中文題目：停經婦女全甲狀腺切除術後的骨骼肌量和生理表現

英文題目：Skeletal Muscle Mass and Physiological Performance of Postmenopausal Women with Total Thyroidectomy

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***Background**:*

There has been a growing attention toward sarcopenia not only in worldwide but also in Taiwan. There were several known risk factors including aging, malnutrition, diabetes and even some hormones and osteoporosis involved, but few published papers revealed relationship between thyroidectomy and sarcopenia. As post-thyroidectomy patients were majorly follow-up at our endocrine & metabolic outpatient department, we designed a study to analyze sarcopenia and its risk factors in this specific population.

Method:

This prospective, observational, cross-sectional, controlled study involved 50 postmenopausal women with regular visits to the Outpatient Department of Endocrinology and Metabolism, Kaohsiung Medical University Hospital (KMUH) for treatment and follow up after complete removal of thyroid, which included both benign and malignant neoplasms of thyroid on initial diagnosis. We measured their body composition including height-adjusted appendicular skeletal muscle mass (ASM/ht2) and bone mineral density(BMD) via Dual-energy X-ray Absorptiometry (DXA); we then also performed functional testing including handgrip strength and gait speed; Geriatric Nutritional Risk Index(GNRI), a nutrition surrogate marker was calculated by baseline serum albumin level and body weight, as follows: GNRI=[14.89×albumin (g/dL)]+[41.7×(body weight/ideal body weight)]; other comprehensive laboratory survey related to thyroid function, reproductive axis, and mineral metabolism were also collected. Multiple stepwise linear regression analysis was used to identify the factors associated with ASM/height2, handgrip strength and gait speed after multiple adjustments. A p value < 0.05 was considered to be statistically significant.

Result:

In our study population, the prevalence of sarcopenia was 8%, defined by ASM/ht2$\leqq$5.4 kg/m2 according to Asian Working Group for Sarcopenia (AWGS) criteria. The determinants of ASM/height2, handgrip strength, and gait speed using multivariable stepwise linear regression analysis were: Low GNRI, low femoral neck BMD, low TSH, and low thyroglobulin Ab for low ASM/height2; long menopausal years and low ASM/height2 for low handgrip strength; young age, low GNRI, and high T3 for low gait speed.

Conclusion:

Our results identified eight determinants that were associated with sarcopenia in postmenopausal women who had undergone total thyroidectomy, of which GNRI was the only determinant to affect both muscle mass and physical function.