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PENGARUH PAJANAN MIKROPLASTIK POLIETILENA TERHADAP MORFOLOGI SPERMA TIKUS PUTIH (*Rattus norvegicus*) GALUR WISTAR

RINCIAN HALAMAN (xiii + 85 halaman, 13 tabel, 15 gambar, 5 lampiran)

ABSTRAK

Tujuan

Mikroplastik telah menimbulkan kekhawatiran kesehatan karena keberadaannya yang semakin meningkat di lingkungan dan potensi akumulasinya di jaringan tubuh manusia. Beberapa studi menunjukkan bahwa mikroplastik dapat berefek negatif terhadap kualitas sperma. Penelitian ini bertujuan untuk mengetahui pengaruh pajanan mikroplastik polietilena terhadap morfologi sperma tikus putih (*Rattus norvegicus*) galur wistar.

Metode

Studi eksperimental murni dilakukan dengan desain *post-test only control group*. Tikus wistar jantan sebanyak 28 ekor dibagi menjadi 4 kelompok: kelompok kontrol negatif (K1), kelompok perlakuan yang diberi mikroplastik per oral dengan dosis 0.0375 mg/hari (K2), 0.3 mg/hari (K3), dan 0.6 mg/hari (K4) selama 14 hari. Morfologi sperma dianalisis dengan pewarnaan Giemsa.

Hasil

Data dianalisis menggunakan uji Kruskal-Wallis dengan hasil signifikasi p=0.003 dan uji *post hoc* Mann-Whitney menunjukkan perbedaan signifikan pada beberapa kelompok perlakuan.

Kesimpulan

Pajanan mikroplastik polietilena dapat menurunkan morfologi sperma normal pada tikus putih (*Rattus norvegicus*) galur wistar.

Daftar Pustaka : 74 (2018-2026)

Kata kunci : Infertilitas Pria, Mikroplastik, Morfologi Sperma, Polietilena

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THE EFFECT OF POLYETHYLENE MICROPLASTICS EXPOSURE ON SPERM MORPHOLOGY IN WISTAR RATS (*Rattus norvegicus*)

PAGE DETAIL (xiii + 85 pages, 13 tables, 15 figures, 5 appendices)

ABSTRACT

Objective
Microplastics have raised health concern due to their increasing presence in the environment and their potential accumulation in human tissues. Several studies have shown that microplastics may adversely affect sperm quality. This study aimed to determine the effect of polyethylene microplastics exposure on sperm morphology in Wistar rats (*Rattus norvegicus*).

Methods
A true experimental study was conducted using a post-test only control group design. Twenty-eight male Wistar rats were divided into four groups: a negative control group (K1) and three treatment groups receiving oral microplastics at doses of 0.0375 mg/day (K2), 0.3 mg/day (K3), and 0.6 mg/day (K4) for 14 days. Sperm morphology was assessed using Giemsa staining

Results
Daya analysis using *Kruskal-Wallis* test showed a statistically significant at p=0.003. Post hoc *Mann-Whitney U* test revealed significant differences between several treatment groups.

Conclusion
Polyethylene microplastics exposure can reduce normal sperm morphology in Wistar rats.

References : 74 (2018-2026)

Keywords : Male Infertility, Microplastics, Sperm Morphology, Polyethylene