Introduction: Ischemia-reperfusion (IR) contributes to the development acute renal failure. Oxygen free radicals are involved in the pathophysiology of IR injury (IRI). This study was designed to investigate the effects of 5-aminosalicylic acid (5-ASA), which is known antioxidant agent, in IR-induced renal injury in rats.

Materials and Methods: Male Wistar albino rats were unilaterally nephrectomized and subjected to 45 min of renal pedicle occlusion followed by 24 h of reperfusion. 5-ASA (300 mg/kg, i.p) was administered prior to ischemia. After 24 h reperfusion, urine and blood samples were collected for the determination of creatinine (Cr) and nitric oxide (NO) levels.

Results: Treatment with 5-ASA significantly decreased serum Cr and NO levels, also significantly increased urinary Cr level.

Conclusion: Treatment with 5-ASA had a beneficial effect on renal IRI. These results may indicate that 5-ASA exerts nephroprotective effects in renal IRI.

KEY WORDS: 5-aminosalicylic acid, creatinine, nitric oxide, renal ischemia-reperfusion

Table 1:
Effect of 5-aminosalicylic acid on creatinine levels

<table>
<thead>
<tr>
<th></th>
<th>IR group</th>
<th>5-ASA + IR group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum creatinine (mg/dl)</td>
<td>0.81±0.35</td>
<td>0.47±0.20&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Urinary creatinine</td>
<td>0.84±0.18</td>
<td>3.33±0.63&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
The effect of 5-aminosalicylic acid on renal ischemia-reperfusion injury in rats

Table 2: Effect of 5-aminosalicylic acid on nitric oxide levels

<table>
<thead>
<tr>
<th></th>
<th>IR group</th>
<th>5-ASA + IR group</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNO (μM)</td>
<td>2.16±0.17</td>
<td>1.66±0.09a</td>
</tr>
<tr>
<td>UNO (μM)</td>
<td>0.44±0.16</td>
<td>0.63±0.32</td>
</tr>
</tbody>
</table>

SNO=Serum nitric oxide, UNO=Urinary nitric oxide, 5-ASA=5-aminosalicylic acid, IR=Ischemia-reperfusion

References:
#1728 - The effect of 5-aminosalicylic acid on renal ischemia-reperfusion injury in rats


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