Conclusion: Our study demonstrates that the pelvic lymph nodes receive a significant dose contribution from brachytherapy in cervical cancer, when employing the Manchester prescription system. This must be taken into account during external beam radiotherapy planning, and adequate external beam boost doses calculated to achieve cumulative tumoricidal doses to pelvic nodal disease.

PV-0034
HBR BT alone in endometrial cancer: up-date of Piedmont experience in 18 years (71 patients)
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Purpose or Objective: Endometrial cancer is the mainly gynaecological malignancy, 80-85% in stage I at diagnosis. The standard primary treatment remains TAHB&SO, with appropriate surgical staging. The epidemiology of this disease, favours elderly, obese women with multiple medical problems (hypertension, diabetes, cardiovascular diseases, coagulation disorders, respiratory disorders) that render some of them medically inoperable. RT alone is the only efficient option for these women. BT is the main component in this cohort of patients (pts).

Material and Methods: September 1997-September 2015: 90 pts RT alone, 71 BT HBR alone. Median age 79 years (range 57-93). Staging: clinical examination, TVUS, MR or CT scan and fractionated curetttage. Stage Ia 32 pts, Stage Ib 36 pts, Stage II 3 pts. OS, DSS, LC and late side effects were analysed retrospectively. Follow-up > 10 years (mean 57 months). BT HBR with Rotte “Y” applicator, plus VBT in stage II. Dose prescription at “uterine points” that are two points located 1 cm over the middle of a line drawn between the tips of the two ends of the “Y” applicator and at series of points placed laterally to the tandem according to the pre-treatment imaging data. We treat the entire length of the uterus to ensure coverage of the fund. To maintain the bladder and rectal maximum point doses below 100% of the prescribed dose we optimize with TPS. Until 2002 BT was performed 4-5 times, weekly, mean dose 29.3 Gy (range 18-35 Gy); from 2003 (42 pts) we deliver 30 Gy in five frs, 6 Gy each b.i.d. schedule, 6 hours interval between frs.

Results: 5 years OS, DSS and LC: 52.1%, 85.9%, and 91.2%. Stage Ia: 56.3%, 87.5%, and 90.6%; Stage Ib: 50%, 86.1%, and 94.4%; Stage II: 33.3%, 66.7%, and 66.7%. DSS was not affected by tumour grade or age. One patient had a PD, 6 (10.6%) developed recurrence after a median of 13 months (3 with distant metastases), 2 (3.3%) a lymph node recurrence with distant metastases. One patient has a GE grade III late side effect (1.8%) at 5 years, not related with rectal dose.

Conclusion: HBR BT with “Y” applicator is a very effective treatment modality with good LC rates and suitable DSS for pts who are not fit for surgery. This technique has proven to have a low risk of acute complications and long-term side effects. Longer follow-up will be required to document the incidence of late effects using the b.i.d. schedule. In the short term, it seems that this approach is a feasible way to limit the number of procedural complications and length of hospital stay and bed rest.

PV-0035
Electronic brachytherapy for basal cell carcinoma: two prospective pilot trials with different doses
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Purpose or Objective: Basal cell carcinoma (BCC) is a very common cancer in the Caucasian population. Treatment aims to eradicate the tumor with the lowest possible functional and aesthetic impact. Electronic brachytherapy (EBT) is a treatment technique currently emerging. This study aims to show the outcomes of two consecutive prospective pilot clinical trials using different radiation doses of EBT with Esteya® EB system for the treatment of superficial and nodular basal cell carcinoma.

Material and Methods: Two prospective, single-center, non-randomized, pilot studies were conducted. Twenty patients were treated in each study with different doses. The first group (1) was treated with 36.6 Gy in 6 fractions of 6.1 Gy and the second group (2) with 42 Gy in 6 fractions of 7 Gy. In one case the 6.1 Gy/fraction resulting from the theoretical RBE calculation was used, and in the second arm (7 Gy/fraction) the same dose as the Valencia applicator study was used. Cure rate, acute toxicity and late toxicity related to cosmesis were analyzed in the two treatment groups.

Results: In group 1, a complete response in 90% of cases was observed at the 1 year follow-up, whereas in group 2 the complete response was 95%. Tumor persistence or recurrence was suspected clinically and dermoscopically in two patients in the first group at 3 and 6 months respectively and in one patient in the second group at 1 year follow-up. The differences with reference to acute toxicity and the cosmetic results between the two treatment groups were not statistically significant.

Conclusion: Our initial experience with Esteya® EB system to treat superficial and nodular BCC shows that a dose of 36.6 Gy and 42 Gy delivered in 6 fraction of 7 Gy achieves a 90% and 95% clinical cure rate at 1 year respectively. Both groups had a tolerable toxicity and a very good cosmesis.

PV-0036
Dosimetric evaluation of 3D printed applicators for High Dose Rate brachytherapy
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Purpose or Objective: Feasibility and dosimetric study of 3D-printed cylindrical and skin mould applicators for High Dose Rate brachytherapy (HDR-BRT) using acrylonitrile butadiene styrene (ABS).

Material and Methods: Three cylindrical applicators (1 as reference and 2 as test) with a single 2.5 mm catheter channel and a 1 mm radial slit for radiochromic film support were 3D printed (HP3DX100, Hamlet, Dublin, IE) using ABS plastic. The reference had the radiochromic slit in contact