Both the arms received concurrent chemo-radiation. Chemotherapy with inj Cisplatin 35 mg/m² weekly IV infusion was given as a radiosensitizer before Radiotherapy for 6 cycles and external beam radiotherapy 69.99-70Gy in 33-35 fractions 2 - 2.121Gy/fraction using Linear accelerator of 6MV photons by Conventional arm received standard regimen 5 fractions/week with overall treatment time of 6 weeks and Accelerated arm received 6fractions/week with overall treatment time of 7weeks.
Patients were evaluated in both the arms for early tumor response and acute Toxicities

Results: The mean age of patients were 53.44 years,76.60%were male and 23.4% were female .
Concurrent chemoradiation using accelerated fractionation showed higher percentage of complete response rate , in stage III-100%, IVA-88.50%and IVB- 50%,were as in conventional fractionation it was in stage III-87.50% and IVA-80.00%.
According to site complete response rate in oral cavity 87.50%and 50.00% , oropharynx 92.90% and 72.70% in accelerated fractionation and conventional fractionations respectively.
Total number of cycles of chemotherapy received were same in both the arms. There was significant weight loss during treatment in accelerated fractionation compared to conventional fractionation arm.

Conclusion: In our study, Locally advanced head and neck cancers showed better early tumor response with acceptable acute toxicities when treated with concurrent chemoradiation using accelerated fractrationation compared to conventional fraction and the quality of life was not stastically different in both the arms.

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Interim 18F-FDG-PET/CT during chemoradiotherapy for early outcome prediction of head and neck cancer

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Purpose or Objective: It is established that in the management of locally advanced head and neck cancer (HNC) patients, 18F-FDG-PET/CT (FDG) plays a significant role in the pre-treatment setting to predict outcome and prognosis and at the end of the chemo-radiotherapy (CRT) to assess the tumor response. This systematic review aims to evaluate the use of FDG acquired during CRT, ad interim FDG (FDGint), with the aim to identify tumor responsiveness in an early stage of the treatment in order to allow modification of the treatment plan and/or to setup alternative therapeutic strategies to enhance the therapeutic ratio.

Material and Methods: Data search was performed in PubMed for full original papers published from 2005 up to August 2015, written in English and based on the use of 3D hybrid PET/CT only, with eight different combination of keywords. The literature search brought 568 articles. Twenty-one original papers fulfilled the inclusion criteria: 8 studies investigated the predictive role of FDGint assessing correlations between metabolic variations and clinical outcomes, 7 studies draw conclusions about a potential role of response assessment during RT for treatment adaptation without reporting any correlation with the clinical data, and 6 studies were focused on the use of FDGint for biology-guided adaptive RT.

Results: The results of the analysis considering only the papers focusing on the predictive role of FDGint are reported in the table. All patients underwent at least a FDG at baseline, and one at a dose in the range of 10-20 Gy (early PETint), or in the range of 40-50 Gy (late PETint). Most of the studies reported a qualitative or semi-quantitative method of delineation of the FDG uptake, using a threshold value of the SUVmax, usually 40% or 50%. All the studies have in common the SUVmax and its variation as the main parameters considered for FDG evaluation, although the largest and first study evaluating all metabolic parameters of FDGint, found that tumor lesion glycolysis was a better and statistically more significant predictor of outcome than SUVmax. Two papers comparing FDGint with FLTint revealed that reduced FLT SUV preceded reduced FDG uptake, suggesting that FLTint is expected to assess the therapeutic response much earlier than FDGint.

Table. Statistics of cohort characteristic

	Value
N° of papers included	15
N° of patients	431
N° of patients/study (median, range)	29 (8 - 72)
Chemotherapy	Different schedules and pharmaceuticals
Radiotherapy	3D-CRT or IMRT
Total dose (range)	T = 60-78 Gy
	N^+= 60-66 Gy
	N^- = 50-56 Gy
Studies with *early* FDG_{int}	4
Dose at which *early* FDG_{int} is acquired (median, range)	20 (10-35)
Studies with *late* FDG_{int}	5
Dose at which *late* FDG_{int} is acquired (median, range)	49 (40-66)
Studies with both *early* and *late* FDG_{int}	6
Studies PRO prognostic value of FDG_{int}	4/8
Studies CONTRA prognostic value of FDG_{int}	2/8
Studies comparing FDG_{int} with FLT_{int}	2/8

Conclusion: Most of the works confirmed the value of FDGint in predicting the response to CRT, while few highlighted the poor prognostic value of FDGint compared to FDG acquired 2-3 months after the end of CRT which revealed a strong correlation with local and regional control and with survival. Although the best timing to assess tumor response during RT remains a matter of debate, the two week time point seems most favorable, also because there is still sufficient opportunity for adaptation of the treatment strategy. Such contradictory findings deserve to be further analyzed and confirmed in a more numerous and homogeneous series according to the tumor site and radio-chemotherapy schedules.

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Usefulness of PET/CT in definition of treatment volumes of head and neck tumors

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