**Purpose.** Patients may achieve a better quality of life (QOL) after IMRT compared with conventional 3D Radiotherapy (RDT) for head and neck cancer patients. The period of study was from 2005 to 2009.

**Material and method.** A retrospective study on QOL in patients treated for head and neck cancer and those who have been subjected to the standard questionnaire about their physical status and quality of life QLQ-H & N35. A total of 168 patients have been treated, 79 were treated with 3D Radiation (2005–2008) and 89 patients with integrated boost IMRT (2008–2009). 66 patients were evaluated by the standard questionnaire about their physical status QLQ-H & N35 (22 with 3D and 44 with IMRT) specifically xerostomia and chronic sequelae in the oral cavity area.

**Results.** 3D 60% of patients received postoperative RDT. Radical RDT 40% ± chemotherapy. Tumor stage at diagnosis is 60% ≥ T3 and 65% ≥ N1; In N+ more frequently N2b. Patients were treated as follows: 4 for nasopharynx, 6 oropharynx, 10 relapses of larynx, hypopharynx or oral cavity after surgery, 1 multifocal, 11 hypopharynx, 6 oral cavity, 16 supraglottic, 16 glottic and 1 subglottis. 22 patients were evaluated for chronic xerostomia (GII ≥ 50%, and 30% GI). Mean score QOL was 49 (37–97). IMRT 36% of patients were treated with radical surgery followed by RDT or RDT-QT. For patients who did not undergo surgery, the most common treatment was concomitant RDT-QT. 52% of cases ≥ T3 tumor stage, nodal stage 72% ≥ N1. In N+, 31% N1 and 20% N2b. In regards to primary tumor, the cases seen were; 16 nasopharynx, 20 oropharynx, 2 relapses of larynx and 4 of oral cavity, 3 multicenter, 11 hypopharynx, 6 oral cavity, 16 supraglottic and 11 glottic. 41 patients were evaluated for chronic xerostomia (GII ≥ 36%, and 32% GI Mean score QOL was 40 (34-67)).

**Conclusion.** Patients treated with IMRT show a better quality of life compared to those treated with conventional radiation therapy, reducing the appearance of more severe sequelae.

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**A retrospective study of the tolerance of induction chemotherapy with TPF followed by radiotherapy with concomitant cetuximab**

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**Introduction.** For years the use of induction chemotherapy (ICT) followed by external radiotherapy (ERT) with concomitant cetuximab was the standard of treatment in patients with locally advanced squamous cell carcinoma of the head and neck (SCCHN). In selected patients, induction chemotherapy could facilitate organ preservation, avoid morbidity surgery and improve quality of life of the patient.

**Purpose.** To investigate the tolerance of ICT with docetaxel, cisplatin, and 5-Fluourouracil (TPF) followed by ERT with concomitant cetuximab in the treatment of patients with SCCHN.

**Patients and methods.** This trial enrolled 28 eligible patients with Stage III or IV nonmetastatic oropharyngeal and hypopharyngeal carcinoma who received ICT followed by ERT with concomitant cetuximab were retrospectively analyzed. Clinical safety (weight,
Biologically based planning IMRT for synchronous tumors

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Introduction. (1) Head and neck tumours synchronous with another tumor in different location are rare and have a poor prognosis (2-year overall survival 0% if both advanced). (2) Nevertheless, a 33.9% 3-year overall survival has been achieved for selected patients. (3) When a radiotherapy plan targeting both tumours could be required it is not always feasible since getting acceptable PTV coverage, without violating OAR constraints, could be difficult. Also, risk of under/overdosing in matching area exists.

Objective. To evaluate the effectiveness of MONACO planner for IMRT treatments in H&N and lung synchronous tumors.

Methods and materials. Two patients diagnosed of a synchronous H&N and lung tumors. Patient 1: base of the tongue cancer (pT4pN2cM0) and right lower lobe cancer (cT2cN2M0), both squamous cell cancers. Patient 2: glottis squamous cell cancer (cT4aN1N0M0) and right upper lobe adenocarcinoma (T3N2M0). Radiotherapy treatment: IMRT with inverse planning and biological function based optimization obtained with TPS Monaco (CMS/Elekta, Maryland Heights, MO). An static technique type step and shoot has been employed, and a daily verification (kilovoltage cone-beam CT) was performed. Thermoplastic shoulder mask device + silicone bite positioner for immobilization were used.

Results. H&N targets. PTV 66: average volume 137/172 cc; D95 > 97.8%. PTV 60: average volume: 394.57cc; D95 > 96%. Parotid glands: only in one V30 > 50% (53.6%). Remaining OAR fulfilled dose constraints. Lung targets. PTV (60+66): average volume 230.95 cc; D95 > 97.5%. Esophagus: V35 < 46%. Lung: V20 < 31%.

Conclusions. (1) Biological function based planning systems work in all points along the histogram curve obtaining a better OAR preservation without decreasing excessive the PTV coverage in complex plans. (2) Monaco allows to use only one isocenter.