Effect of monosodium glutamate on the psychoneuroendocrine-immune system in Balb / c mice and their offspring

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Abstract

Introduction: Monosodium Glutamate (MSG) is used as a flavor enhancer, but its actions in health are a debated issue. Its effects on the Psychoneuroendocrine-immune system are not known.

Objective: To determine the effect of monosodium glutamate on body mass, reproduction and lactation in Balb / c mice and their offspring.

Materials and methods: 20 mice in the neonatal period are administered subcutaneous GMS 4mg / kg diluted in 10 microliters of distilled water and others with 0.9% NaCl. At 90 days the Lee Index is calculated to determine the body weight, then they are paired in 4 groups of 5 mice where males and females are interbreed with GMS and 0.9% NaCl. The weight of the offspring in these crosses is compared to indirectly assess lactation.

Results: 100% of mice treated with MSG are obese because they have a Lee Index higher than 0.300. The females with GMS give birth to less than 4 offspring while the females (NaCl) mate with males (GMS) have an average offspring of 4-5 offspring. The weight of the offspring born of parents treated with MSG is lower than those not treated.

Conclusions: MSG administered subcutaneously in murine neonates induces obesity. Reproduction and lactation are affected in those treated with MSG since the number of offspring and the body weight of their offspring is lower than that of the untreated.

Keywords: Monosodium glutamate / Psychoneuroendocrinoimmunology / Obesity / Reproduction / Lactation /