

consisted in radiotherapy twice-daily delivered: first week: 2x1,20 Gy "elective fields", the remaining three weeks 1,80 Gy "elective fields" and 1,20 Gy boost on involved areas by oblique fields. Total dose was 57 Gy. Conventional treatment techniques were employed. RT-BOOST technique was conformally planned and delivered, total dose was 56,7 Gy in 21 fractions (per fraction: 1,9 Gy to limited elective areas and concurrent boost of 0,8 Gy to the GTV) and 26 days.

Results: With a follow-up period ranging from 1 to 19 months, there is no difference in the compliance with the treatment-plan, treatment tolerance and response rate in the two analysed groups. In all but two patients treatment plan was realised. In RT-BOOST group treatment was discontinued in one patient, because of prolonged III° EORTC/RTOG oesophageal toxicity. In RAHIP group in one patient treatment was prolonged by 10 days because of pneumonitis (II° lung toxicity). One case of III° oesophageal toxicity was observed in each group. There was no increase in toxicity among patients receiving chemotherapy before radiotherapy. The response rate was similar in both analysed groups (RAHIP: 73% PR, 7,5%, CR; RT-BOOST: 65% PR, 7% CR). Estimated by Kaplan-Meier actuarial one-year survival rate method was 66% and actuarial one-year progression free-survival rate was 58% for the entire group.

Conclusions: Preliminary results of accelerated radiotherapy for locally advanced NSCLC seem promising. Additionally a good compliance with the treatment in both groups allows to work out a phase III study dealing with this problem.

41.

ESTIMATION OF DOSE DISTRIBUTION ACCORDING TO DOSE VOLUME HISTOGRAMS (DVH) IN CONFORMAL RADIOTHERAPY

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Aim: The evaluation what kind of statistical informations concomitant with DVH are essential in estimations of dose distribution in conformal planning of radiotherapy.

Method: On the base of test case -- cancer of the base of tongue, irradiation plans for different

sizes of irradiation boost field margins were analysed. DVHs - differential and cumulative for selected critical organs and target volume have been accounted. On base of standard deviation and minimal doses in select volumes target and critical tissues have been estimated. Then probability of local control the risk of complications have been expected.

Results and discussion: The modelled results show, that graphic representation of DVH is not sufficient information itself in estimation of dose distribution. Statistical parameters like modal dose, standard deviation determine essential supplement of graphic dose distribution. Especially standard deviation contains indispensable information. The histogram differential and cumulative should be used together for estimations of dose distribution. It appears that estimation of dose distribution in target volume should be based on cumulative histogram and estimation of dose distribution in critical organs - on differential histogram.

42.

RESULTS OF DAILY CONTROL OF PATIENTS SETUP TREATED ON HOLYCROSS CANCER CENTRE IN KIELCE BETWEEN 1 APRIL 2000 AND 31 MARCH 2001

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Purpose: Presentation of quality control system being in force in Kielce and results of patients' setup reproducibility and repeatability.

System description: Almost all patients treated in our hospital begin their treatments on Monday. For every patient treated with radical intent portal films are taken and compared with reference images obtained at simulator during the first fraction. After digitizing of both portal and reference films the comparison is performed by means of PIPS-PRO software. Comparison has to be completed until Wednesday morning when results are presented to radiotherapists on check meeting. Action levels specific to individual localization are defined and if difference between portal and reference film exceeds the specific level, another portal film is taken on the next day. If the difference still exceeds the action level the patient is directed again to simulator and the procedure starts from the very beginning. Until 31.01.2001 more than

442 pairs of films for 226 patients were analyzed.

Results: For 35 patients action level was exceeded (gynecologic 13, prostate 2, rectum 6, breast 7, brain 5 and lung 2). For 10 patients the second portal film was significantly different from reference film and simulation was repeated. Only in 5 cases systematic errors were found (gynecologic 2, rectum 2 and brain 1). PIPS-PRO software is proven to be a very useful tool for portal control.

43.

NEOADJUVANT RADIOTHERAPY OF EPIDERMIOID LUNG CARCINOMA PATIENTS UNDER SHORT TERM HYPOXIA CONDITION

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Main method of treating the epidermoid lung carcinoma patients is a surgery which gives a 5-year survival of 53–70% of patients with 1 and 2 stage of disease. However, if metastases in lymphatic nodes of mediastinum are present then number of patients surviving this period considerably decreases. To increase surgery effectiveness one seeks the combined therapy methods using, in particular, neoadjuvant radiotherapy. We have studied such a therapy method which is to be applied during the pre-operative period of hypoxiradiotherapy. Date of 237 epidermoid lung carcinoma patients has been analyzed, mainly for the 3-d stage of disease: 1-st group of 123 patients was given a surgery treatment, the second one, of 114 patients, received an additional intensive pre-surgery radiation (5 Gy daily, 20 Gy) under condition of a short term hypoxia of a short term hypoxia caused by a gas mixture of 10% of oxygen and 90% of nitrogen. Surgeries were carried out during the first 3 days after the completing the radiation treatment. Mechanical conditions of the surgery procedure, blood losses and after surgery complications were similar in both cases. The number of cases of general radiation reactions decreased 3 times, all the cases being limited to the 1 and 2 degrees on the RTOG scale. After analysis of deferent factors, which define the result of treatment, significance the most reliable were the size of primary lesion and presence of mediastinum lymphatic nodes metastasis. Was shown rising of 3-year survival

rate after combined treatment vs. operative treatment only.

44.

RADIATION THERAPY IN THE TREATMENT OF PARTIALLY RESECTED LOW-GRADE CEREBELLAR ASTROCYTOMAS IN ADULT PATIENTS

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Between 1975 and 1995, ninety two adult patients received postoperative irradiation for subtotally resected cerebellar tumours, of which 31 were low-grade (I-II) astrocytomas. The median dose of 51 Gy was given. 29 patients showed good tolerance to treatment. The overall 5 and 10-year actuarial survival rates were 78% and 61 % respectively. Age of patients had the strongest influence on prognosis. Young patients (up to 20 years) achieved the 10-year overall actuarial survival rate of 85%, while older patients had poorer survival with the 10-year overall actuarial survival rate of 46% ($p=0.0205$).

45.

IMPACT OF Hb LEVEL DURING POSTOPERATIVE RADIOTHERAPY OF PATIENTS WITH LARYNX CANCER

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Aim: assessment the influence of low level of Hgb on the locoregional outcome of postoperative radiotherapy patients with advanced cancer of larynx.

Material and methods: An retrospective analysis of two hundred fifty four patients with larynx carcinoma with stage III or IV squamous cell carcinoma of larynx who were treated between January 1993 and December 1996 was performed. Postoperative radiotherapy was performed in conventional way to total dose of 60 Gy, 5 times a week. Of 254 patients, 86 patients (34%) were considered to have a low level of hemoglobin (below 13 g/dl) prior the beginning of radiotherapy and 56 patients (22%)