mean post-treatment follow-up was 11 months. Inhibition of growth or a reduction in size was obtained in 12 of 18 patients: 5 with complete response, and 7 with partial response. There was a local complete response with other single lesions appearing in two patients, and a progressive disease in 4. Among responders, the median post-treatment volume of the tumor was 22 mL (range 5−55 mL), with an overall reduction rate of more than 70%. Toxic events were observed in 11 patients: transient hepatic dysfunction was evident in 7, and pleural effusion, pulmonary embolism, partial portal vein thrombosis, and upper gastrointestinal tract bleeding in one patient each. Three patients with progressive disease died during follow-up, both developing severe liver failure.
Conclusions: Using stereotactic radiosurgery a good local control of the disease may be achieved, with limited toxicity. This promising treatment strategy should be further studied in larger series, representing an acceptable alternative in patients with liver metastases unsuitable for surgery.

6032 POSTER

Helical tomotherapy (HT) for the treatment of anal canal cancer: preliminary clinical results, and dosimetric comparison between HT and intensity-modulated or 3D conformal radiotherapy

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Background: To report a single-center experience in 19 patients (pts) with anal canal cancer treated with helical tomotherapy (HT) and concurrent chemotherapy, and compare the dosimetric results with fixed-field intensity-modulated radiotherapy (IMRT) and 3D conformal radiotherapy (3D RT).
Materials and Methods: Between 2007 and 2008, 19 consecutive pts were treated with HT and concurrent CT for anal canal cancer. Median age was 59 years (range, 38−83), and female/male ratio was 14/5. The majority of the pts had T2 or T3 tumours (68.4%), and 52.6% had positive lymph nodes. In all 19 pts, pelvic and inguinal nodes, and tumour irradiation was given using HT upto a median dose of 36 Gy (1.8 Gy/fr) followed by a 1-week gap. A boost dose of 23.4 Gy (1.8 Gy/fr) was delivered to the tumour and involved nodes using 3DRT (n = 12), HT (n = 6), or IMRT (n = 1). Simultaneous integrated boost was used in none of the pts. All but one patient with a T1N0 tumour received concomitant mitomycin/5-fluorouracil (n = 12) or mitomycin/capecitabin (n = 7) CT. Toxicity was scored according to the Common Terminology Criteria for Adverse Events (NCI-CTCAE v3.0). HT plans and treatments were generated using Tomotherapy, Inc., software and hardware; and 3D or IMRT boost plans with the CMS treatment planning system (TPS), using 6−18 MV photons from a Siemens Primus accelerator. For dosimetric comparison, computed tomography data sets of 10 pts were imported into the TPS, and 3D and 5-field step-and-shoot IMRT plans were generated for each case. Plans were optimized with the aim of assessing organs at risk (OAR) and healthy-tissue sparing while enforcing highly conformal target coverage, and evaluated by dose-volume histograms (DVH) of planning target volumes (PTV) and OAR.
Results: With a median follow-up of 13 months (range, 3−18), all pts are alive and well; except one patient developing local recurrence at 12 months. No patient developed grade 3 or more acute toxicity. No unplanned treatment interruption was necessary because of toxicity. With 360-degree-of-freedom beam projection, HT showed an advantage over 3D or IMRT plans in terms of dose conformity around the PTV, and dose gradients were steeper outside the PTV, resulting in reduced doses to OARs. Using HT, acute toxicity was acceptable, and seemed to be better than historical standards.
Conclusion: We conclude that HT combined with concurrent chemotherapy for anal canal cancer is effective and tolerable. Compared to 3DRT or 5-field IMRT, there is better conformity around the PTV, and OAR sparing.

6033 POSTER

Trends of metastasectomy rate in U.S. patients with metastatic colorectal cancer

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Background: Metastasectomy in patients with metastatic colorectal cancer (mCRC) is the best option to achieve long-term survival and offers the only chance for cure. Increasing the number of resectable patients is therefore a medical treatment goal. This study examines the trend over time in metastasectomy and pre-surgery chemo- and biologic therapy in newly diagnosed mCRC patients.
Material and Methods: Using a large, U.S. medical claims database from a national commercially-insured population, we identified patients with newly diagnosed mCRC and CRC patients who developed metastases between 2001 and 2005. Metastasectomy rates by anatomic location were assessed for all mCRC patients during one year after mCRC diagnosis. Chemotherapy and/or biological therapy within 90 days prior to the date of metastasectomy was evaluated.
Results: A total of 1,785 newly diagnosed mCRC patients were identified; of which 327 patients (18.3%) received metastasectomy within one year after mCRC diagnosis. This included 70 patients (3.9%) who were not initially resected but had metastasectomy following chemo- and/or biologic therapy. From 2001 to 2005, the most common surgery site was the liver (ranged 13.9%-16.7%), followed by the lung (2.3% to 4.9%) and pelvic resection (0.0%-0.5%). The percentage of patients who were not initially resected and had metastasectomy after receiving chemo- and/or biologic therapy increased from 2.9% in 2001 to 5.6% in 2005. Among patients who received pre-surgery chemo- and/or biologic therapy, the percentage of receiving biologic therapy increased rapidly in 2004–2005 from 35.0% to 77.3%.
Conclusions: The proportion of patients with mCRC undergoing metastasectomy increased over time and the percentage of patients who were not initially resected and had metastasectomy after receiving chemo- and/or biologic therapy almost doubled during the study period.

6034 POSTER

The short-term effect of neoadjuvant chemoradiation on anorectal function in rectal cancer: analysis using preoperative manometric data

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Background: Though there are a few reports of the effect of neoadjuvant chemoradiation (nCRT) on anorectal function, they mostly assessed the long-term postoperative results on anorectal function. The purpose of this study is to evaluate the short-term preoperative effects of nCRT on anorectal function, excluding the bias of postoperative impairment.
Materials and Methods: From January 2005 to December 2008, 126 patients with locally advanced rectal cancer underwent nCRT in Seoul National University Bundang Hospital. Among these, we analyzed 80 patients whose preoperative anorectal manometry data were available for both pre- and post-nCRT. Patients were divided into two group according to the tumor location; lower rectum (n = 52) and mid-rectum (n = 28). All patients received radiotherapy of 50.4 Gy with concurrent oral capecitabine or intravenous fluorouracil based chemotherapy. The paired *t* test was used to compare pre- and post-nCRT parameters such as mean resting pressure (mRP), maximum squeeze pressure (mSP), percentage asymmetry of the resting and squeeze sphincter (R and S asymmetry), length of high pressure zone (HPZ), rectal sensory threshold, and rectal compliance.
Results: The mRP increased significantly after nCRT, whereas mSP did not change significantly (data shown in table). There were significant decreases in R and S asymmetry and increase in HPZ length. Rectal compliance decreased significantly. In patients with lower rectal cancer, there were significant differences in S asymmetry, HPZ length, and rectal compliance. In patients with mid-rectal cancer, only mRP increased significantly.

	Pre-nCRT	Post-nCRT	*p* value
mRP (mmHg)	42.98±17.77	47.35±17.09	<0.01
R asymmetry (%)	31.33±6.62	29.57±6.48	0.04
mSP (mmHg)	139.75±76.66	130.94±65.19	0.09
S asymmetry (%)	27.18±6.48	25.33±5.97	<0.01
HPZ length (cm)	2.06±0.67	2.24±0.69	0.03
Rectal sensory threshold for maximal tolerance (ml)	152.41±40.29	143.29±40.69	0.08
Rectal compliance	1.13±0.40	1.01±0.39	0.01

Conclusions: Although there was a decrease in rectal compliance, nCRT did not impair short-term sphincter function significantly regardless of the location of primary tumor and rather seemed to have overall beneficial effect.