The Association between Sugar Sweetened Soft Drink and Chronic Kidney Disease

A Position Statement

Kidney Health Australia estimates that 1 in 3 Australians is at an increased risk of developing chronic kidney disease (CKD), with the risk being even higher in those most vulnerable in our community[1]. Approximately 1.7 million Australians aged 18 years and over – a striking 1 in 10 – have at least one clinical sign of CKD[2]. However, there is a significant gap in CKD awareness, with only 1% of the population reporting that they have the condition. The burden of CKD is distributed unequally and unfairly, as evidenced by the high rates of the condition in the lower socio-economic groups and in the Aboriginal and Torres Strait Islander community[3]. The Australian Institute of Health and Welfare estimates that the number of people receiving kidney replacement therapy for end-stage kidney disease is expected to rise by at least 45% from 19,800 cases in 2011 to 28,800 cases in 2020[4].

Several factors, including increasing rates of diabetes mellitus and obesity, have contributed to a rise in prevalence of CKD[5]. The high consumption of soft drinks, i.e. sugar-sweetened carbonated beverages, and other sugary drinks is one of an array of dietary behaviours which has been identified by a number of policy documents as an important, specific behaviour to address in the prevention and management of chronic diseases such as CKD. Recent data from the Australian Health Survey showed that soft drinks (including flavoured mineral waters) are regularly consumed by 29% of the population{Australian Bureau of Statistics, 2014 AUSTRALIANBURUE2014 /id}. The level of consumption peaks among 14 to 18 year-olds, with 51% of males and 38% of females in this age group consuming a soft drink on a daily basis{Australian Bureau of Statistics, 2014 AUSTRALIANBURUE2014 /id}. Consumption of soft drink is documented to be even higher among Indigenous youth[7-9].

A recent systematic review and meta-analysis synthesized the published literature evaluating the associations between sugar-sweetened soft drink and CKD[10]. The authors pooled data from five studies with 3,487 subjects. The results showed a significant association between sugar-sweetened soft drink and CKD. People who regularly consumed one or more sugar-sweetened soft drinks per day had a 58% increased risk of developing CKD compared to those who did not consume this type of beverage.

Consumption of sugar-sweetened soft drinks has also been shown to be associated with an increased risk of kidney stone formation. Kidney stones are one of the most common disorders of the urinary tract. About 4-8% of Australians suffer from kidney stones at some time. The lifetime risk of developing kidney stones is 1 in 10 for Australian men and 1 in 35 for women. Ferraro and colleagues[11] prospectively analysed the association between intake of several types of beverages and incidence of kidney stones in three large ongoing cohort studies, consisting of 194,095 participants over a period of more than 8 years.

They showed that people consuming one or more sugar-sweetened soft drink had a 23%-33% higher risk of developing kidney stones compared with people who consumed less than one beverage of this type per week.

Conclusion

Regular consumption of sugar-sweetened soft drinks is associated with the development of CKD and kidney stone formation. Kidney Healthy Australia supports the Consensus Statement published by Cancer Council Australia, Diabetes Australia and the National Heart Foundation of Australia[12], which recommends that adults and children limit their consumption of sugar-sweetened beverages and instead drink water or reduced-fat milk.

Reference List

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