Studying Sarcopenia and Postoperative Complications on Geriatric Patients According to Gender

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Background: Frailty, which is measured by the Multidimensional Frailty Score (MFS) is known to be associated with postoperative complications in older surgical patients. But the predictive role of sarcopenia has not been established. AWGS (Asian Working Group for Sarcopenia) defined sarcopenia with muscle strength, physical performance, and muscle mass. This study aims to evaluate the correlation of phenotypical indicators of sarcopenia (established cut-off value of muscle mass, grip strength, and gait speed by AWGS) with postoperative complications in older patients according to gender.

Methods: A Retrospective study was conducted with 343 older patients (Male 185 Female 158) who undergone intermediate to high-risk elective operations at Seoul National University Bundang Hospital and comprehensive geriatric assessment (CGA) from May 26, 2019, to May 20, 2020. Skeletal Muscle Index (SMI) was calculated using Bioelectrical Impedance Analysis (Inbody). The primary outcome was the existence of any kind of postoperative complications including unplanned ICU, UTI, pneumonia, DVT, PTE, stoke, delirium, postoperative urinary retention, and ileus.

Results: Since serum albumin level, Charlson's comorbidity Index, MMSE-KC, grip strength, and MFS were associated with postoperative complications only in men, no variables including phenotypical indicators of sarcopenia were relevant in women. There was no association between SMI and postoperative complication risk in both gender (7.31 vs 7.28; P=0.775 in men, 5.86 vs 6.02; P=0.361 in women) but low handgrip strength was correlated with complications in men (17.1% vs 41.9%; P=0.001).

Conclusion: Phenotypical indicator of sarcopenia, especially grip strength was a more relevant predictive factor of postoperative complications in male older surgical patients than women.

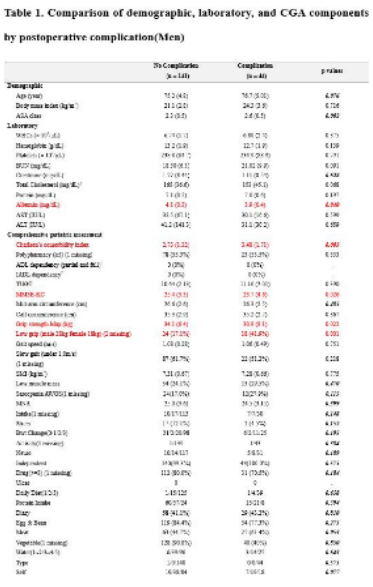


Table 1. Comparison of demographic, laboratory, and CGA components by postoperative complication(Men)

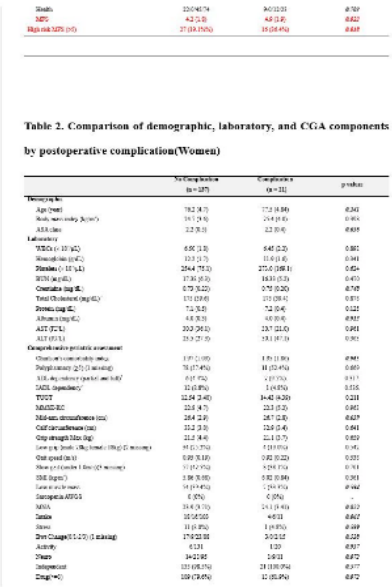
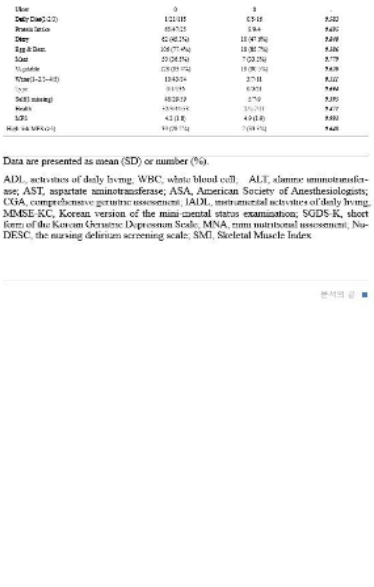


Table 2. Comparison of demographic, laboratory, and CGA components by postoperative complication(Women)



Data are presented as mean (SD) or number (%).

ADL, activities of daily living; WBC, white blood cell; ALT, alanine aminotransferase; AST, aspartate aminotransferase; ASA, American Society of Anesthesiologists; CGA, comprehensive geriatric assessment; IADL, instrumental activities of daily living; MMSE-KC, Korean version of the mini-mental status examination; SGDS-K, short form of the Korean Geriatric Depression Scale; MNA, mini nutritional assessment; Nu-DESC, the nursing delirium screening scale; SMI, Skeletal Muscle Index