Evaluation of destructive effects of exposure to cisplatin during developmental stage: no profound evidence for sex differences in impaired motor and memory performance.

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Abstract
We have elucidated the alteration in hippocampal and cerebellum function following chronic cisplatin treatment in male and female rats. Hippocampus and cerebellum related behavioral dysfunction in cisplatin-treated [intraperitoneally, 9 mg/(kg/week) for 9 weeks from -32-day-old] rats were analyzed using explorative, motor function, learning, and memory tasks (grasping, rotarod, open field, and Morris water maze tests). Exposure to cisplatin impaired the motor coordination in male and female rats. Exposure to cisplatin was reflected by a decrease in grasping time compared to vehicle-treated controls (saline) only in male rat while there were not any differences in female rats. When the rearing frequency, total distance moved and velocity of their recorded in open field test, both males and females were dramatically affected by exposure to cisplatin. Compared to the saline, male and female rats trained 9 weeks after cisplatin injection showed significant memory deficits in the Morris water maze test. However, hippocampal and cerebellum functions of male and female rats were profoundly affected by exposure to cisplatin while no sex differences in the most variable were evident.

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