mg/m² (IRMA 1, 2, 3, 5) or Cetuximab 400 mg/m² (IRMA 4). A dose of 67.5 Gy in 30 fractions (IRMA 1, 2, and 4) or 70.5 Gy in 30 fractions (IRMA 3, 4, and 5) was delivered to primary tumor and involved nodes, 60 Gy were delivered to high risk and 55.5 Gy to low risk lymph node areas. Static (IMRT) or volumetric (VMAT) intensity modulated technique with simultaneous integrated boost was used.

Results: 107 patients (median age 56 years, range 30-78, UICC stage III: n = 18, IV: n = 89) were included in this analysis. IC was performed with Cisplatin + 5-Fluorouracil in 65 (61%) patients and with Docetaxel + Cisplatin + 5-Fluorouracil in 42 (39%) cases. Concomitant Cisplatin and Cetuximab administration in 16% of patients, respectively. 51% (n = 55) of cases were irradiated with step & shoot IMRT-SIB technique (7 beams), while 49% (n = 52) of patients were irradiated with VMAT-SIB (two arcs) technique. During radio-chemotherapy, 23 (21%) patients developed mucositis, 12 (11%) G3 dysphagia and 10 (9.3%) G3 hematomical toxicity. Even 1 (0.9%) G4 leukopenia and 3 (2.8%) G5 (2 neutropenia and 1 neutropenic fever) adverse events were observed. The overall response rate after radio-chemotherapy was 82.2%. Two-year local control and survival were 64.2% and 64.6% (IRMA 1), respectively, 57.8% and 56.2% (IRMA 2), 66.4% and 75.5% (IRMA 3), 70.1% and 66.7% (IRMA 4), and 76.5% and 82.4% (IRMA 5), respectively.

Conclusions: In our experience moderately hypofractionated and accelerated radio-chemotherapy after induction chemotherapy was feasible. Intensive patient monitoring and supportive strategies during chemotherapy are necessary to manage side effects.

EP-1039
H&N IMRT: correlation of dysphagia/xerostomia to dose/volume parameters of involved OARs
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Purpose or Objective: To analyse the frequency and severity of dysphagia and xerostomia in patients affected by nasopharyngeal and oropharyngeal cancers treated by intensity-modulated radiotherapy (IMRT) and the correlation with volumetric variations and dosimetric data of pharyngeal constrictor muscles and parotid glands.

Material and Methods: Fifty patients, who underwent adaptive IMRT for nasopharyngeal and oropharyngeal cancers, were included in the present study. Eighty-four percent of patients (42/50) received concurrent radio-chemotherapy and 92% (44/50) were in locally advanced stage. Dose-volume parameters related to constrictor muscles (superior constrictor muscle, SCM; middle constrictor muscle, MCM; inferior constrictor muscle, ICM; and whole pharyngeal constrictor muscle, CM), and parotid glands were analyzed using dose-volume histograms (DVHs). All patients underwent replanning CT scan after 5 weeks of radiation therapy and the target and OARs were re-contoured on fusion images after co-registration. The volumetric variations of pharyngeal constrictor muscles and parotid glands were measured. Volumetric variations and dose-volume parameters were associated to acute and late dysphagia and xerostomia according to RTOG score, quality of life questionnaires (PSS-H&N e QLQ-H&N35), and oesophageal transit.

Results: Volumetric variations and dose-volume parameters of pharyngeal constrictor muscles and parotid glands are reported in Table 1. Adaptive IMRT achieved a good sparing of parotid glands (mean dose 24.9 Gy) and constrictor muscles (mean dose 51.2 Gy). Acute dysphagia, was scored as grade 0-1 in 18/50 patients (36%) and as grade 2-3 in 32/50 (64%). Acute xerostomia, was scored as grade 0-1 in 21/50 patients (42%) and as grade 2-3 in 29/50 (58%). Volumetric variations and dose-volume parameters of the constrictor muscles and parotid glands did not correlate with acute toxicity (p>0.05). At 2 years median follow-up (range 6-67 months), late dysphagia was scored as grade 0-1 in 40/50 (80%) and as grade 2-3 in 10/50 (20%). Late xerostomia was scored as grade 0-1 in 42/50 of patients (84%) and as grade 2-3 in 8/50 (16%). The analysis of the correlation of volumetric variations and dose-volume parameters with clinical data (RTOG score for late toxicity, quality of life questionnaires and oesophageal transit) is ongoing.

Conclusion: During radiotherapy, pharyngeal constrictor muscles and salivary glands underwent volumetric variations. Volumetric variations and dosimetric data did not correlate with acute toxicity, probably because of the complexity and multifactorial pathogenesis of acute dysphagia and xerostomia. The ongoing analysis on the correlation of late toxicity data with volumetric variations and dose-volume parameters may help in the optimization of IMRT treatment planning.

EP-1040
Development of a CT-based prognostic model for regional control in head and neck cancer after RT
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Purpose or Objective: To develop a CT-based prognostic model for regional control in head and neck cancer after radiotherapy (RT) and to identify locoregional control predictors which might be used in daily practice for patient selection.

Material and Methods: We performed a retrospective analysis of 1074 patients (median age 56 years, range 23-83 years). The cohort was divided into a training set (85% of the patients) and a validation set (15% of the patients). The included patients received (chemo)radiotherapy for head and neck cancer (pharynx, larynx, oral cavity, salivary glands). Clinical and imaging data from diagnostic CT scans were collected. The response to radiotherapy was defined as complete response, local failure, and regional failure. The endpoint was regional control in the head and neck region.

Results: The AUC for the validation set was 0.82 (95% CI: 0.78-0.86) for the early CT-based model (linear regression) and 0.84 (95% CI: 0.80-0.88) for the late CT-based model (logistic regression). The area under the receiver operating characteristic curve (AUC) for the early CT-based model was 0.82 (95% CI: 0.78-0.86) and for the late CT-based model was 0.84 (95% CI: 0.80-0.88).

Conclusion: A CT-based prognostic model for regional control in head and neck cancer after RT was developed. The model is based on CT parameters which can be easily and routinely measured. The model showed good discrimination ability and could be an useful tool for patient selection.

EP-1041
Development of a CT-based prognostic model for regional control in head and neck cancer after RT
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Purpose or Objective: To develop a CT-based prognostic model for regional control in head and neck cancer after radiotherapy (RT) and to identify locoregional control predictors which might be used in daily practice for patient selection.

Material and Methods: We performed a retrospective analysis of 1074 patients (median age 56 years, range 23-83 years). The cohort was divided into a training set (85% of the patients) and a validation set (15% of the patients). The included patients received (chemo)radiotherapy for head and neck cancer (pharynx, larynx, oral cavity, salivary glands). Clinical and imaging data from diagnostic CT scans were collected. The response to radiotherapy was defined as complete response, local failure, and regional failure. The endpoint was regional control in the head and neck region.

Results: The AUC for the validation set was 0.82 (95% CI: 0.78-0.86) for the early CT-based model (linear regression) and 0.84 (95% CI: 0.80-0.88) for the late CT-based model (logistic regression). The area under the receiver operating characteristic curve (AUC) for the early CT-based model was 0.82 (95% CI: 0.78-0.86) and for the late CT-based model was 0.84 (95% CI: 0.80-0.88).

Conclusion: A CT-based prognostic model for regional control in head and neck cancer after RT was developed. The model is based on CT parameters which can be easily and routinely measured. The model showed good discrimination ability and could be an useful tool for patient selection.