내분비-A-025 : 지상발표

MK-677 (a Growth Hormone Secretagogue)의 쥐의 성장에 미치는 효능 연구

연세대학교 의과대학 소아청소년과 [1], 소화아동병원 소아청소년과 [2]
정모경 [1],김기은 [1],권아름 [1],채현욱 [1],김덕희 [2],김호성 [1]

The effect of MK-677 (a Growth Hormone Secretagogue) on somatic growth in rats

Yonsei Univeresity College of Medicine Department of Pediatrics[1] Sowha Children's Hospital Department of Pediatrics[2]
Mo Kyung Jung[1],Ki Eun Kim[1],Ah Reum Kwon[1],Hyun Wook Chae[1],Duk Hee Kim[2],Ho-Seong Kim [1]

Background: MK-677 (ibutamoren mesylate), an orally active nonpeptide mimic of growth hormone releasing peptide (GHRP), has emerged as important roles on enhancing the pulsatile release of growth hormone (GH) in the anterior pituitary gland with resulting sustained elevation in insulin-like growth factor (IGF-1) level. Several studies had shown that these growth hormone secretagogues could stimulate the release of GH effectively by different ways such as intravenous, subcutaneous, intraperitoneal, oral administration in animals. Objective: We have investigated whether MK-677 could successfully stimulate the serum GH and IGF-1 secretion and enhance the length of growth palate on rats per oral (PO) and intraperitoneal (IP) administration. Study design: The effects of MK-677 on somatic growth were studied in rats. During 7 weeks, control group was received the same amount of normal saline every day, while experimental group was administered the MK-677 in two different ways (dose: 4mg/kg PO, 2mg/kg IP). To evaluate the effect of MK-677, we daily measured the body weight, length of rats, and we analyzed the level of serum GH, IGF-1, and the length of tibial growth palate after 7 weeks after MK-677 administration in each group. Results: The results showed no significant difference in the body weight, length and tibia length (normal control: 38.6 mm, IP group: 38.6mm, PO group: 38.5mm) in all groups. After given MK-677, the level of GH was sufficiently elevated comparing to baseline level. The maximum concentration of serum GH level was estimated on 20 minutes after injection in IP group, whereas the peak concentration of PO group was observed in 60 minutes after administration. However, serum IGF-1 levels (normal control: 856 ng/ml, IP group: 923.3 ng/ml, PO group: 923.4 ng/ml) showed no significant difference comparing to control group. In addition, the measurement of length of growth palates was performed that it also showed no difference in all groups (normal control: 329.3 μm, IP group: 314.3 μm, PO group: 335.5 μm). Conclusion: The administration of MK-677 could increase the level of serum GH temporarily, but it could not effect on increasing the IGF-1 level and stimulating the growth palate on rats.