Synopsis of Original Research Paper

Clinical evaluation of perceived age in middle aged to elderly subjects

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Background and Objective: Several studies have shown that perceived facial age is a biomarker for systemic aging. In addition, it has been reported that subjects who looked younger compared with their twin counterpart had a better survival rate. Moreover, we reported that subjects who looked younger than their chronological age had a significantly lower age-related increase in carotid atherosclerosis compared with those who looked older than their chronological age. However, the effects of perceived facial age with makeup on end organ damages and frailty indices have not been fully investigated.

Methods: Perceived age of photos of face and standing posture was evaluated in 427 middle-aged to elderly subjects (188 men and 239 women), by 20 nurses and 5 attendants who were familiar with elderly subjects. All women were wearing makeup. The following parameters were evaluated for each participant; carotid intima-media thickness, brachial-ankle pulse wave velocity, augmentation index on radial arterial waveform as atherosclerotic indices; brain damages by MRI, plasma b-type natriuretic peptide concentration, estimated glomerular filtration rate, urinary excretion of protein and albumin as indices for end-organ damages; cognitive function, sarcopenic indices including hand grip strength, skeletal muscle mass, and thigh muscle cross-sectional area on CT, pulmonary function, and speed of sound in the calcaneus bone, as indices for frailty.

Results: The mean chronological age, mean perceived age, and mean difference between perceived age and chronological age were 67.2±10.5, 65.0±8.3, and –2.2±4.9 years, respectively. Perceived age was significantly related to chronological age (r=0.89). Perceived age was also significantly related to body height, body weight, blood pressure, all atherosclerotic indices, all end-organ related indices, and all frailty-related indices. On the other hand, after correction for chronological age and sex, only blood pressure and anti-dyslipidemic drug use were significantly related to the difference between perceived age and chronological age. Further, the interaction between chronological age and the presence of hypertension was significantly related to the difference between perceived age and chronological age [F=10.3, p=0.002], after correction for chronological age and sex.

Conclusions: Perceived age itself is a biomarker for not only atherosclerosis, but also for end-organ damages and the frailty. Makeup may underlie the lost of their association after correction for the chronological age. The findings indicate the socio-medical significance of makeup in the aged society.