INFLUENZA VACCINE REDUCED ONE-YEAR RISK OF MUSCLE MASS DECLINE IN COMMUNITY-DWELLING ELDERS

注射流感疫苗可減少老人一年內肌肉量下降的風險

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Purpose: It has been known the loss of skeletal muscle mass with aging was attributed to adverse health outcome. This study aimed to explore the effect of influenza vaccine on the muscle mass decline in elders.

Methods: A prospective one-year follow-up study in community-dwelling elders was conducted in Taichung City, Taiwan in 2010-2011. After excluding elders without dual energy X-ray absorptiometry examination at 1-year follow-up, a total of 400 elders being followed up were analyzed in this study. The percent change of muscle mass was calculated as the difference in appendicular skeletal muscle mass index (skeletal muscle mass/height^2) between values at the baseline and 1-year follow-up, divided by the baseline value. Elders were defined as muscle mass decline were those whose percent change less than -5%. Status of influenza vaccination in the past year was determined according to their self-report at baseline. Chi-square test, student's t test and multivariate logistic regression were applied to analyze the predictive ability of these factors on muscle mass decline.

Results: The average age of study subjects was 73.4 years with 47% of females. The one-year incidence of muscle mass decline was 19.8% (25.0% for elders without influenza vaccine v.s. 16.0% for elders with influenza vaccine, p=0.036). The mean percent change of muscle was -0.02% in elders with influenza vaccine and 0.94% in elders with influenza vaccine. Elders without influenza vaccine in the past year are more likely to have muscle mass decline incidence (odds ratio=0.57, 95% confidence interval: 0.35-0.94, p=0.027). After multivariate adjustment, the effect of influenza vaccine remained similar (0.54, 0.31-0.92, p=0.024). Other significant factors were independent associated with muscle mass decline incidence were stroke history (7.65, 2.77-21.10, p<0.001), medication for sleep (0.31, 0.14-0.69, p=0.004), and uric acid (0.29, 009-0.93, p=0.038).

Conclusion: Elders with influenza vaccine in the past year have lower incidence of muscle mass decline than those without influenza vaccine. Future research on the biological effect of influenza vaccine on muscle mass is warranted.