Letter to the Editor in Reference to the Article Entitled “Effects of Carbonated Liquids on Oropharyngeal Swallowing Measures in People with Neurogenic Dysphagia”

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Abstract

This letter is written according to stoichiometric calculation doubt about the article entitled “effects of carbonated liquids on oropharyngeal swallowing measures in people with neurogenic dysphagia” by Sdravou et al.

Keywords Deglutition · Dysphagia · Oropharyngeal swallowing · Carbonated beverage · Liquid · Stoichiometry

To the editor,

We are writing to you in reference to the article entitled “Effects of carbonated liquids on oropharyngeal swallowing measures in people with neurogenic dysphagia” by Sdravou et al. [1]. The article is well written and interesting. However, there is a doubt in its methodology which should be considered.

According to the methodology of the article, 1.3 mg citric acid with 4 g sodium bicarbonate is used to produce carbonated thin liquid; while according to the stoichiometry rules of the reaction $C_6H_8O_7 + 3NaHCO_3 = 3H_2O + 3CO_2 + Na_3C_6H_5O_7$ [2], each mole of citric acid will react with 3 mol of sodium bicarbonate in which the molecular weight of 1 mol of citric acid anhydrous is 192.12 g [3] and the molecular weight of each 3 mol of sodium bicarbonate is 252 g [4].

Therefore, 1.7 g sodium bicarbonate should be used to neutralize 1.3 g citric acid. But in the article, 4 g sodium

bicarbonate was used; so 2.3 g sodium bicarbonate will leave excess in the reaction medium. So according to this phenomenon, the results of the experiment may be affected. Hence, we recommend evaluating the possible effect of this excess amount of sodium bicarbonate in the results of the study.

References

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