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Effects of calcium sensitizer MCI-154 on cardiac function after endotoxic shock in rabbits*

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Abstract Objective: To observe the effects of MCI-154, a calcium sensitizer, on cardiac function after endotoxic shock. Methods: Ten hours after the rabbits were given injection of 1.0 mg/kg endotoxin (E. coli, O111: B4) via marginal ear veins, 0.1 mg/kg MCI-154 was intravenously injected and then 50 ml/kg normal saline (NS)+ 0.1 mg/kg MCI-154 continuously infused at a rate of 0.7ml/kg. During this process, the parameters of cardiac function were measured. Results: Ten hours after the endotoxin injection, heart rate (HR) was significantly increased while the mean arterial blood pressure (MAP), left ventricular systolic pressure (LVSP), isovolumetric pressure (IP), myocardial contractility (MC) and the area of P-dp/dtmax vector loop (Lo) were all markedly decreased. Treatment with 50 ml/kg NS alone had slight effects on these parameters. On the contrary, LVSP, MC and Lo were significantly increased after treatment with MCI+NS. Conclusion: MCI-154 can exert significant therapeutic effects on cardiac dysfunction after endotoxic shock for it improves cardiac function, dilates peripheral blood vessels and slightly affects HR.

Key words calcium sensitizer; MCI-154; endotoxic shock; cardiac dysfunction; rabbit

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高选迷切加半胃切除的实验研究

个案与短篇

An experimental study of highly selective vagotomy plus hemigastrectomy

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为解决传统胃大部切除术后胃肠功能紊乱和高选迷切(HSV)因迷切不完全,以及迷切后胃窦 G细胞过度分泌胃泌素所致的术后复发,我们于 1988年设计了高选迷切加半胃切除(简称 HSV+ HG)治疗消化性溃疡,为证实该术式对防止胆汁返流和对胃功能的影响,我们从 1992年开始,进行动物实验研究,将结果报告如下。

1 材料和方法

杂种狗 30条,雌雄不限,随机分成 3组,每组 10条。选氯胺酮麻醉,上腹正中切口入腹,然后测十二指肠、胃窦、胃体底的肌电图,于胃大弯切开胃壁探查有否胆汁返流入胃,取 15 ml胃液测定胆酸。A组: 先游离胃大弯,距幽门环 6 cm处,沿胃大弯依次切断、结扎胃网膜血管至无血管区,然后按常规完成 HSV,重复测定肌电图,距鸦爪神经第一分支 1 cm处环形切开胃窦浆肌层,于粘膜下分离胃窦粘膜到幽门上方 2 cm处切断,测量十二指肠、胃窦浆肌层的肌电图,然后切除含胃窦粘膜在内的半胃,小弯侧关闭,大弯侧全层与胃窦粘膜及粘膜肌层吻合,吻合完成后,将胃窦浆肌层间断缝合于胃体,再次测量肌电图。B组: 按胃大部切除游离,然后按上述方法分离胃窦浆肌层切除含胃窦粘膜在内的半胃并吻合,分别测量十二指肠、胃窦浆肌层、胃底体肌电图。C组: 按胃大部切除常规切胃并行 Billroth I 式吻合,最后测量胃、十二指肠肌电图。分别于术后 3 6个月再次手术,测肌电图、肉眼观察胃、切开胃壁观察有否胆汁返流并取胃液测胆酸浓度, A B两组切除胃窦做病理检查,胆酸测量采用放免方法。

2 结果

A组: HSV术后胃体、底张力降低,肌电图较正常频率明显减少,波幅低平,胃窦浆肌层间断缝合于胃体后上述改变明显改善,至术后 3月基本恢复到正常,十二指肠、胃窦浆肌层肌电图接近正常。再次手术见胃窦浆肌层色泽正常,触之柔软有弹性,胃的张力恢复,无胃潴留及胆汁返流,吻合口通畅。病理见浆肌层与胃壁之间有较多肉芽、毛细血管和少量纤维组织、肌间神经丛及神经节细胞,吻合口周围轻度炎性反应。胆酸手术前、后无明显差异。B组: 残胃张力、肌电图接近正常,而胃窦浆肌层、十二指肠肌电图几乎呈一条直线, 3 6个月后再次手术见胃窦浆肌层色苍白、无光泽、触之无弹性、变硬变薄,十二指肠、幽门肌电图仍呈一条直线,切开胃壁见胃潴留,胃液呈绿

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Dynamic changes in eosinophil infiltration and apoptosis in asthmatic guinea pigs*

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Abstract Objective: To investigate the relationship between pulmonary eosinophil (Eos) infiltration and apoptotic dysregulation in asthmatic guinea pigs. Methods: After the model of asthma was established with ovalbumin sensitization in guinea pigs, the dynamic changes of pulmonary Eos infiltration, cytology of braonchoalveolar lavage fluid (BALF) and apoptosis were observed with *in situ* DNA tailing technique. Results: The increase in Eos infiltration around the blood vessels occurred within 24 h while that around the bronchi and increase of Eos number in BALF persisted for at least 7 d after the sensitization. The rates of Eos apoptosis in asthmatic guinea pigs at the 24th, 48th and 72nd h after the sensitization were respectively (2.1± 1.3)%, (3.7± 2.3)% and (4.6± 2.7)%, which were significantly lower than those in the normal guinea pigs ($P < 0.05$). Conclusion: The Eos infiltration in the lungs is inhibited to result in prolonged increase of Eos, which may play an important role in the pathogenesis of asthma.

Key words asthma; apoptosis; eosinophil; bronchoalveolar lavage fluid; guinea pig

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色,吻合口通畅,病理见胃窦浆肌层纤维化,未见肌间神经丛及神经节细胞,吻合口周围炎明显。胆酸明显升高。C组:十二指肠肌电图几乎呈一条直线,胃体、底与正常无明显差异,有轻、中度胃潴溜,及胆汁返流。吻合口周围炎性反应明显,胆酸明显升高。

3 讨论

传统胃大部切除治疗消化性溃疡已有 100多年的历史,虽然效果肯定,但是并发症多,尤其是切除幽门后致返流性胃炎进一步可发展成残胃癌,越来越受到重视。1969年 Johnston[1]开始用高选迷切治疗十二指肠球部溃疡,其主要优点是:保留了胃窦、幽门的神经,同时保留了幽门+十二指肠的解剖完整性,不需附加引流,不但能达到一定的降酸效果,而且不会发生胆汁返流和胃大部切除术的一些并发症。但是该术式常因迷切不完全以及术后因胃窦 G细胞分泌过多的胃泌素导致复发率增高(一般报道 10%~ 45%)[2],为了克服胃大部切除和 HSV两术式的缺点,我科于 1988年设计了 HSV+ HG治疗消化性溃疡[3]。为了解该术式对预防胆汁返流和对胃功能的影响,我们于 1992年开始进行动物实验研究,从胃肌电图、胆酸测定、病理及术中肉眼观察结果显示,HSV+ HG由于保留了胃窦浆肌层的功能,在其带动下胃及幽门的功能不受影响。HSV+ HG不但能防止胆汁返流,而且,对胃及幽门的功能无影响,在高选迷切的基础上加作含胃窦粘膜在内的半胃切除,可以减少溃疡复发。保留了胃十二指肠解剖完整性,不会发生胃大部切除的一些并发症,认为是目前治疗溃疡病较理想的术式,值得临床推广应用。

关键词　胃疾病/外科手术;高选迷切加半胃切除

中图法分类号　R656.6

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