sites were vagina in 14, vagina and vulva in 4, uterine cervix in 3, and vulva in 2. The T stage was r2a in 2, 3a in 3, 4a in 17 and r4 in 1. The clinical stage was stage II in15, r stage II in 3, stage III in 4, and stage IV in 1. The irradiated dose was 57.6 GyE in 22 and 64 GyE in 1. Twelve patients were treated with DAV regime (DTIC, ACNU, VCR), and 8 patients were treated with IFN-β for induction and /or adjuvant therapy. One patient had been used IFN-β during radiotherapy. Acute toxicities greater than grade 2 were colitis in 4, diarrhea in 4, fecal incontinence in 1, malaise in 1,dermatitis radiation in 11, urinary frequency in 2, urinary infection in 1, urinary tract pain in 9, perineal pain in 10, and vaginal pain in 9. One patient who had been treated with concurrent IFN-β developed sepsis. The median follow-up time was 17 months (ranged 1 to 53 months). One case of grade 3 bowel reaction, one case of grade 2 bowel reaction, and one case of grade 3 bladder reaction have been observed. Twelve patients have recurred, in-field in 3,marginal field in 2, regional lymph node in 4 and distant in 9. Ten patients were dead, two were of intercurrent disease and other 8 were of melanoma. The 2-year local control rate and overall survival rate were 80% and 56% respectively.
Conclusions: Carbon ion radiotherapy for gynecological melanoma offered therapeutic effectiveness with acceptable toxicities of normal tissues.

PO-0733
Diffusion weighted magnetic resonance imaging predicts for relapse free survival in patients with vault cancers.
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Purpose/Objective: To investigate diffusion weighted imaging (DWI) as an imaging biomarker in women undergoing chemoradiation for vault cancers.
Materials and Methods: From October 2008 to May, 2012 patients scheduled to undergo chemoradiation and vaginal brachytherapy for vault cancers were included. All underwentT2-Weighted (T2W) and DWI before chemoradiation. Gross tumor volume (GTV), lateral extent, apparent diffusion coefficient (ADC) and presence of regions of focally restricted diffusion (or intratumoral diffusion heterogeneity) were determined at baseline. Immediate response to chemoradiation was categorised as either partial or complete and long term response as local relapse /disease free or not. Receiver Operator Characteristics (ROC) curve identified thresholds of GTV and ADC that best predict for partial response. Data was categorized across identified cut off's for univariate and cox multivariate regression analysis in SPSS version 15.0.
Results: The study included 29 patients with a median follow up of 16 months (3-35 months).The median GTV was 27 cc (3.4-110cc). Central and lateral disease was present in 13(44.8%) and 16 (55.2%) patients respectively. The median ADC was 1.1x 10^{-3} mm^2/sec (0.75-1.37X10^{-3} mm^2/sec) and 12/29 (41.3%) patients had focal regions of restricted diffusion. All received concurrent chemoradiation to a dose of 50 Gy/25#/5 weeks with concurrent cisplatin. This was followed by interstitial brachytherapy (20Gy/5#/3 days). Overall 16/29 (55.1%) patients had radiological partial response at 50 Gy. At a median follow up of 16 months, 20/29 (68.9%) patients were disease free and 21/29 (72.4%) were without local recurrence. On univariate analysis bulky disease (81.8%vs. 35.2%; p=0.01), lateral disease extent (75% vs. 30.7%; p=0.01) predicted for partial response at completion of treatment. However on multivariate analysis only ADC value >1 x10^{-3} mm^2/s predicted for partial response (63.1% vs 33.1%; p=0.02). On multivariate analysis in addition to tumour bulk (p=0.01), focal regions of ADC restriction were identified as an independent factor impacting long-term local relapse free (p=0.01) and disease free survival (p=0.01)
Conclusions: Tumor ADC and intratumoral focal regions of restricted diffusion independently predict for partial response and reduced local relapse free and disease free survival in women undergoing chemoradiation for vault cancers. Results of the study need validation in larger cohort.

PO-0734
Dosimetric parameters of escalated dose radiotherapy in nodal positive cervical cancer patients
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Purpose/Objective: Metastatic lymph nodes (LN) are one of the most important prognostic factors for cervical cancer patients (PTS). The standard prescribed radiotherapy dose fails to successfully control the nodal disease and the dose escalation with conventional techniques is connected with dose limiting toxicities. The aim of this study is to evaluate dosimetric parameters and early and late toxicities of dose escalated intensity modulated radiotherapy (IMRT).
Materials and Methods: The study included cervical cancer PTS with PET-CT positive LN treated with escalated dose of RT with curative intent. The dose of 50.4 Gy (1.8 Gy daily) was prescribed to the elective nodal volume and gross tumor volume. In case of positive LN in level of the arteria Iliaca communis the dose of 45 Gy was prescribed to the paraaortic region and in case of involved paraaortic LN dose was 50.4 Gy (Phase I). Primary tumors < 4 cm in diameter received boost of 5.4 Gy and for those > 4 cm in diameter a boost of 9 Gy (Phase II). PET-CTpositive LN received consecutive boost to total dose of 59.4 Gy, or simultaneous integrated boost (SIB) to a total dose of 62 Gy. IMRT was followed by 3D conformal HDR intrauterine brachytherapy with a single fraction of 6 Gy to a total dose of 18 Gy. We evaluated summed Dose Volume Histograms (DVH) data for all patients.Toxicities were graded according to the CTCAE v3.0.
Results: In period between Oct. 2006 and Feb. 2012, 21 PTS with median age of 63 Y (range: 48-101Y) were treated. 16 PTS had tumor > 4cm and median number of positive LN pro patient was 3 (range: 1-5 LN). 8 PTS were diagnosed with positive paraaortic LN. 12 PTS were treated with extended field RT. 14 patients received SIB and 7 consecutive boost to the positive LN. 2 PTS received IMRT boost to primary tumor of 72 Gy. Median follow-up time was 25 months (range: 5-51months). 20 PTS received concomitant weekly cisplatine chemotherapy. Median bladder volume was 127 cm^3 (range: 20-591 cm3) with median dose to the organ of 52 Gy. Median intestine volume was 1840 cm^3 (range:1000-4798 cm^3) with median dose to the organ of 21 Gy. Median rectal volume was 75 cm^3 (range: 23-250 cm^3) with median dose to the organ of 53 Gy. Median ratios of total structure volumes (DVH parameters of summed plans) with corresponding doses are showed in Table 1. Median PTV volume for phase I, phase II and nodal boost were 1431 cm^3(range: 1037-2248 cm^3), 461 cm^3 (range: 216-961cm^3) and 37 cm^3 (range: 5-201cm^3) respectively. The therapy was well tolerated. We record no toxicities from side upper GIT, rectum, bladder and vagina in 38%, 86%, 76% and 81% PTS respectively.Two PTS developed acute toxicities grade 3 (1 acute diarrhea and 1 cystitis). One patient has vaginal dryness grade 3 as a late sequel of RT. There were no toxicities greater than grade 3.

Table 1. Median DVH Parameters of summed plans – Median Volume Percentage (Range)

	V20	V30	V40	V50	V60
Bladder	100 (88-100)	97 (71-100)	82 (82-100)	58 (14-98)	0 (0-39)
Rectum	99 (89-100)	97 (88-100)	86 (75-100)	65 (13-95)	0 (0-45)
Intestine	52 (29-74)	29 (15-42)	16 (5-31)	8 (0-19)	0 (0-2)

Conclusions: The dose escalation is feasible and seems to have a satisfactory profile of toxicities. We succeed to fulfill the dose constraints comparable with those in the literature.

PO-0735
Influence of bladder distension on organ at risk wall doses in intracavitary brachytherapy of cervical cancer.
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Purpose/Objective: 3D image based treatment planning has allowed examination of dose volume parameters rather than point doses in intracavitary brachytherapy (ICBT) of cervical cancer. The degree of bladder distension may change doses to organs at risk (OARs) & thereby incidence of complications. The purpose of the study was to assess impact of bladder volume on OARs wall doses during ICBT of cervical cancer patients.
Materials and Methods: A prospective study performed in 10 patients with cervix cancer, stages II-III, treated by HDR-ICBT 600cGy / fraction for 3 fractions to Point A using conventional radiography based treatment planning. For dosimetric study all patients after insertion of ICBT applicator underwent pelvic CT scans with foley's catheter in place (defined as empty bladder, EB) & thereafter injecting 300ml of normal saline in bladder, defined as full bladder