

ABSTRAK

Background: Prehipertensi adalah individu dengan TD sistolik 120–139 mmHg dan atau TD diastolik 80–90 mmHg. Dalam empat tahun, 40% subjek prehipertensi dilaporkan menjadi hipertensi yang serius bila tidak dikelola dengan baik. Manajemen prehipertensi belum memerlukan obat anti hipertensi. Asam urat normal tinggi (AUNT) dan asam urat serum (AUS) tinggi merupakan risiko kejadian dan progresivitas hipertensi, penyakit ginjal kronik, sindroma metabolik, diabetes melitus dan penyakit kardiovaskular. AUNT, AUS tinggi dan prehipertensi harus diturunkan. Pemberian suplemen minuman buah sirsak 2x100 gram/hari dilaporkan menurunkan kadar asam urat, ureum, kreatinin dan tekanan darah. Sirsak juga dapat memperbaiki fungsi ginjal dan kardiovaskular.

Tujuan penelitian: Mengkaji pengaruh pemberian suplemen minuman buah sirsak 2x100 g/hari terhadap asam urat dan progresivitas hipertensi.

Metodologi: Dari Data Mlati Studi 10 tahun lalu didapatkan sebanyak 4190 data populasi Jawa, subyek dengan prehipertensi (usia 30-59 tahun) di wilayah Mlati Indonesia. Dari data tersebut, diambil 733 subyek sebagai sampel penelitian menggunakan *simple random sampling* dengan software statistik. Setelah 10 tahun dari 733 didapatkan 143 sampel yang menunjukkan prehipertensi esensial dengan asam urat normal tinggi, protein urine negatif, reduksi urine negatif. Dari 143 sampel diacak menjadi 2 kelompok menggunakan *randomized controlled trial* (RCT). Selama 3 bulan, kelompok I diberikan perlakuan 2x100 g/hari suplemen buah sirsak dan kelompok II tanpa perlakuan. Terdapat 27 subyek *drop out* pada minggu 7 (sisa 116) dan 4 subyek *drop out* pada minggu 13 (sisa 112). Analisis data menggunakan *Independent T-Test*, *Nonparametrik Mann-Whitney Test*, *Chi-Square Test*.

Hasil: Kelompok I dengan perlakuan menunjukkan penurunan rerata tekanan darah sistolik yang bermakna pada minggu 7 ($p=0,007$), penurunan rerata tekanan darah sistolik dan diastolik pada minggu 13 ($p=0,00$ dan $p=0,026$) dibanding kelompok II tanpa perlakuan. Kemudian, kelompok I dengan asam urat normal tinggi menunjukkan penurunan kadar asam urat normal secara bermakna pada minggu 7 ($RR=1,5$, $CI=1,2-1,9$; $p=0,001$) dan minggu 13 ($RR=1,3$ $CI=1,0-1,5$; $p=0,025$) dibanding kelompok tanpa perlakuan. Pengaruh konsumsi sirsak pada fungsi ginjal (eLFG / CKD-Epi), *micro uric aciduria*, kolesterol total, LDL, HDL dan trigliserida tidak signifikan ($p>0,05$).

Kesimpulan: Suplemen sirsak menurunkan tekanan darah dan kadar asam urat darah, tetapi tidak memiliki efek signifikan pada CKD-Epi, *micro uric aciduria*, kolesterol total, LDL, HDL dan trigliserida.

Kata Kunci: sirsak, prehipertensi, asam urat normal tinggi, fungsi ginjal, kardiovaskular, RCT.

ABSTRACT

Background: Individuals with a systolic BP 120–139 mmHg and or a diastolic BP 80–90 mmHg should be considered as prehypertensive. In four years, 40% of subjects with prehypertension were reported to become serious hypertensive without proper management. Prehypertension management does not require antihypertensive drugs. High normal uric acid (HNUA) and high uric acid serum increase the risk of incidence and progression of hypertension, chronic kidney disease, metabolic syndrome, diabetes mellitus and cardiovascular disease. HNUA, high uric acid serum and prehypertension should be lowered. Supplement soursop fruit juice 2x 100 g/day reported lower uric acid levels, ureum, creatinine and blood pressure. Soursop can improve kidney and cardiovascular function.

Objective: To determine the effect of soursop fruit juice supplement 2x 100 g/day to serum uric acid and progression of hypertension.

Method: Ten years ago in the Mlati Study Database, data of a prehypertensive population was generated, collected and registered in 4,190 cases (subjects aged 30–59 years) from the Javanese population of the Mlati region in Indonesia. Out of the data, 733 subjects were assigned in simple random sampling in the current study using statistical software. After 10 years, 143 samples out of the 733 subjects showed essential prehypertension combined with a HNUA level, negative urine protein and negative urine reduction. These 143 cases were randomly assigned into two groups that participated in an epidemiology study in the form of a randomized controlled trial (RCT). For a three-month period, the first group was given 2x 100g soursop fruit juice per day, and the second group received no treatment. In week 7, 27 subjects dropped out, and in week 13, four additional subjects left, leaving a total of 112 subjects in the study. The data analysis used independent t-test, nonparametric Mann-Whitney U test and chi-square test.

Results: The first group with treatment showed a significantly lowered mean systolic blood pressure after week 7 ($p=0.007$), lowered mean systolic and diastolic blood pressure after week 13 ($p=0.00$ and $p=0.026$, respectively), compared to the second group without treatment. Additionally, in the first group, cases with HNUA showed a significant decrease in serum uric acid level after week 7 ($RR=1.5$, $CI=1.2-1.9$; $p=0.001$) as well as after week 13 ($RR=1.3$ $CI=1.0-1.5$; $p=0.025$), compared to the group without treatment. The effect of soursop consumption on kidney function (eLFG/CKD-Epi), micro uric aciduria, total cholesterol, LDL, HDL and triglyceride was not significant ($p>0.05$).

Conclusion: Soursop supplement lowers blood pressure and the level of serum uric acid, but had no significant effect on CKD-Epi, micro uric aciduria, total cholesterol, LDL, HDL and triglycerides.

Keyword: soursop, prehypertension, high normal uric acid, kidney function, cardiovascular, RCT