Proceedings of the Nutrition Society (2016), **75 (OCE3)**, E109 doi:10.1017/S0029665116001245

Summer Meeting, 11–14 July 2016, New technology in nutrition research and practice

Acute impact of *Hibiscus sabdariffa* calyces on postprandial lipids, biomarkers of insulin resistance and inflammation in humans

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The extract of *Hibiscus sabdariffa* calyces (HSC) is consumed as an infusion in many countries and considered to have lipid lowering ability[1–3], although the evidence is limited. This study aimed to investigate the acute impact of HSC extract consumption on cardiometabolic risk markers in men with 1 to 10 % risk ofdeveloping cardiovascular disease (CVD) in 10 years.

A randomised, controlled, single-blinded, cross over study involving 22 men (49 ± 2 years and BMI 26·9 ± 0·7 kg/m^2), was conducted in accordance with the declaration of Helsinki and Consolidated Standards of Reporting Trials (CONSORT). The study was registered as NTC02165553 ClinicalTrials.gov. Volunteers were randomised to consume either 250 ml of the aqueous extract of HSC (containing 150 mg anthocyanins) or water control with mixed breakfast (containing 70·2 g carbohydrate, 50·1 g fat and 8·6 g protein), followed by a lunch (containing 70·1 g carbohydrate, 24·9 g fat and 12·8 g protein) at 2 hours on two separate occasions separated by 2 weeks. Blood samples were collected at 0, 30, 60, 90, 120, 150, 180, 210 and 240 minutes post consumption of the extract of HSC or water. Postprandial glucose, insulin, triacylglycerol (TAG), total antioxidant capacity (TAC) and C-reactive protein – ultra sensitive (CRP-US) responses were determined.

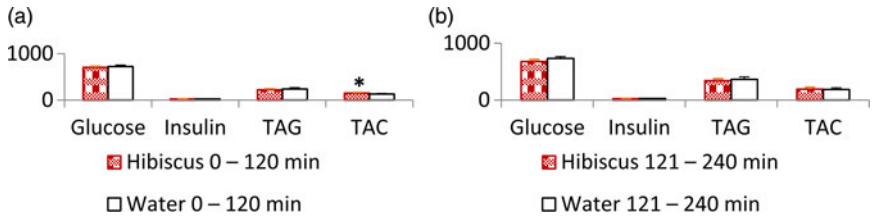

Fig. 1. Area under glucose (mmol/L*min.), insulin (nmol/L*min), TAG (mmol/L*min) and TAC (mmol Trolox Eq./L*min) response curves for 0–120 minutes (a) and 121–240 minutes (b).

There was significant increase ($p = 0·026$) in the area under 0 to 120 minutes TAC response curve when hibiscus drink consumption was compared to water (1). Although there was a tendency towards a reduced serum glucose, plasma insulin, serum TAG and CRP-US levels following acute consumption of the extract of HSC, these changes did not reach statistical significance ($p > 0·05$).

Acute consumption of HSC extract (containing 150 mg anthocyanins) improved postprandial systemic antioxidant response, but did not affect postprandial glycaemic, lipidaemic or inflammatory responses.

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3. Hopkins AL, Lamm MG, Funk JL *et al.* (2013) *Fitoterap* **85**, 84–94.