Abstract: P5298

Influence of the changes in body fat on all-cause and cardiovascular mortality in a general population: a report from Ansan-Ansung cohort in the Korean genome environment study

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Topic(s):
Obesity

Citation:
Background: Paradoxical beneficial effects of obesity on all-cause and cardiovascular mortality have been reported in multiple cohort studies based on patients with cardiovascular disease as well as general populations. However, the association between the presence of obesity at baseline and the better survival rates could not be directly interpreted into the beneficial effect of gain in obesity or fatness on the mortality, which makes it difficult to provide any recommendation for the management of obesity. Therefore, we investigated the influence of the changes in body fat on all-cause and cardiovascular mortality in a general population.

Methods: A population-based cohort study has been conducted for 12 years (from 2001 to 2012). A total of 5,259 subjects in whom body compositions using a bio-impedance method were measured at least 2 times during the observational period were included. The causes of death was identified from the nation-wide database in KOSTAT. I20-I82 and R99 in the International Classification of Disease-10 codes were defined as a cardiovascular death. The subjects were evenly divided into 3 groups by the percentages of the changes in body fat (%BF; decreased [%BF<0.0%] vs. increased [%BF 0.0-13.7%] vs. highly increased [%BF=13.7%]). Inverse probability of treatment weighting was applied to balance the covariate differences among the groups.

Results: The age was 51.2±8.5 years and 51.6% was male. Median observation duration was 163 (the interquartile range: 157-168) months. The all-cause death and cardiovascular death occurred most frequently in the decreased %BF group and least frequent in the highly increased %BF group in both unweighted and weighted cohort. Multivariate Cox proportional hazard models showed that the risk of all-cause death was lower in the increased and highly increased %BF groups (hazard ratio [HR] 0.61 [0.47-0.80] and 0.24 [0.17-0.34], respectively) and the risk of cardiovascular death was lower in the highly increased %BF group (HR 0.20 [0.08-0.48]), compared to those in the decreased %BF group after adjustment for all covariates including physical activities and the changes in muscle mass. The risk of all-cause death and cardiovascular death linearly decreased with increasing %BF (HR 0.72 [0.67-0.77] and 0.70 [0.60-0.82], respectively).

Conclusion: The increase in body fat is associated with a lower risk of all-cause death and cardiovascular death in a middle-age general population, independently with physical activities and the changes in muscle mass.
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