Results 529/1091 patients (58% male; 87% white; age 56.7 years (9.5); body mass index 31 kg/m^2 (4.7); HbA1c 8.4% (0.9); male alanine aminotransferase (ALT) 32.0 IU/L (17.9); female ALT 27.3 IU/L (14.9)) completed 2 years treatment. Of the subjects enrolled in the sub-study 75% had the metabolic syndrome (ATP III classification) and 65.7 % (90/137) had hepatic steatosis on CT at baseline.

Patients with elevated ALT levels (53%) at baseline (males >30, female >19 IU/L) had a significant reduction of ALT with liraglutide (−8.53 from baseline 40.9 IU/l, p<0.0001). This was a significant improvement vs glimepiride (p<0.05). 37% of patients normalised their ALT with liraglutide in comparison to 21% on glimepiride.

Liver-to-spleen attenuation ratio significantly increased with liraglutide (+0.10, p<0.05) indicating reduced hepatic steatosis. Reductions in trunk fat tissue mass, trunk lean tissue mass and % total body fat with liraglutide were significantly different vs increases with glimepiride (−3.0 kg, −1.3 kg, −2.05%, respectively; p<0.05). Greater improvements were seen in liver-to-spleen attenuation ratio (+0.05), trunk fat mass (−1.6 kg) and % total body fat (−0.63%) with liraglutide vs placebo.

Conclusion Two years treatment with liraglutide significantly improves liver enzymes and hepatic steatosis in patients with T2D and associated fatty liver disease. Significant improvements in % body fat, in particular central adiposity support the role of liraglutide in reducing hepatic steatosis and cardiovascular morbidity.

OP04 CIRCULATING LEVELS OF THE LONG PENTRAXIN PTX3, BUT NOT HEPATOCYTE DERIVED C-REACTIVE PROTEIN, CORRELATE WITH SEVERITY FOLLOWING HUMAN ACUTE LIVER INJURY

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Introduction The innate immune response may underpin the development of multiorgan failure following acute liver injury, particularly following paracetamol overdose (POD). Pentraxin 3 (PTX3) is a long pentraxin induced by interleukin (IL)-10, and produced by vascular endothelium, macrophages, and myeloid dendritic cells. PTX3 has diverse effector functions including opsonisation, clearance of apoptotic debris, and tissue repair.

Aim To measure levels of PTX3 and C-reactive protein (CRP), a hepatocyte derived short pentraxin involved in the acute phase response, in patients with acute liver injury.

Method Consecutive patients admitted to the Royal Infirmary of Edinburgh with acute liver injury (ALT>1000 IU/l and coagulopathy) were enrolled. PTX3 and CRP levels were measured by ELISA and turbimetry, respectively.

Results A total of 60 patients (48 POD, 12 non-POD) were enrolled. 28/48 (58.3%) of POD and 8/12 (66.7%) non-POD patients developed hepatic encephalopathy (HE), and therefore acute liver failure. As expected, admission PTX3 levels correlated strongly with IL-10 (Spearman's r=0.641, p<0.001), but also correlated with INR (r=0.728, p<0.001) and ALT (r=0.554, p<0.001), but not with CRP (r=-0.124, p=0.35). Admission PTX3 levels were significantly higher in POD patients with HE (median (interquartile range) 329.4 (77.7−738.1 ng/ml)) compared with POD patients without HE (46.1 (6.1−172.4) ng/ml, p=0.0005), or with non-POD patients (23.7 (9.1−40.0) ng/ml, p=0.004). PTX3 levels in POD patients who died or required emergency liver transplantation (LT) (772.9 (268.2−848.7) ng/ml) were significantly higher compared with spontaneous survivors (81.1 (12.0−437.1), p<0.0001), with an area under the receiver operator characteristic curve of 80.3 (95% CI 67.1 to 93.4). Admission PTX3 levels in POD patients correlated with admission APACHE II (r=0.398, p=0.006) and SOFA (r=0.536, p<0.001) scores, and were higher in POD patients who developed the systemic inflammatory response syndrome (SIRS 306.4 (113.9−764.7) ng/ml, no SIRS 50.5 (6.66−297.7) ng/ml, p=0.001). Conversely, admission CRP levels were significantly decreased in POD patients (6.05 (3.93−15.38) mg/l) compared with non-POD patients (17.6 (3.9−15.4) mg/l, p=0.011). There were no significant differences in CRP levels between POD patients who died/required LT (5.2 (4.3−15.9) mg/l) and survivors (7.9 (3.5−15.7) mg/l, p=0.820).

Conclusion These data suggest that the humoral arm of the innate immune system plays an important role in the pathogenesis of multiorgan failure following POD. PTX3 may have a role as a novel prognostic marker in this condition.

OP05 MEDIUM TERM OUTCOME OF DE NOVO AUTOIMMUNE HEPATITIS AFTER LIVER TRANSPLANTATION IN CHILDREN; A SINGLE CENTRE EXPERIENCE

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Introduction Post-transplant de novo autoimmune hepatitis (dn-AIH) is a cause of late graft dysfunction characterized by hypergammaglobulinemia, elevated titres of serum auto-antibodies, histological features of chronic hepatitis with portal and periportal inflammation with lymphocytes and plasma cells, and clinical response to the treatment for classical autoimmune liver disease with steroids and azathioprine (aza) or mycophenolate mofetil (MMF).

Aim To establish the prevalence and the medium term outcome of dn-AIH.

Method Retrospective review of case notes of patients who were diagnosed with dn-AIH since the initial case description in 1995 to date.

Results Thirty children (17, 57% female) were diagnosed using the above criteria. Overall incidence was around 5 %. The aetiologies leading to liver transplant (LT) were: biliary atresia (16), Alagille syndrome (3), alpha 1-antitrypsin deficiency (3), progressive familial intrahepatic cholestasis (2), glycogen storage disease type 1b (2), familial hypercholesterolemia (1), non-A-E hepatitis (1), Crigler-Najjar syndrome type 1 (1) and cryptogenic end-stage liver disease (1). Four (13.3%) patients received whole grafts, while the remainder received segmental grafts, including 2 (6.7%) auxiliary and 4 (13.3%) living-related grafts. The median age at diagnosis of dn-AIH was 11.2 years (range, 2.6−19.3). The median post-LT interval to develop dn-AIH was 4.1 years (range, 0.2−11.0). The median follow up after diagnosis of dn-AIH was 8.2 years (range, 0.3−14.8). Auto-antibodies detected included ANA (n=21), SMA (n=20), anti-mitochondrial antibody (n=4), anti-LKM (n=2) and anti-liver cytosol-1 (n=1). Immunosuppressive regimens at the time of dn-AIH diagnosis included: CyA/aza/pred (9), Tac/aza/pred (6), Tac/MMF/pred (6), CyA/MMF/pred (4), and Tac/pred (5). Dn-AIH was treated with increased dose of steroids and increased dose or addition of aza or MMF. Eleven (36.7%) patients did not adhere to medications during follow up. Of these, 10 (33.3%) developed chronic liver failure (CLF) and 6 (20%) required re-LT, after a median period of 5.8 years. Two (6.7%), including a non-adherent child, died with multiorgan failure after re-LT for CLF. Of 4 further children with CLF, 3 (10%), all with history of non-adherence, are currently listed for re-LT, while one (3.3%) is stable. Twenty patients (66.6%) have no evidence of graft dysfunction.

Conclusion The medium-term prognosis of dn-AIH is severe in a considerable proportion of patients and is determined by adherence to medications.