THE EFFECT OF INTERFERON-ALFA ON BEHAVIOR OF YOUNG AND OLD RATS

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Interferon alfa (IA) has a wide spectrum of action and is used in clinic for preventive maintenance and treatment of virus diseases. Recent data show that IA, being an active neuroimmune modulator, exerts direct influences on functioning of various brain structures. The purpose of this study was to assess the effects of IA at various doses on rat behavior at different ages.

**Methods:** Animals were studied in the open field test. 33 animals were tested: three groups of young rats (4 months) and three groups of old rats (20 months). For 30 days daily, all experimental animals were injected intranasal water solution of IA (Lokderon, Biomed, Russia): two groups (young and old rats) received 10 IU and two groups (young and old rats) 350 IU of IA. Control groups received the same volume of distilled water. Animals were tested thrice in the open field: before the injection of interferon (day 0), on day 8 and 16, assessing locomotion activity (squares crossed), exploration (quantity and time of racks), searching-locomotion activity (hole-poking), duration of grooming and freezing.

**Results:** Behavioral dynamics of all young animal groups were unaltered by IA. In contrast, all old animal groups showed reduced locomotion and exploration, compared to the young animals. In addition, in the old animal groups, interferon at 10 and 350 IU on the day 16, increased the duration of freezing and grooming. These results clearly demonstrate differential age-specific effects of IA on rat behavior, showing higher uneasiness of behavior in the old group on day 16 of IA treatment. The study was supported by the grant RHF 04-06-00217a.