



# Long-term outcomes and toxicity profile of chemoradiation for nasopharyngeal carcinoma

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## PURPOSE

Report our matured clinical data of combined modality treatment and toxicity profile for nasopharyngeal carcinoma (NPC) in a non-Endemic European cohort of patients.

## MATERIAL AND METHODS

Retrospective single-center study of biopsy-proven NPC patients treated between Feb/09 and Dec/13. Patients received intensity modulated radiotherapy (IMRT) similarly to RTOG 0615<sup>1</sup>, with 69,96Gy in 33 daily fractions to the primary and nodal GTVs, 59,4Gy to the areas at risk and 54Gy to the uninvolved lower neck. Concurrent and adjuvant platin-based chemotherapy was delivered as per Intergroup 0099 trial<sup>2</sup>. Survival was estimated with Kaplan-Meier survival analysis, log-rank test was used to detect differences and a multivariate analysis of variables was performed SPSS v.21 (IBM).

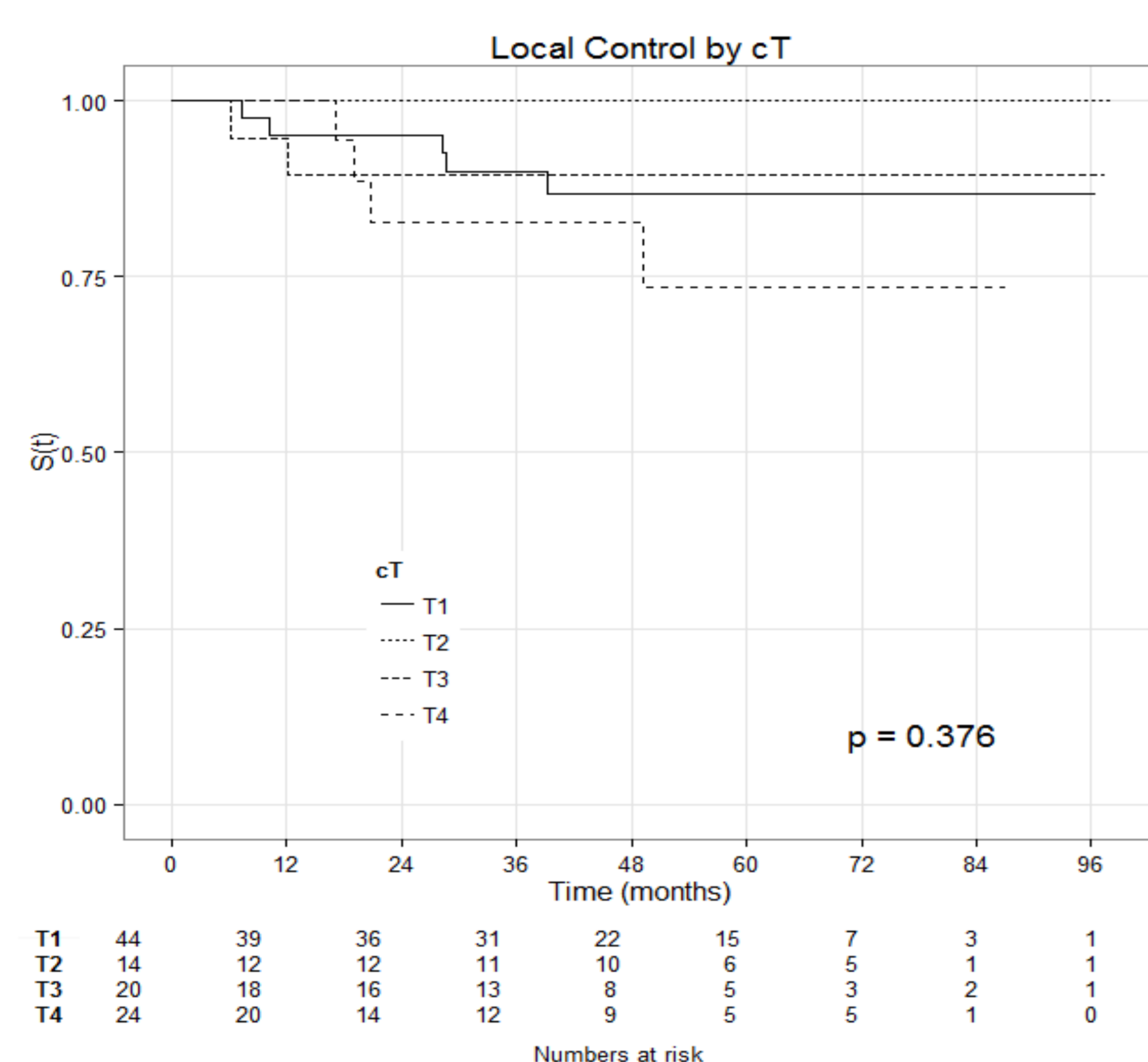
## RESULTS

We found 109 patients with median age of 53 years; 97% caucasian; 74% male; 72% WHO grade III; 43% T1; 14% T2; 18% T3, 25% T4; 17% N0; 17% N1; 39% N2; 27% N3;

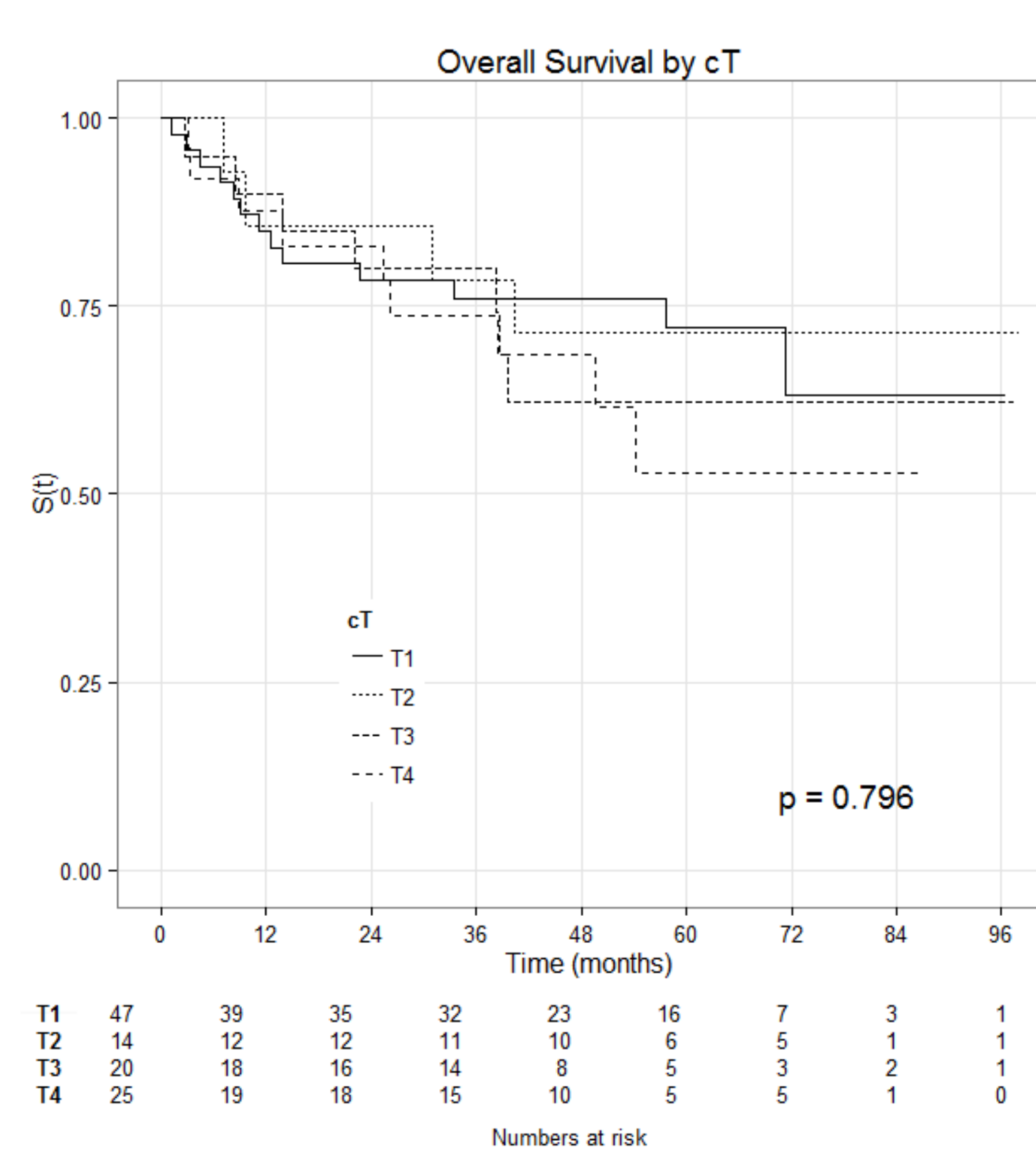
With a median follow up of 46 months, the 4-yr local control was 90,2% (88,6% for T1; 100% for T2; 85% for T3; and 91,7% for T4), distant metastases-free survival was 86% and a overall survival rate of 77% for all groups. All 10 local recurrences occurred inside PTV70 volume. From the 24 deaths, 11 were due to distant metastases, 3 grade 5 toxicity, 2 from local progression, 8 non-cancer deaths;

Local control and survival were significantly better in WHO grade III patients ( $p = 0.000$  and  $p = 0.0007$  respectively). On multivariate analysis, age of 52 years (sig. 0.017) and distant metastases had greatest impact on survival (sig 0.000);

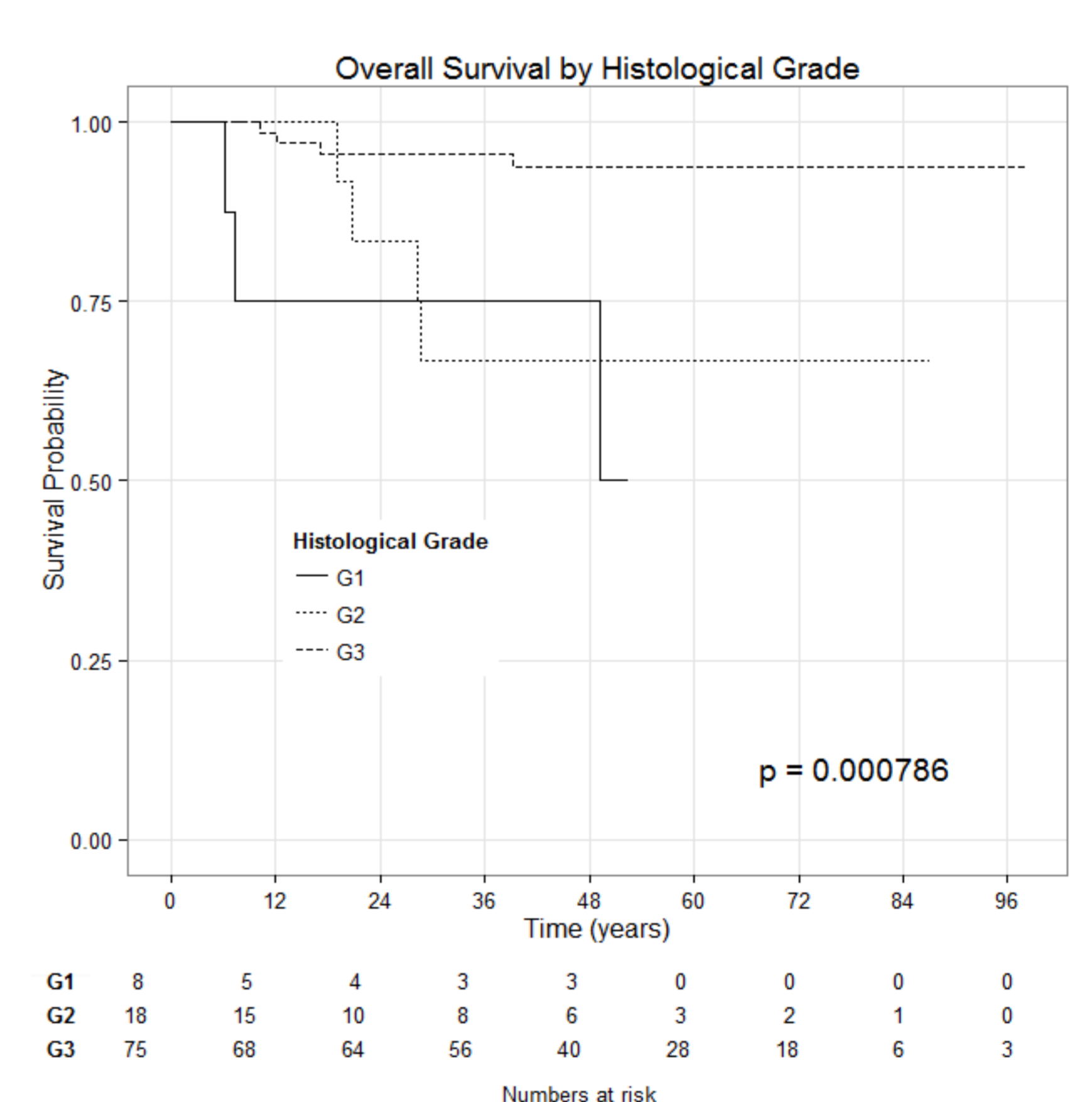
Xerostomia was the most frequent late toxicity 55% ( $n=60$ ), but no patient had grade > 2. Hypothyroidism requiring hormonal reposition occurred in 15,5% ( $n=17$ ) with no other hormonal deficit. With a mean cochlear dose of 49Gy, Grade 3 hearing loss happened in 8% ( $n=9$ ) and peripheral neuropathy in 4,5% ( $n=5$ ). One patient developed G2 renal toxicity, 1 had asymptomatic temporal lobe necrosis and other had skull base osteoradionecrosis requiring hyperbaric oxygen therapy; Unfortunately, only 60 patients (55%) had EBV (serum EBNA and serum viral copies) studies pre treatment. Although 36 (60%) had titles above 599, no difference in metastasis-free survival or overall survival ( $p = 0,430$ ) on this subgroup.



A) Log-rank of LOCAL CONTROL by T-Stage



B) Log-rank of OVERALL SURVIVAL by T-Stage



C) Log-rank of OVERALL SURVIVAL by WHO Grade

## CONCLUSIONS

As our data matured, our results confirm excellent local and regional control of concurrent chemoradiation in the IMRT era with acceptable late toxicity, comparable to others in the literature. Distant metastases are a challenge and desperately need more strategies to help these patients.

## REFERENCES

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