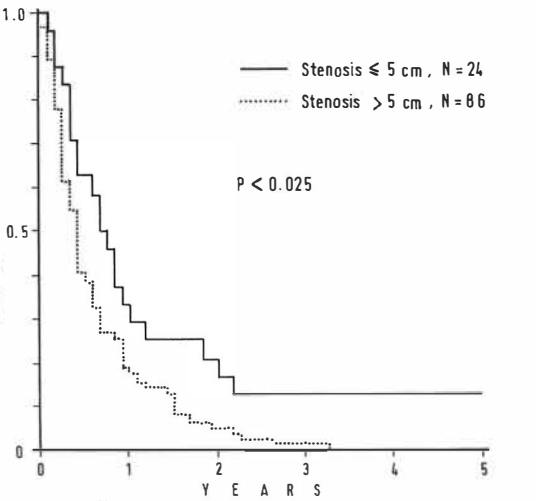

Figure 5. A comparison of irradiated patients by length of esophageal stenosis.

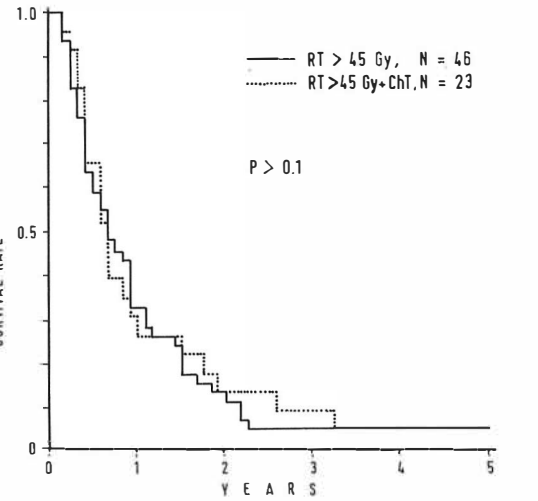

Figure 6. A comparison by treatment method: radiotherapy and radiotherapy + chemotherapy.

Our 14 selected patients with tumor stenosis up to 5 cm and performance status at least 70 were irradiated with TD > 45 Gy: their one-year survival was 50 % and five-year survival 21 % (Figure 7).

The survival of all patients with complications was very short: with fistulas maximum 10 months, with bronchial (& tracheal) infiltration and invasion of the aorta 18 months. All 15 patients with palliative surgery died within 8

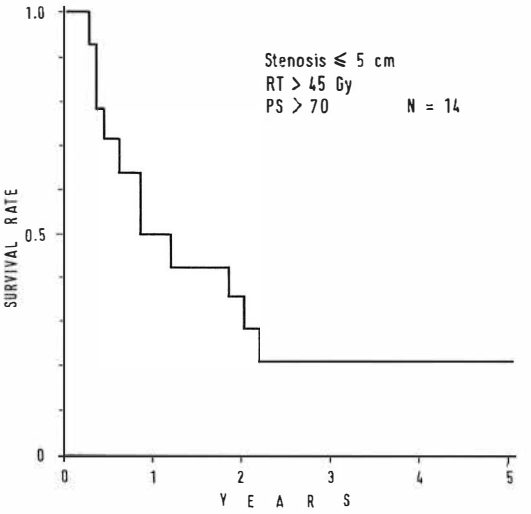

Figure 7. Crude survival of selected patients.

months, and 3 patients with naso-gastric nutrition tube within 3 months, despite all our therapy.

Discussion

Paterson[2] stated 30 years ago "that with more advanced oesophageal cancer anything we can offer gives poorer palliation than simple surgical measures, such as tube or gastrostomy. Even where obstruction is temporarily relieved by radiation the duration of such relief is short and the discomfort of achieving it considerable." Obviously we were not enough aware of that. Radiation after palliative surgical procedure which rendered feeding possible was ineffective: the swallowing did not improve and all patients died soon. Usefulness of our therapy in patients with complications due to local progression is questionable as well: in these patients radical radiation was not possible, and there was no difference in survival between palliatively irradiated and symptomatically treated patients at all.

Unfortunately, the therapeutic effect on dysphagia was poor: in 1/5 of the patients swallowing improved although 18 of 21 were irradiated with "radical" doses. However, it is difficult to draw a distinction between radical and palliative radiation doses at five-year survival about 5 %. In our patients radiation with TD over 45 Gy resulted in significant better survival than with TD bellow 45 Gy. This is in agreement with the results reported by Albertsson et al.[3]

Our survival results could be compared with the data of Earlam and Cunha-Melo:[4] 8489 irradiated patients reported in 49 papers, had one-, two- and five-year survival of 18 %, 8 %, and 6 % respectively.

Paterson[2] considered patients in good general condition and with lesions not exceeding 5 cm as suitable for radical radiation therapy. The survival of our selected patients conforms to this opinion. The shortening of stenosis improved the survival in the absence of metastases.[5] Tumor length served as a basis for staging according to TNM classification of 1978.[1] Okawa et al.[6] found a significant difference between the survival of patients with stenosis up to 5 cm of length, and over 10 cm. On the contrary, Slevin and Stout[7] did not esstablish statistical difference in survival between cases with stenosis of 5 cm or less compared with 6 to 10 cm long stenoses, and Albertsson et al.[3] did not find difference with tumors < 9 cm and tumors > 9 cm.

There was no relationship between tumor site and survival rate in our patients. This is in accordance with the observations of other authors.[3, 5, 6]

Chemotherapy did not improve the survival of our irradiated patients. Also in the case of "radical" radiation doses we could not achieve the results reported in literature.[8–11]

Hospitalization time of our patients treated by chemotherapy was longer because treatment on outpatient basis was not possible.

Our treatment results suggest that radiotherapy is reasonable only with radical intent in esophageal cancer patients in good general condition and with short tumor stenosis; for the time being, chemotherapy should be performed only with protocols.

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