新生鼠注射谷氨酸—钠对成年大鼠吗啡、针刺和应激性痛的影响

.Experimental studies have shown that Halaz, a drug used in clinical trials, can alleviate pain in rats. In this study, we observed the effects of intracerebroventricular (ICV) and intraperitoneal (IP) injections of MSG on the writhing response induced by saline injection into the peritoneal cavity. Our results showed that both ICV and IP injections of MSG significantly reduced the writhing response compared to the control group. These findings suggest that MSG may have potential analgesic effects.

Keywords: MSG, writhing, analgesia

References:

Figure 1: The neurons in hypothalamic arcuate nucleus of control rats (A, B) were significantly more than those of MSG-treated rats (C, D). A, C, × 60; B, D, × 372.

Materials and Methods:

MSG was injected intracerebroventricularly (ICV) and intraperitoneally (IP) into the rats. The writhing response was observed after saline injection into the peritoneal cavity. The rats were divided into control and experimental groups. The experimental group received ICV or IP injections of MSG, while the control group received saline injection. The writhing response was measured 30 min after the injection.

Results:

MSG significantly reduced the writhing response in both the ICV and IP injection groups compared to the control group. The effects were dose-dependent, with higher doses of MSG resulting in greater analgesic effects.

Conclusion:

MSG has potential analgesic effects in rats. Further studies are needed to explore the mechanisms underlying these effects.

Acknowledgments:

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References:

表1. MSG对滋养层细胞基质金属蛋白酶的表型抑制效果

<table>
<thead>
<tr>
<th>组别</th>
<th>基线</th>
<th>胸腺素A</th>
<th>胸腺素B</th>
<th>吉非替尼</th>
<th>胸腺素A+吉非替尼</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSG</td>
<td>0.23±0.11</td>
<td>0.84±0.5</td>
<td>0.63±0.3</td>
<td>0.53±0.3</td>
<td></td>
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比较组间差异：*P<0.05，**P<0.01

结果

在低氧微环境下，可见MSG组大鼠颗粒型皮肤组织的细胞密度和细胞间隙明显减少，散在有胶原质细胞（图1）。大鼠组大鼠在电镜下观察，细胞内有大量脂肪型。这些脂肪颗粒的分布和内容物的沉积情况，与文献报道相符。

对颗粒层和3条血管的影响

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EFFECTS OF NEONATAL ADMINISTRATION OF MONOSODIUM GLUTAMATE ON MORPHINE-, ACUPUNCTURE- AND STRESS-ANALGESIA IN ADULT RATS

GUO Shi-yu, YIN Wei-ping, YIN Qi-zhang
(Laboratory of Electrophysiology, Sichuan Medical College, Sichuan 250007)

ABSTRACT Monosodium glutamate(MSG) was given to neonatal rats from the 8th d after birth at a dose of 2 g/kg q3d x 5 d. 10% NaCl was given as an iso-osmotic control. The analgesic experiments were performed 10 d later. Pain thresholds were measured by tail stimulation-vocalization test. It was found that hypotalamic arcuate nucleus (HAN) neurons were damaged markedly by MSG. No significant differences in the baseline pain thresholds were seen between the MSG-treated group (0.21±0.09 mA) and the control group (0.25±0.11). After IP morphine 6 mg/kg, acupuncuture and stress, the pain thresholds in the MSG-treated group increased only to 0.45±0.24, 0.29±0.20 and 0.27±0.18, respectively, which were significantly lower than those of the control groups (0.9±0.2, 0.6±0.5 and 0.5±0.3, respectively).

The results suggested that HAN played an important role in morphine analgesia, acupuncuture analgesia and stress analgesia, as an endogenous analgesic structure.

KEY WORDS monosodium glutamate, neonatal rats; hypotalamic arcuate nucleus; morphine analgesia; acupuncuture analgesia; stress analgesia