

PRELIMINARY COMMUNICATION

NOCICEPTIVE CHANGES IN RATS AFTER PRENATAL EXPOSURE TO VALPROIC ACID

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Abnormalities in anatomy and function of the cranial nerve motor nuclei and brain stem structures have been demonstrated in some people with autism and can be modeled in rats by exposure to valproic acid (VPA) during very early nervous system developmental stages (neural tube closure). The aim of this study was to investigate if VPA will have an impact on nociception in rats because of reported hypoalgesia in a subgroup of autistic patients. Pregnant females were treated *ip* with 600 mg/kg of sodium valproate on day 12.5 of gestation. Nociception was measured in offsprings by tail-flick and thermal paw withdrawal tests in two developmental stages: prepubertal (80–90 g) and adulthood (360–440 g). Results showed significant differences in pain sensitivity with hypoalgesia in male rats treated with VPA compared to male control in both developmental stages. The outcome of our study suggests that rats exposed prenatally to VPA show abnormalities in nociception similar to those observed in human autistic patients. Interestingly, naloxone (1mg/kg) had no impact on nociception in offsprings of VPA-treated rats.

Key words: *animal model, autism, nociception, valproic acid*