Response to: 'Glucosamine and mortality: a note of caution' by Conway

We appreciate the comments by Conway[1] on our manuscript which investigated the association of regular glucosamine use with all-cause and cause-specific mortality.[2]

First, we agree that the underlying mechanisms, including inhibition of nuclear factor-κB thereby reducing inflammation and glucosamine triggering a mimic response of low carbohydrate diet, might partially explain the association between glucosamine use and mortality. Future studies are needed to better understand underlying pharmacological roles of glucosamine on health outcomes.

Second, the association of mortality with glucosamine use might be confused by unmeasured underlying lifestyle-related factors or other confounders. Nevertheless, in our analyses, we had carefully adjusted for several important confounders, including sociodemographic factors, lifestyle behaviours, health status, drug use and other supplements use. In total, 27 confounders were included in our fully adjusted models, and the adjustment for confounding was sufficient.

Third, randomised controlled trial (RCT) is indeed the ideal study design to clarify these issues. However, most previous RCTs, investigating the association between glucosamine use and health outcomes, mainly focused on the therapy in treating patients with osteoarthritis or other chronic diseases,[3–5] who might have relatively poorer prognoses than healthy people in primary prevention trials. Moreover, several previous large-scale cohort studies found the similar magnitude of benefit of glucosamine on mortality,[6–8] which are generally consistent with our study. Therefore, in the absence of sufficient sample size and sufficient trail duration, it might be difficult for previous RCTs to find such magnitude of benefit of glucosamine. Further studies are necessary to better clarify the association between glucosamine use and mortality.

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