Analysis of the plasma levels of neurotensin in the rat and their modification after different types of intestinal resection.

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Introduction:

We used three intestinal resection models (proximal ileum, distal ileum, colon) in Wistar rats to evaluate the experimental variations of the plasma levels of neurotensin, together with an evaluation of the alterations and adaptation seen in the remaining intestine, in three postoperative time periods (one, two and three weeks).

Material and methods:

86 female Wistar rats were used, all from the same genetic line, with weights of 250 - 400 gr. They were subdivided into 10 groups, one control, three proximal resection (for one, two and three week time periods), three distal resection (for the same time periods) and three colonic resection (also for the same time periods).

Plasma levels were determined in each group by radioimmunoassay.

The statistical analysis was carried out using the BMDP (Statistical Software) statistical program package.

Conclusions:

In view of the behaviour of this hormone after resection of any segment of intestine it may be concluded that the intestinal production of neurotensin in the rat is diffuse. Given the importance of the right colon in neurotensin production the experimental variations found in this model are very similar to results published in humans. The abrupt changes seen make us believe that the plasma concentrations are very low and that any type of intestinal resection performed will cause significant changes in these concentrations.

The response of Gastrin in different types of intestinal resection. A study in the rat.

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Introduction:

We used three models of intestinal resection in the rat as the experimental animal to determine the variations in the plasma levels of gastrin in each type of resection, and also the changes with time after the resection (one, two and three weeks).

Material and methods:

86 female Wistar rats were used. They were subjected to resection of the proximal 50% of the small bowel, the distal 50% or colonic resection. Each group was further subdivided into three groups for determination of the plasma levels at the desired time intervals (one, two and three weeks). There was are control group.

Plasma levels were determined by radioimmunoassay.

The statistical evaluation was by the Kruskall-Wallis non-parametric variance analysis.

Conclusions:

Based on our results, we find that this neuropeptide shows significant rises in its plasma levels, compared with the control group, independent of the type of resection performed. The inhibitory effect of Somatostatin on Gastrin has been demonstrated and, as we found in our study, the levels of Somatostatin were minimal meaning that plasma levels of Gastrin could rise uninhibited.

In our study, all three types of intestinal resection were associated with rises in Gastrin plasma levels, in accordance with the results published by other authors and, as has already been shown, in accordance with the rise in gastrin levels found in the short intestine syndrome.

NEW DIAGNOSTIC TECHNIQUES IN NONPALPABLE BREAST LESIONS.

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INTRODUCTION. The new techniques of image make feasible the excision of nonpalpable and small tumors, wich are frecuently carcinoma in situ or minimal invasive carcinoma with negative axillary nodes. We present a multicentric and prospective study of the new diagnostic and surgical techniques in breast lesions.
MATERIAL AND METHODS. Eighty four patients with breast cancer and 186 patients with microcalcifications and nonpalpable mass were operated. We chose representative cases where we used Nuclear Magnetic Resonance (NMR), high definition ultrasonography (US), Doppler ultrasonography and mammographically guided needle localization for biopsy of nonpalpable lesions. This techniques are completed with high definition mammography and cytology with ultrasonographically guided fine needle aspiration.
RESULTS. 1. We diagnosed 50 carcinoma after placement of localization hookwire for biopsy of microcalcifications or nonpalpable lesions (26.8%). 2. High definition ultrasonography was useful to evaluate breast cancer with posterior shadow in US and for measuring the tumor size. 3. NMR and Doppler US were useful for the evaluation and follow-up of patients with conservative surgery.
CONCLUSIONS. Nowadays the available diagnostic methodologies to evaluate breast lesions make surgical techniques more conservatives, because we do earlier breast cancer diagnosis of bilateral syncronous or unilateral multicentric carcinoma.

VALORATION OF PRESERVATION AND REPERFUSION INJURY IN SMALL BOWEL GRAFTS.

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In order to asses the damage produced by anoxia during the hypothermic storage of intestine grafts, and the subsequent reperfusion injury, an "in vitro" reperfusion was meade. The rat small bowel were storage in Collins solution.

50 grafts were used, and distributed in 10 groups (n=5): 1) control group. 2-6) Preservation group (1 / 2 / 4 / 6 / 8 hours). 7-10) Reperfusion groups, composed by Ringer Lactate's alone and other Modified Reperfusion Solutions (M.R.S). During the 40 minutes reperfusion, gasometric, ionic and haemodynamics parameters were recolected. The graft damage was histologically assesed after the reperfusion. All the experiments were realised with a double link-dinble blind technique, and the results statistically analysed with the Student's T Test, Chi square test, and if significatives with the Neuman-Keuls test.

During the first two hours of preservation there is no ischemic damage. After 4 hours, membrane enclosed cytoplasmic blebs arise at the cell base from the basement membrane. After 6 hours the lamina propia desmegrates and sheds off toward the lumen. After 8 hours the most severe changes occur in the tip of the villi. In reperfused grafts with Ringer Lactate the interstitial oedema collapsed the portal drainage after 10-15 min. of reperfusion. In the grafts reperfused with M.R.S. the cellular metabolism was activated and the perfusion maintained 40 min. But a great histologic damage was observed, intraepithelial oedema, denuded villi, and exposure of lamina propia.

So, the preservation damage of small bowel grafts is amplified by the reperfusion injury, even if it has no cellular components.

ISCHEMIC AND REPERFUSION SYNDROME IN CARDIAC SURGERY. A STUDY OF FREE OXYGEN RADICALS

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The therapeutic cardiological manouevres necessary in cases of ischemia reperfusion have increased considerably: fibrinolysis, transluminal angioplasty, coronary revascularization surgery and cardiac transplant.

The appearance of a specific pathology in acute reperfusion has been related to Free Oxygen Radicals (RLO) generated by oxidative damage.

OBJECTIVES: To evaluate the appearance of RLO during a controlled process of ischemia-reperfusion in an experimental biological model and compare it with that in clinical cases.

MATERIALS AND METHODS: Transitory cardiac ischemia was performed in five rabbits by reversible surgical ligation of the Descending Anterior Coronary Artery. After 15 minutes coronary reperfusion was performed. Blood samples were taken in the basal situation, at the end of ischemia and at 5, 10 and 15 minutes after the start of reperfusion. Malondialdehyde (MDA) was measured to evaluate the degree of lipid peroxidation (oxidative damage to the membrane). In ten patients undergoing conventional cardiac surgery the production of RLO was measured after aortic clamping. We observed that after 5 minutes of reperfusion there was a highly significant increase ($p < 0.001$) in the MDA values (mean =2.00 μmols/L). These returned to basal levels after 10 and 15 minutes of reperfusion.

CONCLUSIONS: An "explosion" of oxygen free radicals was detected very quickly, just a few minutes after post-ischemia reperfusion. Thus, if antioxidant agents are to be used to reduce the toxic effects of the RLO, these will only have a therapeutic effect if they are administered in the early phases of reperfusion.