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Spermatozoa Motility and Morphological Recovery Process in Mice (Mus musculus) after the Induction of 2-Methoxyethanol

Abstract

This study used 30 male BALB/C mice aged 8 - 9 weeks with bodyweight of 28 - 30 grams. These experimental animals were divided into 6 groups, each comprising 5 mice. Group K1 was given with 2-ME of 200 mg/kg intraperitoneally every day for three weeks. The groups P1, P2, P3 and P4 were given with 2-ME, also for three weeks, and the administration was subsequently ceased for 1, 2, 3, and 4 weeks, respectively. Group K0 (control) was injected with saline solution. Spermatozoa were taken from epididymal cauda. Observation was carried out for the motility of 100 spermatozoa with types A, B, C or D (WHO, 1992), as well as to normal and abnormal morphology in head and tail, and combination of head and tail. Data were tested using one-way variant analysis. Results showed that the administration of 2-ME every day for 3 weeks resulted in azoospermia, so that sperm motility and morphology was not observable. However, by providing recovery period from 1 to 4 weeks, sperm motility and morphology was found to recover into normal. There was a significant difference in sperm motility and morphology after treatment and recovery. As conclusions, 2-Methoxyethanol given to male mice for 3 weeks may result in azoospermia, and the effect of the length of cessation period of 2-ME administration increases the recovery of sperm morphology and motility.

Keyword : 2-methoxyethanol, sperm, motility, and, morphology,