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## Decoction of *Centella asiatica*, *Justicia gendarussa*, and *Imperata cylindrica* protect heart by oxidative stress diminution on spontaneous hypertensive rats

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Most of Indonesian rural community use decoction extract of *Centella asiatica* (L.,) Urban (C), *Justicia gendarussa* (J) and *Imperata cylindrica* (I) to treat hypertension. This study purpose was to get its rational form in lowering blood pressure and its effect on heart tissue prevention through oxidative stress inhibition. This experimental laboratory study divided 30 males (180-200 g) Wistar Kyoto rats and spontaneous hypertensive rats (SHR) into two groups, control (CTL) (aquadest) and treatment group (oral administered decoction of C (9 mg), J (9 mg), and I (5.4 mg)), once daily for 5 weeks. Weekly observation on systolic blood pressure (SBP), heart rates and metabolic profiles (body weight, food consumption, drinking water, urine volume and stool weight) was done. Echocardiography examination was taken before sacrifice. Oxidative stress assays were measured on serum and heart tissue lipid peroxidation and reactive oxygen species (ROS). Treatment group showed week systolic blood pressure on spontaneous hypertensive rat (SHR), respectively ( $p < 0.01$ ) and slower heart rates compared to SHR CTL group ( $p < 0.05$ ). There were no changes in metabolic profiles among all groups. Treatment group has increased in left ventricular heart fractional shortening (FS) and ejection fraction (EF) on SHR group ( $p < 0.01$ ). Treatment group demonstrated diminished serum ( $p < 0.001$ ) and heart tissue ( $p < 0.01$ ) malondialdehyde, anion superoxide and hydrogen peroxide generation on SHR group ( $p < 0.01$ ). Given decoction extract of C J I lowered SBP and protected heart by oxidative stress diminution on SHR. These findings suggest that C J I has potential therapeutic in the treatment of hypertension.

### Biography

Erna Sulistyowati has been pursuing her PhD from Kaohsiung Medical University, Taiwan since 2014. She is a Medical Doctor and a Lecturer at Faculty of Medicine, University of Islam Malang, Indonesia. She has been doing research about Herbal Medicine related to Cardiovascular System. She has published more than 12 papers in Indonesian journals. Recently she is doing research on Herbs-medicine as a part of scientific program in Indonesian Traditional Medicine.

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