

# Excellent local control by HDR-brachytherapy of the vaginal vault with three fractions of 5-6.7Gy in 5mm depths in postoperative early stage endometrial carcinoma



Sabrina T. Astner<sup>1</sup>, Antonela Heydemann-Obradovic<sup>1</sup>, Reinhard Thamm<sup>1</sup>, Dieter Hölzel<sup>2</sup>, Marion Kiechle<sup>3</sup>, Cornelia Höss<sup>4</sup>, Michael Molls<sup>1</sup> and Barbara Röper<sup>1</sup>

Klinik und Poliklinik für Strahlentherapie und Radiologische Onkologie<sup>1</sup> und Frauenklinik<sup>2</sup> des Klinikums rechts der Isar der Technischen Universität München, Ismaningerstr.22, 81675 München. <sup>3</sup>Tumorregister des Tumorzentrums München, Klinikum Großhadern, Marchioninistr. 15, 81377 München. <sup>4</sup>Frauenklinik des Kreiskrankenhauses Ebersberg, Pfarrer-Guggetzer-Str. 3, 85560 Ebersberg



## Purpose

In endometrial carcinoma the optimal dosage and fractionation scheme for postoperative brachytherapy to the vaginal vault is still under debate. Therefore we analysed our institutional data from treatments with low total doses regarding the spectrum found in the literature.

## Patients and Methods

From 1990 until 2002 142 patients with endometrial carcinoma underwent post-operative vaginal vault HDR-brachytherapy with Iridium-192 in curative intent as sole adjuvant treatment after hysterectomy +/- lymphonodectomy. For follow-up patients were contacted, interviewed on the phone and invited for re-examination along with thorough exploration of all available data from referring clinics, physicians, relatives and the tumor register Munich.

## Results

Hospital charts and follow-up data were available in 139 patients (98%) who form the basis of the following evaluation. Median age at diagnosis was 64.7 yrs, range 37.2 – 88.8 yrs.

G \ T	1	2	3	x	%
1a	4	1	1	0	4
1b	13	43	10	0	47.5
1c	6	25	13	0	32
2a-b	5	12	0	0	12
3a	0	4	0	0	3
x	0	1	0	1	1.5

Tab. 1

**Tumors:** Histopathological data was re-classified according to the 6th edition of TNM 2004, see **Tab. 1** for details. Grading was G2 in 62% and classical endometrioid adenocarcinoma found in 84% of histologies. 1 patient presented with pelvic nodal involvement, all others were cN0 (44%) or pN0 (55%).

**Brachytherapy:** Institutional's protocol for vaginal brachytherapy changed in 1998 from former 3x10Gy prescribed to the surface of the vaginal cylinder [94 of 97 pts.] to latter 3x5Gy at 5mm tissue depths [41 of 42 pts.] for the upper two thirds of the vaginal length, preferably in weekly fractions (range of total treatment time 6-21 days).

**Survival data and recurrences:** After a median follow-up of 7.7yrs (8.9yrs for survivors, range 3.1-15.4yrs) 5- and 10yr-overall survival was 87% and 68% (**Fig. 1**), with a disease-specific survival of 96% and 93%, respectively (**Fig. 2**). Of 42 patients deceased, 8 were known to be endometrial cancer-related, 12 cardiovascular, 10 second primary, 7 others and 5 unknown. 10 patients had a recurrence of any sort, 7 with distant spread.

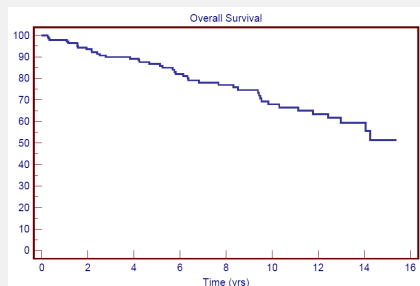


Fig. 1

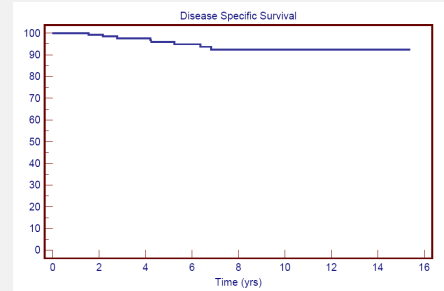


Fig. 2

Altogether 2 vaginal (including the pN1 patient) and 4 regional recurrences in the pelvis occurred. 10yr-actuarial local control was 98% (**Fig. 3**), regional control 97% and metastasis-free survival 94%. De-escalation of brachytherapy dosage did not lead to increase of recurrences.

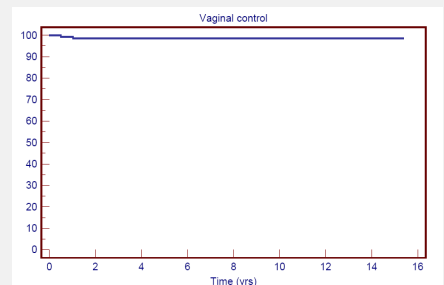


Fig. 3

**Late toxicity:** Treatment was well tolerated: apart from one GI-fistula not clearly related to radiotherapy, no other late toxicity > grade 2° RTOG was reported (toxicity data on 81 pts.).

## Conclusion

In endometrial carcinoma postoperative vaginal brachytherapy with 3 x 5Gy in 5mm tissue depths can be recommended as it serves the ALARA principle with an excellent therapeutic ratio.