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An *In Vivo* Assay of the Mutagenic Potential of Praziquantel (PZQ) Using Sperm Head Abnormality Test

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ABSTRACT The mutagenic potential of praziquantel (PZQ) 2-(Cyclohexylcarbonyl) – 1, 2, 3, 6, 7, 11b-hexahydro-4*H*-pyrazino-(2,1-*a*) isoquinolin-4-one, an antihelmintic was evaluated *in vivo* using sperm head abnormality assay of about 15 weeks-old isogenic mice. For 3, 5, 7 weeks of drug exposure period, three different dose levels 0.02; 0.04; and 0.08 (mg/gbwt) of PZQ (the calculated equivalence of human therapeutic dose-HTD) were intraperitoneally administered. Observations revealed that PZQ had no significant effect on the body weights of the tested animals. Seven types of sperm head morphological abnormalities in varying degrees were observed. Sperm head abnormality was 5.14%, 5.13% and 5.03% in the control mice and 5.62%, 6.56% and 6.72% in the experimental models for the 3, 5 and 7 weeks exposure period respectively. The abnormality was lower in the control as compared to the experimental mice and this represents a difference of 0.48% (3 weeks); 1.43% (5 weeks) and 1.69% (7 weeks). The difference in the abnormal sperm heads between the control and experimental model is statistically insignificant ($P<0.05$). The induction was slightly dose-dependent with 0.08mg which was the highest dose used inducing the highest number of sperm head abnormalities for each exposure period. PZQ is probably not mutagenic because the values of aberrant sperm heads that were present in the lower dose levels are close to those of the control. PZQ, therefore, may be a mutagenically safe drug for mass therapy and the control of schistosomiasis in Africa.