

Background

- As many as 1-in-3 hospitalized cancer patients are either malnourished or at-risk of malnutrition.¹
- Patients with head and neck cancer (HNC) are at particularly high risk of malnutrition due to a combination of lifestyle choices, location of disease, and morbidity of treatment.²
- Despite the proven benefits of addressing perioperative malnutrition,³ as little as 1-in-10 malnourished patients are ever diagnosed in the inpatient setting, and the epidemiology of malnutrition in the HNC setting is not well-characterized.⁴
- We aim to describe the sociodemographic characteristics of HNC patients with malnutrition, evaluate the factors associated with inpatient nutrition evaluation, and investigate the association between malnutrition and perioperative outcomes in patients following surgery.

Methods

- Study Design:** Retrospective, single-institution review of patients who underwent surgery for HNC at a tertiary care center over a two-year period (2018-2019).
- Main Outcome Measures:** Outcomes of interest were nutritional status, length of hospital stay, and whether patients were seen by a registered dietician (RD).
- Analysis:** Logistic regression analysis was performed to identify patient and clinical factors associated with a diagnosis of malnutrition and evaluation (consult) by a RD.

Results

Table 1: Patient baseline characteristics by race for study cohort

Variable	White	Black	Other	P
n	274 (77.6)	49 (13.9)	30 (8.5)	<0.01
Age at arrival, years (median[25 th , 75 th])	66 [56,73]	63 [56,67]	64.5 [51.5,74]	0.167
Sex				
Female	88 (32.1)	13 (26.5)	16 (60)	0.04
Male	186 (67.9)	36 (73.5)	14 (40)	
Insurance type				
Medicaid*	< 10	< 10	< 10	<0.01
Medicare	158 (57.7)	25 (51)	12 (40)	
Private*	106-115 (38.7-42.0)	14-23 (28.6-46.9)	8-17 (26.7-56.7)	
Smoking status				
No/Blank	156 (56.9)	23 (46.9)	18 (60)	0.38
Yes	118 (43.1)	26 (53.1)	12 (40)	
Length of stay, days (median[25 th , 75 th])	3.36 [2.25,7.34]	7.08 [3.21,9.26]	3.09 [2.25,6.38]	<0.01

*Cells are suppressed due to containing values < 10 or to prevent back calculation of values < 10 in other cells.

Table 2: Factors associated with a diagnosis of malnutrition

Variable	aOR*	95% CI: LL	95% CI: UL
Age at arrival	1.06	1.01	1.12
Sex			
Female	Reference		
Male	1.46	0.56	3.84
Race			
White	Reference		
Black	1.70	0.63	4.58
Other	0.51	0.06	4.25
Smoking status			
No/Blank	Reference		
Yes	1.00	0.43	2.35
Length of stay	1.04	1.00	1.08
Consult			
No	Reference		
Yes	6.91	2.45	19.49
Insurance type			
Private	Reference		
Medicare	0.86	0.27	2.79
Medicaid	10.51	2.33	47.52

* aOR=adjusted odds ratio

32/353 (9.1%) of patients were diagnosed with malnutrition.

Table 3: Factors associated with a nutrition consultation

Variable	aOR*	95% CI: LL	95% CI: UL
Age at arrival	1.00	0.97	1.03
Sex			
Female			
Male	1.05	0.55	1.99
Race			
White			
Black	4.05	1.71	9.59
Other	1.10	0.39	3.11
Smoking status			
No/Blank			
Yes	1.76	0.97	3.18
Length of stay	1.60	1.43	1.77
Insurance type			
Private			
Medicare	1.26	0.57	2.79
Medicaid	1.32	0.34	5.13

*aOR=adjusted odds ratio

Discussion

- Only **1-in-3** patients were examined for malnutrition status in our cohort and only **1-in-10** were diagnosed as malnourished. This is far less than reported rates of malnutrition.
- Patients with a diagnosis of malnutrition were more likely have longer lengths of stay and were **10 times more likely** to be on Medicaid.
- Patient’s seen by a dietician were **almost seven times more likely** to be diagnosed with malnutrition.
- Nutritional status is a modifiable risk factor for patients in the perioperative setting and is underdiagnosed in the HNC setting.

Conclusion

- Patients with HNC are at elevated risk for malnutrition in the perioperative setting.
- This risk is unequally distributed, may be associated with socioeconomic disparity, and might impact clinical outcomes, including length of stay.

References

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