

INTISARI

Latar Belakang: Peningkatan intensitas pajanan gelombang telepon seluler yang dialami masyarakat seiring dengan kemajuan teknologi komunikasi saat ini. Pajanan gelombang telepon seluler dapat menimbulkan penyakit lingkungan dan harus diwaspadai. Salah satu akibat yang dapat ditimbulkan oleh pajanan gelombang telepon seluler ini adalah penurunan tingkat fertilitas.

Tujuan penelitian: Mengetahui pengaruh pajanan gelombang telepon seluler terhadap fertilitas mencit (*Mus musculus*) dengan mengukur diameter tubulus seminiferi dan menghitung prosentase sel-sel spermatogenik.

Metode penelitian: Penelitian ini menggunakan hewan uji mencit (*Mus musculus*) jantan galur Balb-C 20 ekor, berumur 3 bulan, dan berat badan \pm 30 gram. Mencit dibagi menjadi 4 kelompok, yaitu kelompok K (kontrol tanpa perlakuan apa-apa), P1 (terpajan gelombang telepon seluler jenis GSM *monophonic*), P2 (terpajan gelombang telepon seluler jenis GSM *polyphonic*), dan P3 (terpajan gelombang telepon seluler jenis CDMA). Hewan uji kelompok perlakuan diberi pajanan gelombang telepon seluler dengan cara meletakkannya di dekat telepon seluler yang sedang aktif menelpon. Lama pemajanan \pm 120 menit perhari selama 30 hari. Pada hari ke-31 hewan uji dibedah, diambil testisnya kemudian dibuat preparat histologi. Pengamatan preparat dilakukan dengan mengukur diameter tubulus seminiferi dan menghitung prosentase sel-sel spermatogenik, antara lain spermatogonium, spermatocyt, dan spermatidium. Hasil pengamatan dianalisis dengan metode Anova 1 jalan dilanjutkan dengan uji Tukey.

Hasil dan kesimpulan: Ukuran diameter tubulus seminiferi dan prosentase sel-sel spermatogenik khususnya spermatidium pada kelompok perlakuan mengalami penurunan secara bermakna ($p < 0,05$) dibandingkan kelompok kontrol. Disimpulkan bahwa gelombang telepon seluler menyebabkan terjadinya penurunan fertilitas dengan cara mengganggu proses spermatogenesis.

Kata kunci: fertilitas, gelombang telepon seluler, mencit, spermatogenesis.

ABSTRACT

Background: *The increasing intensity of cellular telephone wave's exposure that happens in the community along with the development of technology communication nowadays. The exposure of cellular telephone wave can cause enviromental disease and must be alerted. One of the effect that caused by cellular telephone wave is decreasing of fertility.*

Objectives: *To know the effect of the exposure of cellular telephone wave toward fertility in mice (*Mus musculus*) by measuring the diameter of tubulus seminiferi and the percentage of spermatogenic cells.*

Methods: *This research use mice (*Mus musculus*) strain Balb-C, 3 months in age, and \pm 30 grams in weight. This mice is divided into 4 groups, they are K (control), P1 (exposure of telephone celluler wave type GSM monophonic), P2 (exposure of telephone celluler wave type GSM polyphonic), P3 (exposure of telephone celluler wave type CDMA). These mice on treatment group were given exposure of telephone celluler wave by placing them near to the active telephone celluler which is in calling position. Duration of the exposure is \pm 120 minutes in a days. These mice were sacrificed by decapitation, its testes were taken and make the smear of testes. Microscopic observation was done by measuring the diameter of tubulus seminiferi and percentage of spermatogenic cells, such as spermatogonium, spermatocyt, and spermatidium. The results of observation was analyzed by one way Anova and continued by Tukey test.*

Results and Conclusion: *Comparing with the control group, the measurement of diameter tubulus seminiferi and percentage of spermatogenic cells especially spermatidium in treatment groups were decreasing. It can conclude that cellular telephone wave can cause the decreasing of fertility by inhibiting the spermatogenesis process.*

Key words: *cellular telephone wave, fertility, mice, spermatogenesis.*