Letter to the Editor

Dairy products consumption and incident metabolic syndrome

Kim & Kim[1] conducted a 10-year prospective study to examine the association between total and individual dairy products and the development of the metabolic syndrome (MetS) and its components. Dairy products consumption was assessed at baseline and after 4 years. The MetS was defined according to the criteria by the National Cholesterol Education Program Adult Treatment Panel III and Cox proportional hazard model was applied for the analysis. Adjusted hazard ratios (HR) of frequent consumers of total dairy products, milk and yogurt for incident MetS were 0·51 (95 % CI 0·43, 0·61), 0·50 (95 % CI 0·38, 0·66) and 0·67 (95 % CI 0·57, 0·78), respectively. In addition, milk/yogurt intake was inversely associated with low HDL-cholesterol in women. I have some concerns on their study.

First, Chen *et al.*[2] conducted a systematic review on the association between dairy products consumption and the MetS. Among seven cohort studies, HR of higher dairy products consumption for incident MetS was 0·86 (95 % CI 0·79, 0·92). In addition, dose–response analysis presented that HR of each increment in dairy products consumption of 1 serving/d for incident MetS was 0·94 (95 % CI 0·90, 0·98). Kim & Kim added information on the significant effect of dairy products consumption on lowering incident the MetS and MetS component. Furthermore, Kim & Kim also specified the contents of dairy products to know the association with the MetS. Meta-analysis of the consumption of individual dairy products and the development of the MetS should be conducted by further study.

Second, Alexander *et al.*[3] conducted a systematic review with meta-analysis of prospective cohort studies on the association between dairy products intake and CVD. HR of total dairy products intake and cheese intake for stroke were 0·91 (95 % CI 0·83–0·99) and 0·87 (95 % CI 0·77, 0·99), respectively. In addition, HR of cheese intake for CHD was 0·82 (95 % CI 0·72, 0·93). Kim & Kim used the MetS and its components as a dependent variable to evaluate predictive ability of dairy product. The MetS and its components can be considered as sub-clinical stages of CVD, and the effect of dairy products consumption on the MetS would be detected earlier than CVD. Anyway, risk assessment of dairy products consumption for the development of CVD and the MetS should be compared for preventing diseases.

Finally, Towiwat & Li[4] summarised the impact of diet, including milk and yogurt, on uric acid and gout. They also presented the mechanism of lowering uric acid by milk and low-fat yogurt intake with special reference to metabolites such as orotic acid, casein and lactalbumin. Hyperuricaemia is also considered as an important factor for metabolic abnormality, although not included for the definition of the MetS. Anyway, uric acid is closely associated with dairy products and the MetS, and I recommend it including as an adjusting variable to evaluate the association between dairy products and incident MetS.

In summary, Kim & Kim clarified the preventive effect of dairy products consumption on the development of the MetS with an average follow-up of 67·4 months. As the authors surveyed dairy products consumption twice with 4-year interval, time-dependent Cox regression analysis should also be considered for the analysis[5].

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