ASSOCIATION OF PANCREATIC ISLETS IN HEPATOCELLULAR TRANSPLANTATION

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In previous works we have demonstrated that hepatocytes inoculated in the spleen react to normal regenerative stimuli: partial hepatectomy, cyclosprine A and so on. Other authors have proposed the association of pancreatic islets in the hepatocellular transplantation in order to avoid the exclusion of the spleen from pancreatic venous drainage. The effect of this association over the regenerative response of hepatocytes inoculated in the spleen has been studied.

Methods: in syngeneic WAG rats 20 million hepatocytes and 200-300 pancreatic islets have been inoculated in the spleen. The hepatocytes isolation has been performed according to the Seglen's method, and the pancreatic islets were obtained by collagenase digestion. Eight groups of ten animals receiving hepatocytes or hepatocytes plus islets were subjected to different regenerative stimuli: non, partial hepatectomy, cyclosporine A, and hepatectomy plus cyclosporine. Hepatic regeneration was studied in the spleen and in the liver, 24 hours after the inoculation, with cytophotometric methods.

Results: the inoculation produce a certain rate of hepatic regeneration. There is no significative differences in the different series if we compare animals receiving or not pancreatic islets with the hepatocytes. If we focus in the hepatocytes placed in the spleen, the percentage of regenerating cells shows no significant differences between the different regenerative stimuli.

	Control	Islets	Hep.70	Hep+Isl.	CsA	CsA+Isl.	Hep+ CsA	Hep+CsA+Isl.
Liver	9,5	5,0	41,7	43,0	24,3	18,9	52,2	57,2
Spleen	8,4	6,3	27,8	31,7	34,4	34,7	37,0	34,7

Conclusions: The association of pancreatic islets does not improve the regenerative response of hepatocytes inoculated into spleen.

PHARMACOLOGIC PROTECTIVE EFFECT IN PREPARATION SMALL BOWELL FOR TRANSPLANTATION

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INTRODUCTION.

Bacterial translocation (BT) is the name given to the passage of bacteria from the intestinal light to other organs (lung, mesenteric lymphatic ganglion, liver, spleen, etc.) without continuity solution in the intestinal wall. At present, the neutrophils and macrophages are implicated in the genesis of BT secondary to ischemia-reperfusion syndrome (SIR); they transport bacteria across the intestinal barrier and liberate them in the circulatory stream, lymphatic or peritoneal cavity, producing multi-organ failure.

MATERIAL AND METHODS.

In this study 10 micromodels of the Wistar breed weighing 280 g. each were used. Under anesthesia with ketamine chlorhydrate (Ketolar®) 5 mg/100 g IP, the micromodels were subjected to 120 min. of intestinal ischemia by clamping the superior mesenteric artery.

Five experimental groups were formed: (G-I) non-treated, lacking ischemia. (G-II) Ischemia of 120 min. plus isotonic solution 1 ml. (G-III) Subcutaneous naloxone 100 πg/kg 20 min. before ischemia. (G-IV) Subc. naloxone 100 πg/kg during ischemia. (G-V) Subcut. naloxone 100 πg/kg 20 min. pre-ischemia and 10 min. following revascularization.

Thirty samples from liver, mesenteric lymphatic ganglion and spleen were taken in aseptic medium. These were cultivated at 37°C, in aerobic atmosphere in Agar-blood and MacConkey media for 48 h. Bacterial train identification and reading were performed using the computerized "PASCO" method for Gram + and Gram - germs.

RESULTS.

No bacterial growth was observed in G-I. G-II showed the presence of *Str. viridans, Staph. simulans, Enterococcus fecalis, Klebsiella oxytoca* and *Escherichia coli*. In G-III bacterial growth (Gram +) was found at liver and mesenteric ganglion level (*Str. viridans* and *Str. pneumonie*), but the culture was negative at spleen level. In G-IV, *Str. pneumoniae* was found at liver level, while spleen and mesenteric ganglion were free from bacterial growth. In the last group, (G-V), the bacterial culture was negative at the liver, mesenteric ganglion and spleen level.

DISCUSSION.

In this experimental study we have demonstrated the protecting effect of naloxone administered pre-ischemia and post-reperfusion. It inhibited bacterial translocation secondary to ischemia-revascularization syndrome (IRS) of the small intestine. Its possible therapeutic applications have also been shown.

Level of aggresion, bacterial translocation and mortality.

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Objetive of the course:

We want to know bacterial translocation (BT) and mortalitiy levels (M), forty eight hours after an aggresion with zymosan (Z).

Material and methods:

A hundred mice OF-1 were used (with four weeks of age, weighing 30 g, and standard chow and water ad libitum) in five groups (Table 1). Each group has two subgroups with ten animals (for bacterial translocation o mortality study).

The subgroup BT animals, were anesthetized with ketamine (0.1 ml intraperitoneal) and laparotomized, under aseptic technique, forty eight hours after an aggresion with zymosan. Peritoneal fluid, mesenteric lymph nodes, liver, spleen, lung, bowell and blood were harvested for culture using a esteril technique. Identification of especific organism was perfomed using standard micobiological techniques.

To evalute the mortality, the animals of subgroup M, were obseved every eight hours.

Results: (table 1)

Group	Z(mg/g)	#	%TB	%M
1	0	20	0	0
2	0.002	20	40	0
3	0.2	20	100	0
4	0.5	20	100	40
5	1.0	20	100	80

Conclusion:

There are lethal and non lethal dosis of zymosan, both of them induce BT.

NEW WAYS TO SYNTHESIZED BIOCERAMIC α-Al_2O_3

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High density alumina α-Al_2O_3 was the first bioceramic widely used clinically. Profit by its high bioinert character has been used as a component of great number of dental and orthopaedic applications, because of the combination of excellent corrosion resistance, high wear resistance and high strengh.

Physical properties for alumina implants are regularized by the ISO. Strengh, fatigue resistance, and fracture toughness of polycrystalline α-Al_2O_3 are a function of grain size and percentage of sintering aid which depend of the alumina synthesis method. So we have proposed an alternative way to prepare α-alumina and we have compared with a traditional one.

Al_2O_3 fine particles were synthesized by pyrolysis of an aerosol generated by ultrahigh frequency spraying of different aqueous solutions: $AlCl_3 \cdot 6H_2O$, $Al_2(SO_4)_3 \cdot 18H_2O$ and $Al(NO_3)_3 \cdot 9H_2O$ according to the following experimental conditions: Furnace temperatures: 400 °C and 900 °C; frequency: 850 kHz; aerosol flow: 0.8 $ml.min^{-1}$ and carrier gas: pure air. Samples so obtained were annealed at high temperature (900 °C - 1200 °C) to obtain α-Al_2O_3. These results were compared with those obtained using a traditional method: the annealing of an oxohydroxide of aluminium, boehmita. Experimental conditions: 1250 °C for 33 hours. All samples were characterized by XRD, SEM, TGA and DTA.

Alumina (α-Al_2O_3) particles with size < 100 μm and with relatively high porosity were obtained for both methods. The characteristic of the material obtained by the spray pyrolysis method and the fact that with this procedure it is possible to control size and homogeneity of the grain and porosity of the product suggest that this method can be used to obtain alumina as a biomaterial.