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replication, during which they express high ornithine decarboxylase (ODC) activity and avidly take up polyamines, and a phase of differentiation characterized by the expression of enzymes typical of mature enterocytes, including diamine oxidase (DAO) and sucrase. Thus, we investigated the effect of C component on the rate of cell growth, assessed by both cell count and thymidine labeling index (TLI), on ODC activity, on putrescine uptake (PU) and cellular differentiation by the assays of DAO and sucrase activities. Cells were routinely grown in DMEM + 10% FCS. For all experiments, C component was used at 10 nM concentration, chosen on the basis of a preliminary dose-response curve. C component stimulated Caco-2 cells to grow: cell counts increased by 75% at day 3 of treatment. Furthermore, 6 to 12 h after the addition of 10 nM C component to the culture medium, pre-confluent cells showed a 50-70% increase in the number of cells in S phase, along with an increased ODC activity and putrescine uptake. In differentiated cells, a long-term treatment induced an increase of DAO and sucrase activities. These biological effects are quite similar to those observed in the same cells with epidermal growth factor. Our data indicate that C component shares several biological properties with peptide growth factors. Hence, trophic factors present in edible plants may have a role in the maintenance of intestinal cell replication and differentiation.

● **CIGARETTE SMOKING: NO INFLUENCE ON THE EFFICACY OF OMEPRAZOLE/AMOXYCILLIN COMBINED THERAPY FOR ERADICATION OF HELICOBACTER PYLORI (HP)**

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Combined therapy omeprazole/amoxicillin (OME/AMOX), in different doses, is effective in the eradication of HP. The published HP cure rates obtained vary widely; some authors, however, refer negative influence of smoking on HP eradication, using such therapy, in patients with HP positive diseases of the gastroduodenum (1-3). Aim of the study was to evaluate the efficacy of combined OME/AMOX therapy in HP eradication in smokers (at least 10 cigarettes/day) and non-smokers. We studied 174 patients with HP-associated gastritis. Among them 71 were smokers (52 males, 19 females; average age 45) and 103 were non-smokers (54 males, 49 females; average age 46). Patients underwent endoscopy, histology (H&E, Giemsa) and urease test at the beginning of the study and 4-6 weeks after the end of therapy. The eradication therapy consisted in OME 40 mg o.m. + AMOX 1 gr b.i.d. for 15 days. Treatment was considered successful when HP was not detected by histology or urease test. Statistical evaluation of data was carried out by chi-square test. Eradication was obtained in 36/71 (50.7%) smokers and in 56/103 (54.3%) non-smokers (p=ns).

Conclusions: smoking does not seem to have negative influence on the efficacy of combined OME/AMOX therapy in HP eradication.

1. II UEGW, Barcelona 1993, 100A.
2. DDW, New Orleans 1994, 555A.
3. DDW, New Orleans 1994, 626A.

● **EFFICACY AND TOLERABILITY OF COMBINED OMEPRAZOLE/AMOXYCILLIN THERAPY FOR ERADICATION OF HELICOBACTER PYLORI (HP)**

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It is well known that the association of omeprazole (OME) and amoxicillin (AMOX) has efficacy on HP eradication. It is not yet well established, however, which is the optimal dose of the two medications; moreover, the published HP cure rates obtained vary widely. We studied the efficacy, tolerability and patient compliance of a combined therapy OME 40 mg o.m. and AMOX 1 gr b.i.d. for 15 days. We studied 177 patients (107 males, 70 females; average age 47, range 22-77) with HP-associated gastritis. Patients underwent endoscopy, histology (H&E, Giemsa) and urease test at the beginning of the study and 4-6 weeks after the end of the treatment. The therapy was considered successful when HP was not detected by histology or urease test. Three patients were forced to stop the treatment for side effects (2 diarrhea, 1 allergic exanthema). Among the remaining 174 patients HP was eradicated in 92 cases (52.8%). As far as compliance is concerned, those 174 patients who completed treatment took over 90% of the prescribed medications. Conclusions: the combined therapy OME/AMOX has efficacy in HP eradication. Side effects are poor, and patient compliance is excellent. Eradication rate obtained is lower than those reported by others; this is probably due to the fact that we used a lower dose of OME compared to other groups (1,2).

1. Europ J Gastroenterol & Hepatol 1992; 4: 697-702.
2. II UEGW, Barcelona 1993, 100A.

● **EFFECT OF FK506 ON INTESTINAL MOTILITY IN THE PIG: COMPARISON WITH THE MOTILIN AGONIST ERYTHROMYCIN**

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Macrolides such as erythromycin have well-known stimulatory effects on gastrointestinal motility through activation of motilin receptors and are used as prokinetic agents. FK506 is a novel macrolide with immunosuppressant properties, which is currently under investigation for immunosuppression following organ transplantation. The aim of this study was to investigate its effects on intestinal motility in comparison with those of erythromycin in the pig, a species often used as an experimental model in organ transplantation. Four pigs (25-30 kg body weight) were chronically fitted with 8 bipolar electrodes and 3 strain-gauge force transducers along the duodenum and jejunum. Intestinal electrical and mechanical activities were monitored in fasting, conscious animals in control experiments (2-h i.v. infusion of 154 mM NaCl at 6 ml/h) and during i.v. infusion of FK506 (0.075 and 0.15 mg/kg/h for 2 h) or erythromycin (0.75, 1.5 and 3 mg/kg/h for 2 h). These doses were chosen since they are in the therapeutic range. Intravenous infusions were always started immediately after the end of an activity front at the most distal electrode. Results: In control experiments, intestinal motility was characterized by

the cyclical appearance of the migrating motor complex (MMC): MMC cycle period (interval between consecutive activity fronts) was  $68 \pm 4$  min. In a few control experiments, during phase II, a rapidly migrating spike burst was sporadically ( $3.1 \pm 0.9$  in 2 hours) observed. Their velocity of propagation was  $6.33 \pm 0.85$  cm/s. Infusion of FK506 or erythromycin did not modify the time of appearance of the next activity front at any of the doses tested. However, at all doses, both FK506 and erythromycin increased spike activity during phase II. Furthermore, during the 2-h infusion period of FK506 or erythromycin, the incidence of rapidly migrating spike bursts significantly increased: the number of these events was  $6.1 \pm 2.5$  and  $19.5 \pm 6.1$ , during the 2-h infusion period of FK506 ( $0.15$  mg/kg/h) and erythromycin ( $0.75$  mg/kg/h), respectively. The velocity of propagation of these events was  $6.41 \pm 1.44$  cm/s and  $6.58 \pm 0.97$  cm/s for FK506- and erythromycin-induced events, respectively. The rapidly migrating spike bursts were usually associated with propagated mechanical events. Conclusions: 1) In pigs, both FK506 and erythromycin have a stimulatory effect on intestinal motility; 2) the pattern of intestinal motor stimulation induced by erythromycin in pigs differs from that observed in dogs and in humans [where a premature activity front is induced (1, 2)], but, as in dogs, is consistent with the motor pattern induced by motilin (3).

1. Am J Physiol 1984; 247: G688-G694.
2. Dig Dis Sci 1986; 31: 157-161.
3. Gastroenterology 1982; 82: 1395-1402.

● PORTAL CIRCULATION AFTER TRANSJUGULAR INTRAHEPATIC PORTOSYSTEMIC SHUNT (TIPS) ASSESSED BY ECHODOPPLER: A STUDY IN 22 PATIENTS.

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TIPS is a radiological method for treating upper gastrointestinal (GI) bleeding in cirrhotic patients. Stent placement determines a rearrangement of portal circulation. This study observes modifications in portal circulation after stent placement. Materials and methods: We examined 22 patients (14 males, 8 females), with mean age  $60.18 \pm 8.97$  years (range 39-73). All patients had previous bleeding from esophageal varices. A doppler examination was performed as soon as possible after bleeding and repeated at 48 hours, 7 days, 1 and 3 months after TIPS and then every 3 months. The diameter (mm) and the mean velocity (VMean) (cm/s) of blood flow were measured in the portal (PV), splenic (SV), superior mesenteric veins (SMV) and stent. The average follow-up was 221.7 days (range 10-529). Results: The basal mean diameter of PV, SV and SMV was  $13.7 \pm 2.1$ ,  $11.6 \pm 2.5$  and  $10.8 \pm 1.5$ , respectively. All vessel diameters decreased immediately and remained below basal values in undilated patients, while they approached basal values in the other patients already within a month after the shunt. The stent mean diameter was  $6.6 \pm 0.97$  48 hours after placement. In undilated patients the diameter increased to  $8.5 \pm 0.7$  12 months after TIPS; in the others it remained practically unchanged. The basal mean velocity of PV, SV and

SMV was  $38.1\%$  one week after shunt. The Vmean returned to basal values by the first week in patients needing dilatation, remaining at high levels in the others. The Vmean in the stent was  $95.9 \pm 21.5$  cm/s 48 hours after shunt. The maximum mean velocity was reached 1 month after TIPS ( $111.9 \pm 34.4$ ). Conclusions: TIPS procedure causes a reduction in diameter and a major increase in blood flow velocity in splanchnic vessels. The velocity in the stent is very high and the flow shows a high turbulence. The flowmetry of stent and splanchnic vessels may help to know the patients whose stent is functioning from those who need dilatation or replacement.

● COMPARISON OF TWO DIFFERENT THERAPEUTIC REGIMENS IN THE ERADICATION OF HELICOBACTER PYLORI (HP) POSITIVE DUODENAL ULCER (DU) PATIENTS

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Many drugs have been shown to be effective in HP eradication. At present, the most useful therapeutic regimens are: Omeprazole (O) + Amoxicillin (A) + Metronidazole (M), and Omeprazole + Clarithromycin (C). The aim of the study was to compare the effectiveness of these two therapeutic treatments in active DU associated to HP infection. Patients and Methods: 109 patients (mean age: 46,6 yrs M/F ratio=2:1) with active DU, and histological evidence of HP infection, were assigned to two different treatments: the first group assumed O 40 mg/die for 8 weeks, A 1 gr b.i.d. for 1 week and M 250 mg t.i.d. for 3 days; the second group assumed O 40 mg/die for 8 weeks and C 500 mg b.i.d. for 1 week. After 8 weeks all the patients underwent endoscopy with antral biopsy for the evaluation of ulcer healing and HP eradication. During treatment all the patients were checked for the appearance of side-effects. Statistical analysis was made by Kuskal-Wallis test. Results: 67/109 pts HP positive with D.U. assumed O + A + M, 42/109 were given O + C. After 8 weeks all the pts (100%) had complete ulcer healing; in the first group, 49/67 (73%) were HP eradicated; whereas in the second one the eradication was obtained in 36/42 (86%). Eight out of forty-two pts, treated with C, referred nausea and/or vomiting during drug administration. As regards the HP eradication no statistical significant difference was found between the two therapeutic regimens. Conclusions: 1) This study demonstrates that the two therapeutic regimens show the same effectiveness in HP eradication; 2) 19% of the patients treated with clarithromycin had significant side-effects. We emphasize that Clarithromycin treatment is ten times more expensive than treatment with Amoxicillin and Metronidazole (lit. 121.000 versus lit. 12.500 for a week of treatment).

● ULTRASONOGRAPHY (US) IS SUPERIOR TO ORAL CHOLECYSTOGRAPHY (OCG) IN THE CLINICAL ASSESSMENT OF GALLBLADDER MOTOR FUNCTION

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