

**Title:** Should we routinely screen for frailty prior to Gynecologic Oncology Surgery? Frailty as a predictor of adverse postoperative outcomes in elderly patients

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**Objectives:** Frailty is increasingly recognized as an adverse prognostic factor of postoperative morbidity and survival in several surgical disciplines. There is no consensus on routine frailty screening in Gynecologic Oncology. Our goal was to evaluate the predictive role of the National Surgical Quality Improvement Program(NSQIP) comorbidity-based modified Frailty Index-5(mFI-5) in Gynecologic Oncology patients over the age of 70.

**Study Methods:** Elective laparotomies between 01/2016-09/2020 at the Juravinski Hospital in Hamilton, ON were reviewed using prospectively-collected NSQIP data and chart review. Complication severity was assessed by Clavien-Dindo classification. The primary outcome was rate of 30-day grade III-V complications. Secondary outcomes were: grade II-V complications, myocardial injury, length of stay(LOS), non-home discharge, and non-initiation/non-completion of adjuvant chemotherapy. Logistic regression analysis was performed. Survival analysis and receiver-operator characteristic curves are underway.

**Results:** In this cohort of 259 patients, frail patients(mFI-5 $\geq$ 2) were at significantly greater risk of grade III-V complications (OR23.77, 95%CI 9.69-66.26,  $p<0.0001$ ), grade II-V complications (OR3.8, 95%CI 1.96-7.85,  $p=0.0002$ ), myocardial injury (OR3.44, 95%CI 1.66-7.05,  $p=0.0009$ ), LOS $\geq$ 5days (OR2.96, 95%CI 1.61-5.52,  $p=0.0006$ ), non-home discharge (OR7.37, 95%CI 2.81-20.46,  $p<0.0001$ ), and non-initiation/non-completion of chemotherapy (OR7.34, 95%CI 2.43-23.06,  $p=0.0006$ ), than non-frail patients on univariate analysis(UVA).

On multivariable analysis, frailty remained independently associated with grade II-V complications and grade III-V complications (OR4.64, 95%CI 2.31-9.94,  $p<0.0001$ , controlling for stage, operative duration and intraoperative complication, and OR24.49, 95%CI 9.72-70.67,  $p<0.0001$ , adjusting for BMI, stage and operative duration, respectively). On UVA, age, surgical complexity score, and smoking were not predictive of complications. Frailty also independently predicted non-home discharge (OR7.37, 95%CI 2.81-20.46,  $p<0.0001$ ) when adjusting for age.

**Conclusion:** Frailty as assessed with mFI-5, independent of age, strongly predicted morbidity and non-home discharge after Gynecologic Oncology surgery. Strategies for perioperative optimization could help address these disparities. mFI-5 is a concise tool that can be used for routine frailty screening and risk stratification.