level spontaneously decreases by at least 10%. Waiting five days after admission before deciding to start steroids seems to be a reasonable strategy.

-A17-

SERUM GLYCOMICS AT ADMISSION PREDICT LIVER TRANSPLANT-FREE SURVIVAL IN PATIENTS WITH ACETAMINOPHEN-INDUCED ACUTE LIVER FAILURE. L. Grossar (1), N. Somers (2), E. Butaye (3), N. Debusschere (1), T. Vanwolleghem (4), G. Dahlqvist (5), J. Delwaide (6), J. Verbeek (7), L. Devisscher (1), S. Lefere (1), L. Meuris (3), N. Callewaert (3), S. Raevens (8), A. Geerts (8), H. Van Vlierberghe (8), X. Verhelst (8) / [1] Ghent University, Ghent, Belgium, Liver Research Centre Ghent, [2] Ghent University Hospital, Ghent, Belgium, Gent, Belgium, Internal Medicine and Paediatrics, [3] VIB, Gent, Belgium, Centre for Medical Biotechnology, VIB, Ghent, Belgium., [4] UZA, Universitair Ziekenhuis Antwerpen, Edegem, Belgium, Gastroenterology and Hepatology, [5] Cliniques universitaires Saint-Luc, Brussels, Belgium, Brussels, Belgium, Hepatogastroenterology and Liver Transplantation, [6] CHU Liege, Liège, Belgium, Gastroenterology and Hepatology, [7] University Hospitals Leuven (UZLeuven), Leuven, Belgium, Gastroenterology and Hepatology, [8] Ghent University Hospital, Ghent, Belgium, Gent, Belgium, Gastroenterology and Hepatology.

Introduction: Acute liver failure (ALF) is a rare but potentially life-threatening clinical syndrome characterized by hepatocellular damage and impaired liver function, manifesting as jaundice, coagulopathy and hepatic encephalopathy in subjects with no prior pre-existing disease. In those not responding to medical therapy, emergency liver transplantation (ELT) is required to avoid fatal outcome. The decision to list a subject for ELT is based on imperfect prediction rules with strong specificity, but limited sensitivity, thereby providing good ruling-in capacity but unacceptably poor ruling-out performance. A real clinical need exists for biomarkers with strong negative predictive value and fast turnaround-time in order to facilitate decision-making and avoid unnecessary ELT and/or referral to a transplant centre.
Aim: We aimed to assess differences in the total serum N-glycome at admission in subjects with ALF due to acetaminophen (APAP) overdose according to the outcome of emergency liver transplantation. Additionally, we aimed to derive a serum glycomics biomarker able to predict need for emergency liver transplantation.
Methods: We performed a prospective, multicentre study in five liver transplant centres in Belgium, between 2014 and 2024. All participating centres were referral centres for ELT. Decision to perform ELT was based on fulfilment of the King's College Criteria, in conjunction with judgment by the multidisciplinary transplant team. In 91 patients with APAP-related ALF, serum samples were collected within 24 hours of admission for analysis of the total serum N-glycome via DNA sequencing equipment-fluorophore assisted carbohydrate electrophoresis (DSA-FACE). Relative glycan abundancies underwent central log-ratio transformation, before comparison between outcome groups, allowing robust statistical comparison for compositional data. A glycan model to predict occurrence of liver transplantation was derived using elastic net regression, which is a penalized regression model that avoids model overfitting. The optimal cut-off for classification was determined by the Youden index.
Results: Seven out of 91 (7.7%) subjects underwent ELT, with two deaths occurring after liver transplantation. Another five (5.5%) died without undergoing prior ELT, either because an organ was not timely available, or because the procedure was deemed futile. We observed a significant increase of the agalacto, core-fucosylated glycan NGA2F and of the agalacto, core-fucosylated, bisecting glycan NGA2FB (independent samples t-test, p-values 0.0356 and 0.0239, respectively). After elastic net regression, a glycan score predictive of liver transplantation was derived, mainly characterized by a relative increase in undergalactosylation and fucosylation, and by a relative decrease in branched glycans. At the optimal cut-off of 0.0815, this biomarker predicted ELT with a sensitivity of 85.7%, specificity of 73.8%, and a negative predictive value of 98.4%. The area under the receiver operating curve was 0.833 (95% confidence interval: 0.711 – 0.955).
Conclusions: In subjects with APAP-related ALF, a distinct glycomic signature can be determined on serum samples at admission, reliably ruling-out subjects not requiring ELT. Application of this serum biomarker could prevent unnecessary liver transplantation and/or referral to tertiary care, and thus avoid significant morbidity and healthcare cost utilization.

-A18-

IMMUNE CHECKPOINT INHIBITOR-INDUCED LIVER INJURY: CORRELATION BETWEEN HISTOPATHOLOGICAL PATTERNS OF LIVER DAMAGE, TREATMENT REGIMENS, AND CLINICAL OUTCOMES. N. Brouwer (1), T. Delay (1), C. Jacobs (2), X. Verhelst (3), A. Geerts (3), H. Van Vlierberghe (4), S. Raevens (4), M. Saerens (5), A. Hoorens (6) / [1] Ghent University, Ghent, Belgium, Dept. of Diagnostic