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Intestinal smooth muscle a-adrenoceptors are up-regulated during trinitrobenzene sulfonic acid-induced inflammation in the guinea-pig

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VII EUROPEAN CONGRESS OF DIGESTIVE ENDOSCOPY)

ATHENS, SEPTEMBER 25 – 30, 1992

ABSTRACTS

This book contains all abstracts submitted to the First United European Gastroenterology Week, within the deadline (February 29, 1992). Abstracts selected for presentation are marked with a dot (•).

The abstracts are listed alphabetically, according to the first author's name, and bear the same number as in the programme.

An alphabetic listing of authors is included in this volume. Next to each author's or co-author's name the reader will find the abstract serial number in the Abstract Book and the Programme. The second number, in parenthesis, next to the abstract serial number, represents the session number where the abstract is presented.

The members of the Scientific Committee of the First United European Gastroenterology Week express their thanks to the authors who contributed with their investigative work.

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PERCUTANEOUS TREATMENT OF HEPATIC HYDATID CYSTS

The percutaneous treatment of hepatic hydatid cysts is open to controversy, due to the risk of peritoneal dissemination and seeding of daughter cysts, or anaphylactic shock. On the other hand, the lack of relevant consequences to date allows indication of this type of surgery in a limited number of cases. We report two cases in which the cysts were sterilized percutaneously. The first patient was referred to us from another center, where incomplete treatment of the cyst had been performed. On admittance the patient presented a cyst cavity of mixed echogenicity prolonging to the subcutaneous tissue in the region of the earlier surgical sonde. The cavity was initially treated as a residual infection, until membranes were detected on draining. The cavity was then cleansed with hypertonic saline. The second patient exhibited recurrent disease identified due to progressive growth within the residual cavity. Punction was performed under echographic guidance and the cyst was treated through a catheter. Follow-up of the first patient after 2 years and of the second case after 6 months showed no signs of active disease. To conclude, open surgery is the treatment of choice in these cases. However, in patients with recurrent disease where surgical access is a problem, where adherences are suspected that limit outlet to the peritoneal cavity, or where associated pathology exists that increases surgical risk, the percutaneous treatment of hepatic hydatid cysts may be contemplated.

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INTESTINAL SMOOTH MUSCLE α-ADRENOCEPTORS ARE UP-REGULATED DURING TRINITROBENZENESULFONIC ACID-INDUCED INFLAMMATION IN THE GUINEA-PIG.

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Inflammatory bowel disease (IBD) is clinically characterized by gastro-intestinal disorders such as disturbed intestinal motility or diarrhea. Moreover, inflammation has been shown to suppress the release of norepinephrine from the myenteric plexus of experimentally inflamed rat intestine. As gastro-intestinal receptors, including adrenoceptors, play a major part in regulation of motility and are predominant targets for drugs, we tested the hypothesis that there could be an alteration of intestinal α_1 and α_2-adrenoceptor subtypes in connection with the inflammatory process.

The study was conducted in adult male guinea-pigs both in control conditions and after experimental intestinal inflammation induced by intraduodenal administration of trinitrobenzenesulfonic (TNB) acid (80 mg/kg) in 50% ethanol. Treated animals were sacrificed 3, 7 and 10 days after TNB injection. Inflammation-induced intestinal wall tissue alterations were evaluated histologically. α-Adrenoceptor density was measured (3 assays performed in duplicate) in pools of smooth muscle membrane fractions prepared from both jejunum and ileum. α_1- and α_2-adrenoceptor subtypes were respectively labelled by [^{3}H]prazosin (0.0125 to 2.0 nM) and [^{3}H]rauwolscine (0.25 to 15 nM).

Binding of either radioligand was a saturable, reversible and high affinity process ; dissociation constants were not significantly different ($P>0.05$) between the four groups (ranges $0.08<K_D<0.3$ nM for [^{3}H]prazosin and $2.3<K_D<6.7$ nM for [^{3}H]rauwolscine). Conversely, maximal binding capacity values (Bmax; receptor density) were significantly and gradually increased with time post-injection in each of the membrane fractions prepared from inflamed tissues compared to controls ($P<0.01$); an increase which was well correlated with the extent of intestinal tissue damage revealed on histological slices. α_1-Adrenoceptor densities varied significantly from (mean ± SD; fmol/mg of protein) 24.9±3.5 in controls to 45.7±5.5, 84.1±3.5 and 97.1±5.3 at 3, 7 and 10 day-postinjection respectively. Similarly α_2-adrenoceptor densities were 28.4±5.8 (controls), 40.3±7.8, 75.6±7.3 and 103.5±7.0 (at 3, 7 and 10 day-postinjection respectively).

The binding data obtained in the present study are compatible with the hypothesis that α-adrenoceptor up-regulation on intestinal smooth-muscle may contribute to IBD-induced functional motor disturbances.