SEASONAL VARIATIONS IN ADMISSION FOR ACUTE VARICAL HAEMORRHAGE AND RESPIRATORY TRACT INFECTION SUGGEST COUGHING MAY PRECIPITATE VARICAL HAEMORRHAGE. +G Pellegrini, +S Tedman, +SA Jenkins, +B Shields  
Departments of +Surgery and +Public Health, University of Liverpool and ++ Regional Information Unit, Mersey Regional Health Authority.

Intravascular pressure increases after a Valsalva manoeuvre, an effect that may also occur after coughing. To determine whether coughing may precipitate acute varical haemorrhage, we have compared the seasonal variation in emergency admissions for bleeding oesophageal varices with that for respiratory tract infection.

Monthly figures for emergency admissions relating to acute varical haemorrhage, all other acute gastrointestinal haemorrhages (ICD 578), all other respiratory tract infections (ICD 465.9, 481-488, 519.8, 519.9) and all other emergency admissions were compiled for the Royal Liverpool University Hospital from 1982 to 1992 to include the varices. Data relating to varices admissions were obtained from a prospective-varices-database compiled between 1980 and 1992, whereas all other data were obtained from the Regional Information Unit. Admissions for winter quarters (Oct-Mar) were compared to those for summer quarters (Apr-Sep).

Total admissions for all emergencies (winter vs summer: 78,253 vs 76,321) and all non-varical haemorrhage (687 vs 649) showed no significant seasonality, whereas admissions for acute varical haemorrhage (118 vs 79; Chi square 6.4, 1 df, p<0.02) and respiratory tract infection (2,341 vs 1,630; Chi square 112.7, 1 df, p<0.001) showed similar predominance in winter months.

These results demonstrate a similar seasonality for admissions for acute varical haemorrhage and respiratory tract infection, and implicate coughing as a factor that may precipitate acute varical haemorrhage.


Endoscopic varical sclerotherapy (EVS) is a useful treatment in the secondary prevention of varical bleeding. However, there is a high risk of rel bleeding with EVS. The aim of the study was to assess whether nadoil could improve the results of EVS.

METHODS: A year period, 58 patients with their first hemorrhog from esophageal varices were randomised after the control of bleeding with emergency EVS, to receive long-term EVS either alone (n = 18) or plus nadoil (n = 22). Admission criteria to the trial were: age between 18 and 75 years, liver cirrhosis, Pugh's class A or B and the absence of hepatocarcinoma, portal thrombosis, severe associated diseases or contraindication for beta blockers. EVS was performed by intravascular injection of 8 ml etanolamine at days 0, 4, 10, 30 and then monthly until eradication of varices. Most of the patients were treated with adrenocorticosteroids. The whole follow-up in a dose to reduce rebleeding rate by 25% (mean final dose: 79±34 mg/d).  

RESULTS: Both groups were well-matched for clinical and biological data. Follow-up was similar in both (10+ months in EVS group vs 13±6 in EVS plus nadoil). There were no differences between the two groups when considering rebleeding (39% in EVS alone vs 55%), major rel bleeding (27% vs 24%), transfusional requirements (mean by rel bleeding: 4.6±3 vs 4.7±1), utilisation of treatments of EVS to varical eradication (3.5±1 vs 3.4±1.4) or mortality (2 patients in each group).  

CONCLUSIONS: In patients undergoing long-term EVS for prevention of varical rel bleeding, nadoil confers no additional benefit.

TIPS is a radiological method for creating upper gastrointestinal (GI) bleeding in cirrhotic patients. TIPS has been shown to decrease the portosystemic gradient by about 40%. Nothing is known of the effect of TIPS on haemodynamic parameters.

MATERIALS AND METHODS: We examined 4 patients (1 male and 3 females), mean age 65.7 years (range 58-72). These underwent an urgent EBDH after an upper GI bleeding which revealed the site of bleeding in the esophageal varices. A Wallastent Stent was placed in each patient. A doppler examination was performed as soon as possible after bleeding and repeated at 48 hours and 7 days after TIPS. The maximum (Vmax) and average (Vmean) velocity of blood flow in the portal (PV), splenic (SV), superior mesenteric veins (SMV) and stent were measured. The longitudinal diameter of the right lobe of the liver and spleen was also measured. Results: the mean±SD Vmax values, after 7 days, increased by 22.8% and 34% in the PV and SV, respectively. Simultaneously, the longitudinal diameter of the right lobe of the liver and spleen decreased 9.6% and 5.8%, respectively. In 3 cases, after 48 hours, a thrombosis of the left branch of the portal vein appeared. Conclusions: TIPS procedure causes a major increase in blood flow velocity in portal vessels. Blood mean velocity in the stent is similar to that in the arteries and Doppler spectrum profile is broad. TIPS causes a reduction in the liver and spleen diameters and a thrombosis of the intrahepatic portal branch was observed in most cases.

EXAMINATION OF ECHODOPPLER AFTER TRANSJUGULAR CAPOCACCIA, MATERIALS AND patients. (GI) the in each placed 72). measured. The flow in the table values, Vmax 34% in right mean increase vasocostriction in acute effect been studied Doppler technique. after Maximum <60' was study five Vmean (coefficient Doppler angle used (arbik-Ur.d P.1.) 1.46±0.28 24.0±8.6 18.5±5.6 Istftuto Gastroenterologia (Gastroenterology 48 hours revealed the the liver and spleen (Gastroenterology 1992:103:1868-1874). Previous controlled studies have shown a good sensitivity of Echo-Doppler technique in detecting acute hemodynamic changes in splanchic circulation due to vasoactive drugs. This study was designed to assess the acute hemodynamic effect of Octreotide on the arterial vascular bed in cirrhotic patients by Echo-Doppler technique.

PATIENTS AND METHODS: Fifteen cirrhotic patients, 10 males and 5 females, mean age 63±5 yrs, Child-Turcotte class A n.2, B n.10 and C n.3, have been studied by an ATL UMS duplex system after an overnight fast and 30 min after the administration of a single dose of Octreotide (100 mcg, s.c.). The right interlobar arteries have been studied at the renal fum with an angle of insolation of 60°. In the study design, Maximum blood flow velocity was measured from the maximum frequency shift, and mean velocity (Vmean) was calculated by the formula Vmean=0.57XVmax. The pulsatility index (Pl), which is independent from Doppler angle of insolation and correlates with vascular peripheral resistance, was calculated by the formula: P.I.=Vmax-Vm/n/Vmean. In this operator blind study, five measurements were averaged at baseline and at 30 min' after Octreotide (coefficient of variation for Vmean 9%, for P.I. 9%).

RESULTS: Values are reported as Mean±SD. A paired Student’s t-test was used for comparisons between baseline and 30 min after Octreotide values.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean (±SD)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>20±5</td>
<td>18±6</td>
</tr>
</tbody>
</table>

CONCLUSIONS: These data indicate the capability of Echo-Doppler for non-invasively depicting hemodynamic changes actually induced by vasoactive drugs in renal vascular bed. The reduction of Vmean and the increase in P.I. suggest that Octreotide reduces renal vasoconstrictions in cirrhotic patients. Further studies are needed to assess the clinical meaning of this finding.

HYPOTENSION AND REPERFUSION IN PORTAL HYPERTENSION: EFFECTS OF SOMATOSTATIN, OCTREOTIDE AND VASORELAXANTS, J. Yates, D.M. Noti, H. Kyprianou, N. Davies, L. Jinai, D. Billington, R. Shields & S.A. Jenkins, Department of Surgery, Royal Liverpool University Hospital, Liverpool, U.K.

The majority of patients receiving vasoactive drugs to control varical bleeding are hypovolemic and in the process of being resuscitated during therapy. However, since there is a paucity of data on the effects of vasoactives on portal haemodynamics during hypovolaemia and reperfusion we have undertaken such a study in portal hypertensive rats.

Hypovolaemic, portal hypertensive rats (partial portal vein ligation) received infusions of somatostatin (0.4µg/kg/h) octreotide (0.4µg/kg/h) vasopressin (0.08µg/kg/h) or saline. Reperfusion was commenced 15 min after the start of drug administration. Portal pressure and arterial blood pressure were measured continuously and collateral blood flow (consecutive inotropic administration of 7-Omethyl diphosphonate and 7-O-albumin microspheres) at 5 min intervals throughout the study. Portal pressure was decreased and collateral blood flow increased following haemorrhage (p < 0.001 ANOVA). Administration of vasopressin during hypovolaemia had no effect on portal pressure but collateral blood flow was increased. In contrast portal pressure increased during infusions of somatostatin and octreotide whereas collateral blood flow was decreased (p < 0.01). During reperfusion collateral blood flow was increased in all rats except those treated with octreotide (76.7±7.3 to 40.1±9.2% p < 0.01). The efficacy of vasoactive drugs is related to their ability to reduce blood flow through the collateral circulation including the varices. The results of this study suggest that of the three vasoactives studied, only octreotide is capable of reducing collateral blood flow during haemorrhage and resuscitation.


In liver cirrhosis, a decreased effective arterial central blood volume by peripheral arterial vasodilatation has been claimed to initiate sodium and water retention. However, plasma ANP is an index of central vascular fullness and has been often reported to be risen in decompensated cirrhotic patients in which arteriovenous and arteriovenous shunting may decrease the resistance to venous return in a similar manner to that observed in experimental arteriovenous fistula, where a neurohormonal pattern of arterial underfilling and venous side overflow is seen.

Aims: To study whether plasma ANP is related to systemic and peripheral hemodynamic changes, peripheral arteriovenous shunting and neurohormonal response in a group of cirrhotic patients.

Methods: 8 healthy subjects and 24 cirrhotic patients (group I: 7 without ascites, group II: 9 with ascites and NAEn=10±5mEq/24h and group III: 8 with ascites and NAEn=10±5mEq/24h) were studied. Cardiac output and femoral hemodynamics were measured by pulsed-wave duplex-Doppler and systemic and femoral vascular resistances were obtained by standard formulas. Blood volume, neurohormonal mediators and the femoral arteriovenous difference of oxygen content (Ca-Vo2) were also determined in all cases. Plasma ANP was determined by RIA with double antibody separation, without plasma pre-extraction.

Results: Cardiac output (CO), femoral blood flow (FBF) and blood volume (BV) were increased and systemic vascular resistance (SVR), femoral vascular resistance (FVR) and Ca-Vo2 were reduced in group III as compared with groups I and control. Plasma ANP was 34.7±55 pg/ml in group I and 44.295±4, 60±9±9 in groups I, II and III respectively (ANOVA; p<0.001. Group III vs. I and control). Plasma ANP directly correlated with CO (r=0.616; p<0.001), BV (r=0.535; p<0.001) and FBF (r=0.527; p<0.001) and inversely correlated with SVR (r=-0.455; p<0.02), FVR (-0.434; p<0.02) and Ca-Vo2 (r= -0.516; p<0.01).

Conclusions: Our data support that the arterial vascular tree is underfilled in cirrhotic patients. On the other hand, the blood volume at the venous vascular compartment is expanded probably by a decrease to venous return by arteriovenous vasodilatation and arteriovenous shunting.

This work was supported by grants: 90/0763 and 92/1071 from the Fondo de investigaciones sanitarias, Spain.