

IMPACT OF PRE-OPERATIVE METABOLIC EQUIVALENT STATUS ON SURGICAL OUTCOMES IN HEAD AND NECK CANCER PATIENTS



Gabriela DeVries, MD¹, Irina Gavrilă, BS¹, Maria Masciello, MD¹, Kunjan Patel, MD¹, Hafiz Patwa, MD¹, Joshua Waltonen, MD¹, James D Browne, MD¹, Christopher Sullivan, MD¹
¹Wake Forest Baptist Hospital- Department of Otolaryngology

Contact:
Name: Gabriela DeVries, MD
Organization: Wake Forest Baptist Hospital Department of Otolaryngology
Address: 1 Medical Center Blvd, Winston-Salem, NC 27101
E-mail: gdevries@wakehealth.edu

INTRODUCTION

The association between functional status and post-operative complications in cancer surgery is well-described in the literature; however, utilization of pre-operative screening tools to predict post-operative outcomes in head and neck cancer patients are lacking.

OBJECTIVE

The aim of this study is to determine if there is an association of low functional status, using metabolic equivalents (METs), with post-operative adverse events and/or increased length of stay (LOS) among head and neck cancer patients who underwent surgical resection.

DESIGN, SETTING, AND PARTICIPANTS

A retrospective review of 221 patients with squamous cell carcinoma (SCC) of the aerodigestive tract, from 2014 through 2020, who underwent surgical resection and completed a standardized MET questionnaire during their pre-operative visit.

OUTCOMES AND MEASURES

METs is the objective measure of the ratio of the rate at which a person expends energy, relative to the mass, while performing various physical activities¹. METs are measured on a scale from 1-10, where one MET is equivalent to the energy expended while sitting quietly. The MET measurements were divided into three groups: METs 10-7 is group 1; METs 6-4 is group 2; METs 4-1 is group 3. LOS and post-operative adverse events (systemic and wound-related complications) were identified in the cohort in attempt to determine a correlation with MET status. Statistical analysis was carried out via Welch student t-test comparison and p value of 0.05 was considered statistically significant.

The logistic regression adjusted r^2 was 65.29% for predicting adverse events and LOS duration from MET status.

RESULTS

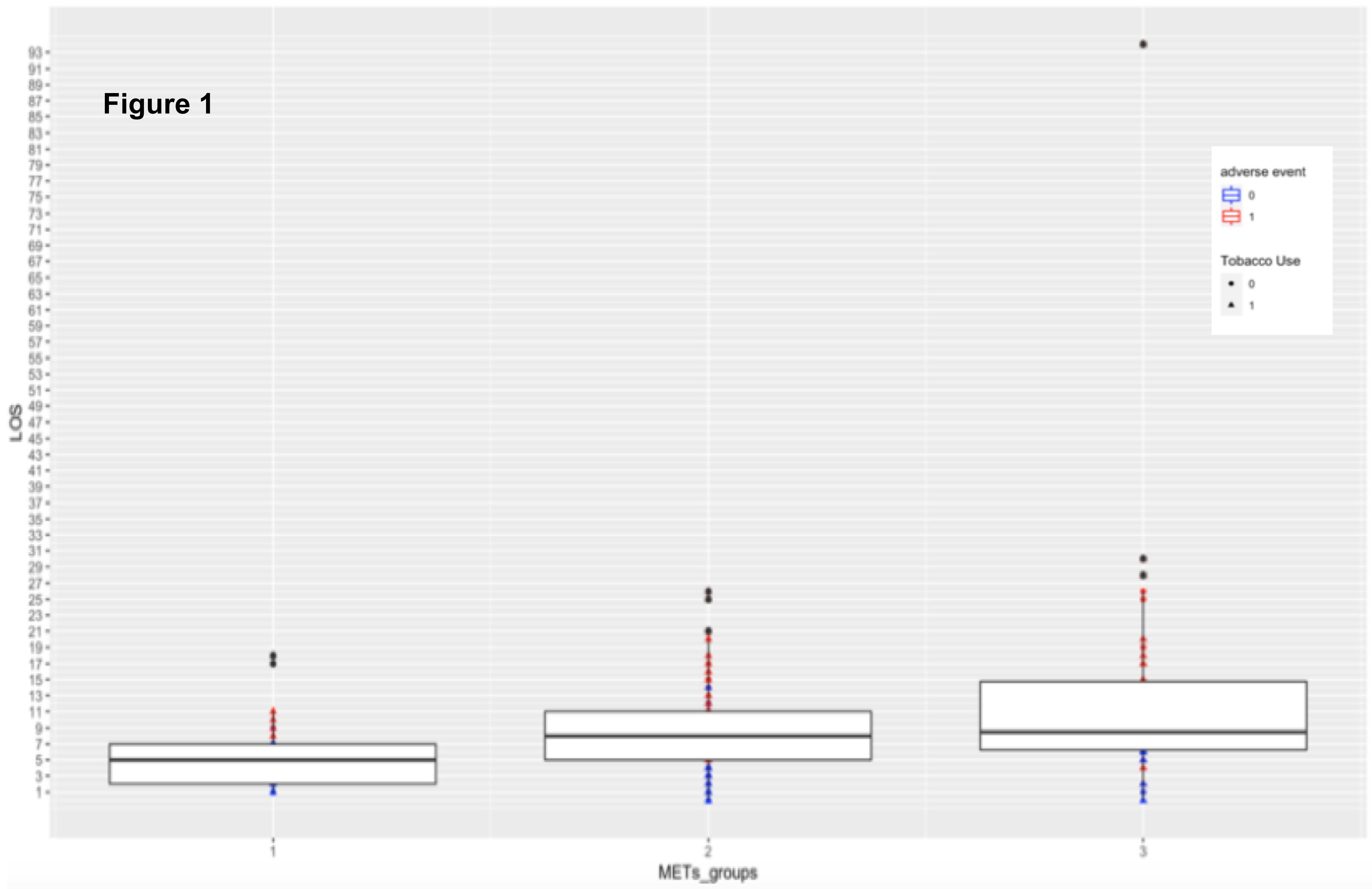


Figure 1: Box and Whiskers plot- as the functional status of patients decrease (lower METs score), there is a statistically significant increase of LOS and adverse event occurrence.

DISCUSSION

48% of the total patients experienced post-operative adverse events. 20% of these patients were located in MET group 3, 75% were located in MET group 2, and 8% were located in MET group 1.

20.8% of patients had a performance equivalent to 4 or less METs, 64.7% 4–6 METs, and 14% of patients had more than 7 METs.

MET group 1 (n=32) mean LOS was 5.56 days while MET group 2 (n=143) mean LOS was 8.69 days (p=0.005).

MET group 2 (n=143) mean LOS was 8.69 days while MET group 3 (n=46) mean LOS was 12.67 days (p=0.06).

MET group 1 (n=32) mean LOS was 5.56 days while MET group 3 (n=46) mean LOS was 12.67 days (p=0.002).

CONCLUSION

Low MET status was found to be associated with an increased LOS and 96% of adverse events were in patients who were in MET groups 2 and 3. Given these findings, MET status could be utilized to counsel patients that they may have an increased risk of post-operative adverse events and increased LOS.

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