

Original Article

Teratogenic effect of artesunate on the morphometric parameters of the body and developing olfactory bulb of wistar rats following maternal oral administration

Sunday A. Musa, Getrude N. Kwado, Andrew E. Ivang, Akinyemi A. Omoniyi, Augustine O. Ibegbu

Artesunate an antimalarial drug has been reported to cause irreversible brain damage in experimental rats, and to cause other toxic effects like haemolysis and neutropenia. This study was conducted to investigate the morphometric teratogenic effect of the antimalarial agent artesunate (ARTS) on the developing olfactory bulb of Wistar rats following maternal oral administration. A total of 16 virgin female and 8 male Wistar rats weighing 150 g were used for this study. The oestrous cycle of the female rats were determined and at the proestrous phase they were allowed to mate with the male overnight. Pregnant rats were administered ARTS daily from gestational day 8-12 via oral gavages, at test doses of 0, 2, 4, or 8 mg/kg (4 females per group). The results showed significant reduction in the crown-rump length, hind-limb length, fore-limb length and organ-body weight ratio in the pups. There was significant decrease in the length, width, thickness, and weight of the olfactory bulb at <0.001 , which was dose dependent, with more effect on the 8 mg/kg group than in the 2 mg/kg group. The effect of artesunate was dose dependent, and has been shown to significantly decrease the crown-rump length, fore-limb length, hind-limb length, and organ body weight ratio of the pups and it also significantly decreased the weight, length, thickness and width of the olfactory bulb with no observable adverse effect level to the 2 mg/kg/day group, thus ARTS might affect embryo and foetal development.

Keywords: Artesunate, Teratogen, morphometry, Wistar rat pup, olfactory bulb
