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Purpose or Objective
Intensity modulated radiotherapy (IMRT) has proven advantages over conventional radiotherapy in head and neck cancers (HNC). Simultaneous Integrated Boost (SIB) is yet another concept which has been incorporated in IMRT and has gained popularity by virtue of its ability to provide tailored and differential doses to two or more targets according to risk of harboring cancer cells, keeping total numbers of fractions same for all targets. However, in order to deliver SIB-IMRT there is no consensus yet on what is the optimum number of clinical target volumes (CTV) to be delineated. A common practice in European centres is to create 2 CTVs, high-risk and low-risk. However, most American centers believes that there exist another region just adjacent to high-risk CTV which requires higher dose than that for low-risk CTV. The aim of this study was to compare two-dose levels CTV SIB-IMRT (2CTV-IMRT) and 3CTV-IMRT with regard to treatment outcomes and toxicities.

Materials and Methods
One hundred and twenty patients with locally advanced HNC were randomized equally into 2CTV-IMRT and 3CTV-IMRT. Dose-fractionation schedules in 2CTV-IMRT were 70 Gy and 50 Gy 35 fractions to gross disease and elective target respectively. Dose-fractionation schedules in 3CTV-IMRT were 70 Gy, 63 Gy and 56 Gy in 35 fractions to gross disease, intermediate risk and elective target respectively. Concurrent weekly cisplatin at 40mg/m² was given to all patients if found fit for it. The end points for this study were loco-regional control (LRC), overall survival (OS), acute and late toxicities. LRC and OS were computed with Kaplan-Meier curve with log-rank test for comparison between the two groups. Univariate analysis and Multivariate Cox proportional hazards regression analysis was performed to estimate the impact of known relevant prognostic factors on LRC and OS.

Results
The median follow up was 28.12 months in 2CTV-IMRT and 31.67 months in 3CTV-IMRT group. The median LRC was statistically non-significant (36.12 in 2CTV-IMRT vs 49.65 months in 3CTV-IMRT; p=0.211). The difference in 3 years LRC was non-significant (37.01 in 2CTV-IMRT vs 52.09% in 3CTV-IMRT; p=0.531). The median OS was 41.21 months in 2CTV-IMRT and 57.33 months in 3CTV-IMRT group, a statistically non-significant difference in OS distribution, x²(2) = 1.89, p=0.365 respectively. The difference in 3 years OS was non-significant (43.82 vs 62.11%: p=0.354). In univariate cox regression model, the two treatment techniques were not found to be associated significantly with LRC and OS. There were no significant differences between the two techniques with respect to acute toxicities of grades ≥3 and late toxicities of grades ≥3.

Conclusion
2CTV-IMRT is comparable with 3CTV-IMRT with regard to LRC, OS, acute toxicities and late toxicities. Hence, creating an additional target volume with 63 Gy in 3CTV-IMRT carries no benefit. 2CTV-IMRT being a simple dose-fractionation schedule and less time consuming for delineation may be considered over 3CTV-IMRT.
significance for risk of COVID-19 related death (p=0.12). By the time of 3 month follow-up one patient treated with palliative intention progressed and died.

Conclusion
COVID-19 infection extended overall treatment time in median for 20 days. From radiobiological point of view this is a substantial prolongation, thus these patients are at higher risk of recurrence and demand careful follow-up. In our subgroup of patients WBC-ratio was prognostic for risk of COVID-19 related death. Due to low number of patients this observation should be validated in a larger cohort of patients.

PO-0952 A dynamically updating individualized survival prediction modelling tool for oral cancer
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Purpose or Objective
Disease-related outcomes for oral cancer can be varied, and depends on a number of clinicopathological features. While a few survival prediction tools do exist, the clinical utility of such tools can be improved by allowing the use of dynamic model updates that allow the use of maturing follow-up data, thereby potentially improving the model over time and preventing the model from becoming outdated. We aimed to create such a tool using dynamic data updates from a repository and using both conventional and machine learning approaches to modelling.

Materials and Methods
A dynamic modelling tool was built that uses a secure application programming interface (API) to access de-identified records of patients treated in a single institution from 2011 onwards regularly updated on a REDCap database. The API extracts clinicopathological features and updated follow-up information, and these serve as inputs to models using both linear e.g. Cox Proportional Hazards and non-linear machine learning approaches e.g. Random Survival Forests (RSF) and Non-linear Cox (DeepSurv) for the prediction of disease-free survival (DFS) probability at several time-points. The first models were tuned on an initial dataset of 601 oral cancer patients curatively treated between 2011-2017 with the three methods using 10-fold cross validation and performance was assessed using the concordance (c) index and Brier score. A browser based interface was developed for predicting survival of a new patient with the most recent model which meets a set validation criteria.

Results
The API allowed unlimited updates of data from the repository. From the initial dataset, ten features were selected that were statistically significant on univariable analysis. These included the depth of invasion, perineural invasion, lymphovascular invasion, differentiation, margins of resection, AJCC 7 T stage, AJCC 7 N stage, total ipsilateral and contralateral positive nodes and presence of extracapsular extension. Models could be regenerated on updated data in less than a minute. All three models (Cox-PH, RFS and DeepSurv) performed similarly and satisfactorily with c-indices of 0.71, 0.71 and 0.72 and Brier scores of 0.13, 0.14 and 0.13 respectively. Scores remain stable with simulated repeat testing. The browser based interface was successfully tested.

Conclusion
The creation of dynamically updating models using real-time updates in patient follow up was feasible, stable and accurate. This is one of the first prototypes of implementation of such a dynamic prediction interface in cancer.

PO-0953 Impact of human papilloma virus on treatment outcomes in oropharyngeal cancer in India
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Purpose or Objective
There are strong evidences for improved treatment outcomes for human papilloma virus (HPV) mediated oropharyngeal cancer (OPC) than HPN non-mediated OPC. However, in countries such as India where smoking and smokeless tobacco consumption is very high the impact of HPV in OPC has not been well established. The incidence of HPV mediated OPC in India is much lower than that reported in developed countries. Also the high-risk behavior pattern pertaining to HPV mediated OPC is also different than that in developed countries. The aim of this study is to compare disease and patient related characteristics, and treatment outcomes between HPV mediated and HNP non-mediated OPC.

Materials and Methods
It was a prospective randomized study in which locoregionally advanced OPC were recruited. HPV status was checked using p16 immunohistochemistry. Patients who received neoadjuvant chemotherapy were excluded. All patients underwent radical chemoradiation with intensity modulated radiotherapy (IMRT) and concurrent weekly cisplatin at 40mg/m2 or 100 mg/m2 3 weekly. Dose-fractionation used for IMRT was 70Gy for high-risk and 56 Gy for low-risk region in 35 fractions. The end points for this study were loco-regional control (LRC) and overall survival (OS). LRC and OS were computed with Kaplan-Meier curve with log-rank test for comparison between the two groups. Univariate analysis and Multivariate Cox proportional hazards regression analysis was performed to estimate the impact of known relevant prognostic factors on LRC and OS.

Results
Ninety three patients with locally advanced OPC were recruited. Of 93 patients, HPV status was known for 84 patients, amongst which 69 (82.2%) were HPV non-mediated and remaining 15 patients (17.8%) were HPV mediated. The patient and disease-related characteristics were compared between the two groups as shown in Table 1. The median LRC was not reached in HPV positive group at the time of analysis, and 27.43 months