

# Evaluation of HDR brachytherapy fraction dose on local control and complications rate in patients with cervical cancer IB and IIA

Kraszkiewicz Malgorzata, Kellos-Slecza Sylwia, Bialas Brygida, Fijalkowski Marek, Szlag Marta, Raczek-Zwierzycka Katarzyna

Maria Sklodowska-Curie Memorial Cancer Center and Institute of Oncology, Gliwice Branch, Poland

**Purpose:** The aim of this study was to evaluate of HDR-BT fraction dose on local control and complications rate in patients with cervical cancer IB and IIA treated with postoperative HDR-BT and external beam radiotherapy (EBRT).

**Material and methods:** From January 1996 to December 2002 in Maria Sklodowska-Curie Memorial Cancer Center and Institute of Oncology Gliwice Branch 150 patients with cervical cancer IB and IIA were treated with postoperative radiotherapy. All patients received EBRT (total dose: 46-54 Gy in 2 Gy or 1.8 Gy per fraction). They were divided into two groups according to fraction dose received in HDR-BT: group I: 5 Gy (twice a week to total dose 25 Gy) and group II: 7.5 Gy per fraction (twice a week to total dose 37.5). The reference point was 0.5 cm from the applicator surface. Acute and late radiation toxicity was evaluated according to EORTC/RTCG.

**Results:** In group I we observed severe acute radiation toxicity only in rectum in one case (2%). Late bladder radiation toxicity was observed only in grade I, late severe rectum complications were assessed in two patients (3.8%). In group II we observed severe acute radiation toxicity only in rectum in one case (1%). In group II two patients (2%) had late severe radiation reaction in bladder, and five patients (5%) in rectum. We observed statistically significant difference in frequency of late severe radiation toxicity in bladder ( $p < 0.05$ ) and in rectum ( $p < 0.05$ ) between group I and group II. Total number of local recurrences in our group was 11 (7.3%): one in group I and 10 cases in group II. There was no statistically significant difference in frequency of local recurrences between group I and II ( $p > 0.05$ ).

**Conclusions:**

1. Higher fractionation doses in HDR-BT increase the total number of late severe complications in rectum and bladder.
2. The escalation of fractionation dose in HDR-BT does not result in better local control in women with cervical cancer IB and IIA.

3. In our experience 5 Gy per fraction in postoperative HDR-BT combined with EBRT is well tolerated and provides good local control.