



CCI and RAI as predictors of postoperative outcomes after head and neck reconstruction



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INTRODUCTION

- Clinical comorbidities are known to impact surgical outcomes. Several predictive tools are used to determine how patients' comorbidities may affect postoperative course
- There remains a lack of established evidence that demonstrates which tool is best in predicting such outcomes.
- Moreover, the studies that have compared the preoperative assessment tools are in other cancer types, thus making it more difficult to ascertain in the HNC population.
- Therefore, the objectives of this study was to determine whether the Charlson Comorbidity Index (CCI) or Risk Assessment Index (RAI) is a better predictor of postoperative outcomes in patients undergoing head and neck free-flap reconstructive surgery

METHODS

Study Design: A retrospective analysis of all patients (N = 357) who underwent free flap reconstruction, consisting of anterolateral thigh flap (ALT), fibula free flap (FFF), or radial forearm free flap (RFFF) reconstruction after oncologic resection at a major tertiary care hospital between 2016 and 2022 was performed.

Clinical Information:

- Patient demographics, and clinical data such as CCI, RAI scores, and comorbidities were collected.
- Intraoperative data included presence of intraoperative complications, estimated blood loss (EBL), need for intraoperative blood transfusion, need for PEG tube on day of surgery, need for trach tube on day of surgery.
- Postoperative events were characterized into ICU stay, flap take back, postoperative vascular complication of flap, postoperative flap donor site/recipient site, postoperative Cardiac, Pulmonary, Vascular, Neurological, and Infectious complications

RESULTS

	N	Minimum	Maximum	Mean	Standard Deviation
Age	357	17	91	62.75	12.302
BMI	357	12.7	48.3	26.783	6.4095
CCI	357	0	10	3.45	1.854
RAI	263	7	46	24.1	6.816
CCI group	357	0	5	2.88	1.619
Clavien Dindo	357	0	4	0.9	1.333
Valid N	263				

Table 1. Distribution of patient demographic and statistics

	Clavien Dindo	Age	BMI	CCI	RAI
Clavien Dindo	1	0.102	0.064	.177*	0.121
Age	0.204	1	0.428	0.027	0.21
BMI	0.102	0.064	1	-0.037	.698**
CCI	0.204	0.064	0.428	1	<.001
RAI	0.121	.662**	-.194*	.664**	1

Table 2. Univariate analysis. *. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

RESULTS

	Standardized Coefficients	Significance	95.0% CI Lower Bound	Upper Bound
(Constant)		0.049	0.005	1.608
Age	-0.043	0.567	-0.021	0.011
CCI	0.156	0.04	0.005	0.219

Table 3. Multivariate analysis, controlling for age, higher CCI is associated with higher Clavien-Dindo scores

SUMMARY

- Increasing age was associated with increased frailty (p<.001, CI 0.57-0.71) and increased comorbidity (p<.001, CI 0.67-0.76) on univariate analysis.
- Higher BMI was associated with decreased frailty (p=.02, CI 0.02-0.26).
- On multivariate analysis, CCI was an independent risk factor for increased postoperative complications (p=0.04, CI 0.005-0.22).