

PENGARUH EKSTRAK TEH HIJAU (*Camelia sinensis*) TERHADAP MOTILITAS SPERMATOZOA

Studi Eksperimental pada Mencit (*Mus musculus*) Jantan Balb/C yang Dipapari Obat Nyamuk Bakar

Lydia Hapsari¹, Taufiq R. Nasihun², Eni Widayati³

¹Fakultas Kedokteran Unissula Semarang

²Bagian Biokimia Fakultas Kedokteran Unissula Semarang

³Bagian Kimia Fakultas Kedokteran Unissula Semarang

Lydia Hapsari, Mahasiswa Kedokteran Universitas Islam Sultan Agung, Jalan Kaligawe KM 4 Semarang 50012, Telp (+6224) 583584, Fax (+6224) 6594366

E-mail : Lydiasudjono06@gmail.com

ABSTRAK

Kejadian ROS akibat obat nyamuk bakar menyebabkan penurunan kualitas spermatozoa. Salah satu tanda penurunan kualitas spermatozoa adalah penurunan motilitas spermatozoa. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak teh hijau (*Camelia sinensis*) mencegah penurunan motilitas spermatozoa pada mencit (*Mus musculus*) Jantan Balb/C yang dipapari obat nyamuk bakar selama 28 hari.

Penelitian eksperimental dengan rancangan *post test only group design* menggunakan 35 ekor mencit yang dibagi menjadi 5 kelompok secara random. Kelompok (N) diberi makan minum saja; kelompok (-) diberi makan minum, dipapari obat nyamuk bakar 8 jam/hari; kelompok (P1); (P2); (P3) diberi makan minum, dipapari obat nyamuk bakar 8 jam/hari, ekstrak teh hijau dengan dosis secara berurutan 14; 28; 56 mg/ekor/hari. Perlakuan dilakukan selama 28 hari. Perhitungan motilitas spermatozoa pada hari ke 29. Selanjutnya data analisa dengan menggunakan uji *Kruskal Wallis* dilanjut dengan uji *Mann Whitney*.

Rerata perhitungan motilitas spermatozoa pada K(N), K(-), P1, P2 dan P3 secara berurut-urut adalah $54 \pm 2,44\%$; $18 \pm 3,74\%$; $40 \pm 2,42\%$; $22 \pm 3,74\%$; $12 \pm 1,22\%$. Hasil uji *Kruskal Wallis* rerata motilitas spermatozoa menunjukkan perbedaan signifikan pada lima kelompok ($p=0,001$). Uji *Mann Whitney* menunjukkan tidak ada perbedaan bermaknanya pada perbandingan K(-) terhadap P2 ($p > 0,05$).

Ekstrak daun teh hijau terbukti mencegah penurunan motilitas spermatozoa pada mencit (*Mus musculus*) Jantan Balb/C yang dipapari obat nyamuk bakar.

Kata Kunci : *Camellia sinensis*, *Katekin*, Motilitas, Obat nyamuk bakar, ROS.

Effect of Green Tea (*Camellia Sinensis*) Extract on Sperm Motility in Male Mice Exposed to Allethrin Based Mosquito Coil Smoke

Lydia Hapsari¹, Taufiq R. Nasihun², Eni Widayati³

¹Medical Faculty of Unissula Semarang

²Biochemistry of Medical Faculty of Unissula Semarang

³Chemistry of Medical Faculty of Unissula Semarang

Corresponding Author : Lydia Hapsari, Medical Faculty of Islamic Sultan Agung University, Jalan Kaligawe KM 4 Semarang 50012, Telp (+6224) 583584, Fax (+6224) 6594366 E-mail : Lydiasudjono06@gmail.com

ABSTRACT

Background : *The incidence of reactive oxygen species (ROS) due to allethrin based mosquito coil smoke causes a decrease in sperm quality including sperm motility. This study aims to determine the effect of green tea extract on sperm motility in mice exposed to allethrin based mosquito coil smoke.*

Method : *In this experimental study with post test only group design 35 male BALB/c mice were randomly divided into 5 groups. Group (N) was fed with a standard diet. Group (-) was fed a standard diet and exposed to allethrin based mosquito coil smoke for 8 hours per day. Treatment group P1, P2, P3 were fed with a standard diet, exposed to allethrin based mosquito coil smoke for 8 hours and treated with green tea extract at the dose of 14, 28, 56 mg / day respectively. On day 29, the sperm motility was evaluated. The data were analyzed by using Kruskal Wallis test followed with Mann Whitney test.*

Result : *The means number of motile spermatozoa in K (N), K (-), P1, P2 and P3 were $54 \pm 2.44\%$; $18 \pm 3.74\%$; $40 \pm 2.42\%$; $22 \pm 3.74\%$; $12 \pm 1.22\%$. there was a significant different among all groups ($p < 0.05$) but not between K(-) and P2.*

Conclusion : *Green tea leaf extract was proven to prevent the decrease sperm motility in the male mice exposed to allethrin based mosquito coil smoke.*

Keywords: *Camellia sinensis, Catechin, Motility, Mosquito coil smoke, ROS*