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TITLE OF ABSTRACT Effects of cyclosporin A, whole-body radiation and cyclophosphamide on intestinal reperfusion injury

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**EFFECTS OF CICLOSPORIN A, WHOLE BODY RADIATION AND CICLOPHOSPHAMIDE ON INTESTINAL REPERFUSION INJURY**

A lot of evidence is now available about the role of free radicals in the genesis of reperfusion injury. Suspecting that immune system is involved in the latest phases of this pathogenesis (after membrane damage due to lipidic peroxidation), we have tested the ability of immunosuppression to diminish the reperfusion damage in the gut.

**MATERIAL AND METHODS.** Ischemia was performed in female Sprague-Dawley rats (200 gr) by clamping superior mesenteric artery for 120 min. Six groups of 25 animals have been considered: (I) Control, (II) cyclophosphamide (Cy: 200 mg/kg i.p.), (III) cyclosporin A (CsA, 20 mg/kg i.p.), (IV) whole body radiation (WBR, 5 Gy), (V) allopurinol (Allo: 50 mg/kg, oral) and (VI) CsA+Allo (same doses). Mortality rate and mean survival period (MSP) have been evaluated in 20 rats of each group. Preservation index (PI) and percentage of affected intestine (PAI) have been established 30 min after reperfusion.

**RESULTS.** Mortality rate: (I) 75%, (II) 100%, (III) 35%, (IV) 40%, (V) 35%, (VI) 30%. Mean Survival Period: (I) 11.86 h., (II) 7.11 h., (III) 17.92 h., (IV) 23.75 h., (V) 13.71 h., (VI) 16.83 h. Preservation Index: (I) 3.92, (II) 2.82, (III) 5.10, (IV) 4.18, (V) 4.82, (VI) 5.50. Percentage of affected intestine: (I) 44.4%, (II) 69%, (III) 41.1%, (IV) 42%, (V) 35.2%, (VI) 35.4%.

CsA, WBR, Allo and CsA+Allo significantly decreased MR ( $p < 0.05$ ). CsA, WBR and CsA+Allo increased MSP ( $p < 0.05$ ) while Allo alone did not. CsA, Allo and CsA+Allo showed a better PI than Control ( $p < 0.05$ ). About the last parameter studied, only Allo (alone or with CsA) decreased the PAI ( $p < 0.01$ ).

**CONCLUSIONS:** CsA and WBR diminish reperfusion injury in the gut, but the differences showed with Allo in some of the parameters considered suggest a different mechanism of action, in which immune system could participate. On the other side, Cy has showed no good effect.

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01

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- 06 CS
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- 12 SH
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