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ANXIETY-LIKE BEHAVIOR IN ADOLESCENT MICE PRENATALLY EXPOSED TO DIFFERENT DOSES OF LEVETIRACETAM

POSTER SESSION 02 - SECTION: STRESS, ANXIETY AND APPETITIVE LEARNING

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Aims: Levetiracetam (LEV), which belongs to a new generation of antiepileptic drugs, has been recognized as a relatively safe antiepileptic therapy, according to studies on neurodevelopmental outcomes in children exposed to LEV *in utero*, although some animal studies reported skeletal abnormalities. This study deals with the influence of prenatal exposure to LEV in the doses that cover therapeutic range in humans on gross skeletal structure and anxiety-like behavior in adolescent mice. **Methods:** Adult 8-weeks old female NMRI mice were randomly divided into four groups and treated subcutaneously during breeding and gestation with saline (control) or LEV in the doses of 158 mg/kg/day (LEV-158), 211 mg/kg/day (LEV-211), or 316 mg/kg/day (LEV-316). After delivery, each female with the progeny was housed separately. Weaning and separation by sex were done on the 20th postnatal day (P20). The elevated plus-maze test was used to assess the anxiety-like behavior in both male and female offspring on P37. **Results:** Females and males in the LEV-158 and LEV-316 group displayed less anxiety-like behavior compared to the control, while in the LEV-211 group such behavior was not observed. Sex-related differences in anxiety-like behavior were not detected within any LEV group, as well as visible skeletal malformations. **Conclusion:** The findings in the mouse model suggest that prenatal exposure to LEV could be associated with less anxiety-like behavior in adolescence, paying attention to the U-shaped dose-response and highlighting the behavioral outcomes of small LEV doses. **Support:** Ministry of Education, Science, and Technological Development of the Republic of Serbia (Contract 451-03-9/2021-14/200007).