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ALTERACIONES CONDUCTUALES INDUCIDAS POR LA TEMPRANA EXPOSICIÓN AL RUIDO DURANTE DISTINTAS ETAPAS DEL DESARROLLO. MEDIADORES BIOQUÍMICOS INVOLUCRADOS Y ESTRATEGIAS DE NEUROPROTECCIÓN

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RESUMEN

Estudios previos mostraron que la exposición de ratas inmaduras al ruido puede provocar alteraciones bioquímicas y en comportamientos relacionados al hipocampo, como la memoria y la ansiedad. Asimismo, estos parámetros han sido correlacionados con un desbalance oxidativo en el hipocampo. Por otra parte, la crianza en un ambiente enriquecido (AE) ha mostrado ser una herramienta neuroprotectora ante diferentes lesiones cerebrales. El objetivo del presente trabajo fue evaluar en ratas expuestas al ruido a diferentes edades la existencia de alteraciones en comportamientos relacionados al hipocampo, así como en los niveles de Trx1, una enzima antioxidante, en el hipocampo. La posible prevención de estas alteraciones a través de la crianza en un AE también fue examinada. Ratas de 7 y 15 días fueron expuestas a ruido (95-97 dB, 2h). Luego del destete, grupos de 3-4 ratas fueron transferidos a jaulas de AE o a jaulas estándar. Una semana después, se realizaron pruebas conductuales y disección del hipocampo para western blot. Se hallaron alteraciones significativas en conductas dependientes del hipocampo, así como también diferencias en los niveles de Trx1 en dicha estructura, que varían según la edad de exposición. Por otra parte, el AE fue capaz de restablecer algunos de los parámetros alterados por la exposición al ruido.

Palabras clave

Ruido, Hipocampo, Comportamiento, Ambiente enriquecido

ABSTRACT

BEHAVIORAL ALTERATIONS INDUCED BY EARLY NOISE EXPOSURE AT DIFFERENT DEVELOPMENT STAGES. BIOCHEMICAL MEDIATORS INVOLVED AND STRATEGIES OF NEUROPROTECTION

Previous studies showed that exposure of immature rats to noise can induce hippocampus-related behavioral and biochemical alterations. Likewise, a correlation with hippocampal oxidative status was found. Moreover, rearing these animals in an enriched environment (EE) has shown to be an effective protective tool against different central nervous system injuries. Therefore, the aim of the present work was to test if behavioral alterations induced by noise exposure at different ages might be related with hippocampal oxidative changes. The possible prevention of these changes through the use of an EE was also assessed. Rats of 7 and 15 days were exposed to noise (95-97 dB, 2h). After weaning, groups of 3-4 rats were transferred to EE or standard cages. One week later, different behavioral tests and hippocampus dissection for western blot were performed. Results showed behavioral and Trx1 levels differences

between noise-exposed animals depending on the age of exposure. Moreover, rearing rats in EE might modify some of the changes induced by a previous exposure to noise.

Key words

Noise, Hippocampus, Behavior, Enriched environment

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