Anaesthetic Challenges of Decompensated Cirrhosis & COVID in EMCS

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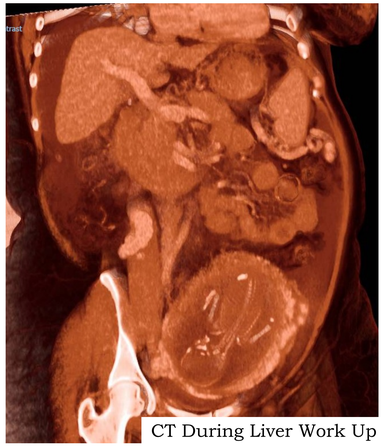
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Introduction

The combination of cirrhosis and pregnancy provides a haemostatic and haemodynamic challenge to the parturient during caesarean section (CS).[1] We describe the anaesthetic management of an emergency case of decompensating autoimmune hepatitis (AIH) for CS who was also COVID positive.



CT During Liver Work Up

Background

A 38-year-old multiparous woman, with end-stage AIH, was found to be pregnant at 20 weeks during liver transplantation workup. She elected to continue her pregnancy and delay transplantation, despite a quoted 80% risk of severe complications from liver disease and a 5% risk of mortality. She remained well antenatally, with regular antenatal MDT follow up. She was managed on Azathioprine, Prednisolone and Spironolactone and had her, routine for pregnancy, screening endoscopy at 27 weeks, which showed grade one oesophageal varices.

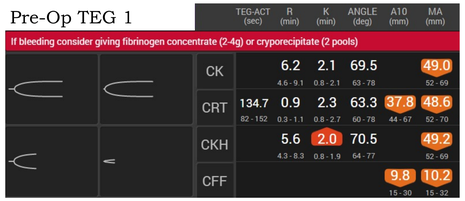
Case Management

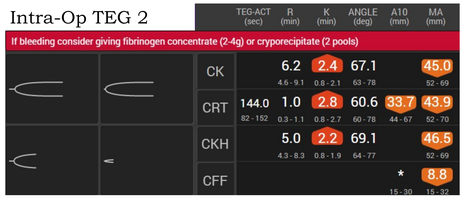
At 36 weeks she presented with worsening peripheral oedema and deteriorating liver function tests. She had a normal platelet count, raised prothrombin me and fibrinogen of 1.4 g/L with a reduced maximum amplitude on thromboelastography (TEG6). A suboptimal cardiotocograph precipitated an urgent CS.

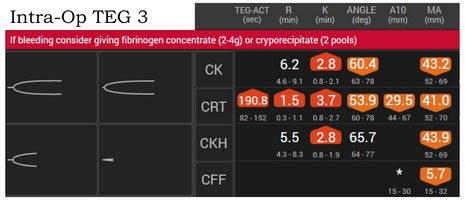
The patient had 1g of fibrinogen concentrate whilst an arterial line was sited and a spinal anaesthetic. She was tachycardic, with skin mottling, (suspicious of ensuing sepsis) and required a high dose phenylephrine infusion to maintain cardiovascular stability.

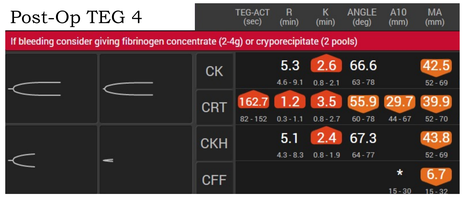
Tranexamic acid, a further 1g of fibrinogen (TEG 3: CFF still low) and 1000 IU of prothrombic complex (PCC) (TEG 3: MA still low) were given as guided by point of care testing. As 4L of ascites was drained rapidly pre-delivery, 1L of 5% albumin was given in addition to crystalloid.

The baby was born in good condition, there was no PPH, and an ascitic drain was placed. The COVID test came back positive.









Discussion

AIH generally improves during pregnancy, but 20% of patients experience a flare.[2] It is unclear whether the stress of the advancing pregnancy, an AIH flare or infection with COVID precipitated the decompensation in this patient. The evolving physiology was most in keeping with liver failure. In our institution, both obstetric and liver bleeding are managed with TEG6 guidance.

Whilst fibrinogen concentrate is well established in obstetric haemorrhage, PCC (although frequently used in liver disease) is less frequently used. In this case, the combination was chosen perioperatively for speed and ease of administration, and the potential volume sparing effect.

Our patient was not bleeding despite the borderline coagulopathy seen on TEG 4. Given a dry surgical field and the risk of two prothrombotic conditions of pregnancy and COVID,p in this case, it was felt that no further blood products were required at that time.

As with liver patients, albumin was used to prevent hypotension from rapid fluid shifts after ascites drainage just before delivery, and to limit progression to hepato-renal syndrome. Good communication and weekly obstetric review meant that clinical deterioration was recognised quickly, in time for a favourable feto-maternal outcome.

References

1. Westbrook RH, Yeoman AD, O'Grady JG et al. Model for end-stage liver disease score predicts outcome in cirrhotic patients during pregnancy. Clin Gastroenterol Hepatol. 2011
2. British Society of Gastroenterology. Pregnancy and Liver Disease. Accessed 8th February 2022 https://www.bsg.org.uk/web-education-articles-list/pregnancy-and-liver-disease/