Conclusions in a study on the role of artificially sweetened soda and risk of lymphoma and leukemia are misleading

Dear Sir:

In a recent study, “Consumption of Artificial Sweetener– and Sugar-Containing Soda and the Risk of Lymphoma and Leukemia in Men and Women,” Schernhammer et al (1) state that the risk of developing certain cancers could be as likely due to chance as to the consumption of an artificial sweetener. However, most of the article positioned aspartame as a risk factor for hematopoietic cancers, which is misleading. Furthermore, the associations on which aspartame intake from diet beverages and hematopoietic cancer risks were extrapolated are weak.

Schernhammer et al noted that, “While our findings preserve the possibility for a detrimental effect of a constituent of diet soda, such as aspartame, on select cancers, the inconsistent gender effects and the occurrence of an apparent risk in individuals consuming regular soda, do not permit ruling out chance as an explanation [emphasis ours].” However, in the Discussion, the authors stated, “We observed a positive association between diet soda and total aspartame intake and risks of NHL and multiple myeloma in men, and leukemia among both men and women.” Those statements are in conflict, and only the former is supported by the data. Thus, including the latter is disingenuous. Furthermore, although the authors emphasized the association of aspartame in diet beverages with the reported hematopoietic cancers, the positive association observed between regular sugar-sweetened soda consumption and risk of non-Hodgkin lymphomas was largely ignored.

The positioning of the conclusion was concerning given the statistically weak associations reported between aspartame intake from diet beverages and hematopoietic cancer risks. Although the investigators reported that the intake of diet soda and aspartame was associated with increased risk of leukemia and multiple myeloma in men, the positive associations were based on so few cancer cases that the findings may simply have been due to chance. The presence of residual confounding is also a concern given that high BMI is associated with increased use of diet soda (2) and BMI is also a risk factor for hematopoietic cancers (3). Finally, the authors separated aspartame and diet soda as 2 separate exposures despite their argument that diet soda is the primary source of aspartame in the population. It is unclear whether the authors had sufficient hypotheses to examine each of these separately and thus may have introduced statistical bias in doing so.

In conclusion, the statement, “we observed a positive association between diet soda and total aspartame intake and risks of NHL [non-Hodgkin lymphoma] and multiple myeloma in men, and leukemia among both men and women” is not an accurate reflection of the study results given the weak associations as well as the possibility of residual confounding and statistical bias.

The author is President of the Calorie Control Council, an international association representing the low- and reduced-calorie food and beverage industry. The author had no other conflicts to disclose.

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REFERENCES

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