硫酸镁对兔实验性心肌梗塞范围的影响

王瑞英、吴宜良、林育新、蒋显华、潘海华、李爱国、黄翠月（厦门卫生学校生理教研组，药理教研组，化学教研组，厦门 361003）

摘要
通过对实验性心肌梗塞兔用硫酸镁处理的观察，发现其对心肌梗塞范围有一定程度的影响。

关键词
心肌梗塞；硫酸镁；心电图；心肌酶

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材料与方法
心电图正常的大白兔32只，8只随机，随机分组。LAD（前室间支）造模，NS组（生理盐水），0.5组（0.5%硫酸镁），每组各
Fig. 2. The Made part shows the size of myocardial infarction. A. Götum vitavus blipupptulias level, the size of infarction is of 2.6/8 (3%) C. Margo superior muscula papillares level, the size of infarction is of 3/8 (38%). D. Margo inferior muscula papillares level, the size of infarction is of 1.6 (25%). E. Apex cordis level, the size of infarction is of 1/6 (17%).

结果

心电图显示心电图在后24小时明显心电图变化。

图2显示了心电图的放大图。

图3显示了心电图的放大图。

图4显示了心电图的放大图。

图5显示了心电图的放大图。

图6显示了心电图的放大图。

图7显示了心电图的放大图。

图8显示了心电图的放大图。
Tab 1. Precontrast electrocardiogram of ST segment and abnormal Q wave in saline (NS), propranolol (P) and 10% MgSO4 (M), 2-72 h after occlusion of LAD of rabbits, n = 8, 8 ± SD, **p<0.05, ***p<0.001 vs NS, °p<0.05, †p<0.01 vs P.

<table>
<thead>
<tr>
<th>Group</th>
<th>2h</th>
<th>4h</th>
<th>24h</th>
<th>48h</th>
<th>72h</th>
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</thead>
<tbody>
<tr>
<td>NS</td>
<td>11.5 ± 1.5</td>
<td>10.5 ± 2.5</td>
<td>9.2 ± 0.4</td>
<td>7.4 ± 0.4</td>
<td>7.4 ± 0.4</td>
</tr>
<tr>
<td>NST</td>
<td>7 ± 2.4</td>
<td>7 ± 2.4</td>
<td>5.4 ± 2.5</td>
<td>4.8 ± 2.8</td>
<td>4.8 ± 2.8</td>
</tr>
<tr>
<td>M</td>
<td>4.2 ± 2.4</td>
<td>3.2 ± 1.8</td>
<td>2.7 ± 0.7</td>
<td>2.4 ± 2.4</td>
<td>2.4 ± 2.4</td>
</tr>
<tr>
<td>ST</td>
<td>4.2 ± 2.4</td>
<td>3.2 ± 1.8</td>
<td>2.7 ± 0.7</td>
<td>2.4 ± 2.4</td>
<td>2.4 ± 2.4</td>
</tr>
<tr>
<td>M</td>
<td>4.2 ± 2.4</td>
<td>3.2 ± 1.8</td>
<td>2.7 ± 0.7</td>
<td>2.4 ± 2.4</td>
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</tr>
<tr>
<td>NO</td>
<td>9.2 ± 1.8</td>
<td>8.7 ± 1.8</td>
<td>8.2 ± 1.8</td>
<td>7.9 ± 1.8</td>
<td>7.9 ± 1.8</td>
</tr>
<tr>
<td>M</td>
<td>8.2 ± 1.8</td>
<td>8.2 ± 1.8</td>
<td>8.2 ± 1.8</td>
<td>8.2 ± 1.8</td>
<td>8.2 ± 1.8</td>
</tr>
</tbody>
</table>

Tab 2. Myocardial infarction and heart rates of rabbits after occlusion of LAD in saline (NS), propranolol (P) and 10% MgSO4 (M), n = 8, 8 ± SD, **p<0.05, ***p<0.001 vs NS.

<table>
<thead>
<tr>
<th>Group</th>
<th>Extent of infarction (% BSA)</th>
<th>Heart rates (bpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS</td>
<td>25 ± 2.7</td>
<td>143 ± 25</td>
</tr>
<tr>
<td>P</td>
<td>31.5 ± 2.5</td>
<td>154 ± 25</td>
</tr>
<tr>
<td>M</td>
<td>14.5 ± 2.5</td>
<td>138 ± 25</td>
</tr>
</tbody>
</table>

Fig. 1. Ventricular arrhythmia (lead II) in rabbits 2 h after occlusion of LAD, A) in saline 30 ml caused ventricular electrical alternation, B) in propranolol 5 mg caused ventricular premature beats, C) in 10% MgSO4 660 mg, no ventricular arrhythmia was seen.

讨 论

本实验结果表明 MgSO4 使心电图 心肌梗塞范围，能明显改善兔实验性 AMI 心肌前 区 ST 段抬高及减少坏死 Q 波，而且还能减 慢 AMI 后的的心率和有良好抗心律失常，使在与已知有少量实验性心肌梗塞面积和抗心律失常的普洛尔类进行的对照实验中也得 以证实，以上表明 MgSO4 可作为治疗 AMI 的 一种潜在药物。

本实验选用 58% 分流量心肌梗塞范围，此法简单易行，是它作为估计实验性心肌缺血 损伤程度的一种基本指标。

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Influence of magnesium sulfate on sizes of myocardial infarction in rabbits

WANG Shu-Rong, WU Xue-Nong, LAI Xiao-qing, CAI Bi-Hua, PAN You-Sheng, LI Ai-Zhu, HUANG Li-Yue (Department of Physiology, Pharmacology, Pathology, and Physics, School of Health of Xiamen, Xiamen 361005)

CHEN Bing-Huang (Department of Medicine, Xiamen First Hospital, Xiamen 361002)

ABSTRACT Myocardial infarction was made in open-chest rabbits. Immediately after the occlusion of the anterior descending branch of left coronary artery (LAD), 10% MgSO₄ 480 mg/kg was iv to 8 rabbits. The same doses of MgSO₄ were given 24 and 48 h later. Saline (20 ml) and propanisol (2 mg/kg) were given separately to another 2 groups of rabbits for comparison.

The results showed that: (1) The extents of the experimental myocardial infarction were 14 ± 5, 15 ± 5, and 22 ± 7% for magnesium sulfate (M), propranolol (P), and saline group (NS), respectively.

(2) The endocardial ST segment elevation was improved (NST: 8 ± 4, 0.1 ± 0.4, 7.5 ± 4.0 ± 1.8, and 11.2 ± 1.5, 7.2 ± 4.0 ± 1.8, 0.4 ± 1.1, 4.8 ± 2.7, 2.4 ± 1.2 and 8 ± 3, 2.7 ± 0.7 for (M), (P) and (NS) 2 and 72 h after LAD). (3) The numbers of pathologic Q wave were decreased (5.6 ± 1.0, 5.2 ± 1.0, and 9 ± 3, 9 ± 4 for (M) and (NS) groups 24 and 72 h after LAD). (4) The heart rates were declined (131 ± 10, 138 ± 11, and 163 ± 60 for (M), (P) and (NS), respectively. (5) The ventricular arrhythmia was eliminated in the group treated with (M), as compared with (NS). p < 0.05.

To conclude, the (M) treatment is apparently beneficial in reducing the size of the experimental myocardial infarction.

KEY WORDS magnesium sulfate: coronary vessels, myocardial infarction: electrocardiography