42- Does post –Induction Chemotherapy Carcinoma? Prospective Study from CCHE PET/CT Response Predict Outcome in Young Adult Nasopharyngeal Carcinoma

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Background:
This is a prospective study aiming to evaluate the predictive value of 18F-fluorodeoxyglucose positron emission tomography (18F-FDG PET/CT), reflected in terms of disease-free survival (DFS) and overall survival (OS), in pediatric patients who had received post induction chemotherapy for locally advanced nasopharyngeal carcinoma (LANPC). Pediatric patients were treated definitively with 3 courses of induction platinum-based chemotherapy followed by concurrent chemoradiation CRT) with simultaneous integrated boost intensity-modulated radiotherapy (SIB-IMRT) .

Methods:
This is a prospective study included LANPC (stage II-III) pediatric patients treated definitively and consecutively between January 2008 and December 2014 with induction chemotherapy; cisplatin, and 5-fluorouracil (PF) followed by SIB-IMRT to a total dose 61.2Gy with utilizing weekly cisplatin. The volume of radiotherapy was based on tumor response to Induction chemotherapy. All patients had baseline pretreatment and post induction chemotherapy 18F-FDG PET/CT. Metabolic response of the primary tumor and LN was assessed using maximum standardized uptake value (SUV max) that was correlated with treatment outcomes; OS and EFS.

Results:
The study included 38 eligible pediatric LANPC patients. The 3-year OS and DFS rates were 84.6 % and 79.5%, respectively. The median OS and EFS intervals were not reached. On a univariate analysis, the 3-years OS and EFS were significantly higher in patients with post induction metabolic regression of SUV max >65% for the primary and 57% for the nodal metastases (P = 0.02). Furthermore, OS and EFS were lower in patients with initial high nodal metabolic activity (P = 0.004) and (P = 0.005) with SUV max cutoff values (14.5) and (6.9) respectively. Also Initial SUV-LN > SUV-Primary showed significant lower OS (P = 0.004) and EFS (P = 0.005).

Conclusions:
In this study, the degree of metabolic regression in post-induction chemotherapy 18F-FDG PET/CT was a potential independent prognostic indicator for clinical outcomes in LANC pediatric patients (treated definitively with PF induction chemotherapy followed by CRT). Further controlled clinical trials are worthwhile. Legal entity responsible for the study: