ABO Incompatible Liver Transplant in a Patient with an Anaphylactic Reaction to Fresh Frozen Plasma

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History

- A 42 year male patient with alcohol related Chronic Liver Disease, presented to the emergency with bleeding varices –grade III with hepatic encephalopathy grade III.
- His Child-Turcotte-Pugh (CTP) score was 11 – grade C, (MELD)-20

Treatment option...

- Liver Transplant was the only life saving treatment modality.
- As he had no ABO matched donor he was offered ABOi LDLT (Patient was O positive and his son was B positive)

Strategy…

- As per our protocol we allow liver transplantation when the antibody titre ≤8.
- The patient's baseline IgG anti-B antibody titre was 1024 while his IgM was 512.

To reduce antibody titres....

- A single dose of Rituximab (375 mg).
- He was planned for DFPP 15 Days later. (Double filtration plasmapheresis)
- First two sessions albumin and normal saline(NS) were used as replacement fluid
- His IgG titres after the first and second cycles dropped down to 128 and 64 respectively.

- After two cycles of DFPP the patients INR increased from 1.63 to 3.65 and his fibrinogen level was 23.7mg/dl.
- In view of coagulopathy, a third cycle of conventional plasmapheresis was planned using FFP as replacement fluid

Anaphylactic reaction...

- During Conventional plasmapheresis, after the return of about 1/2 unit of FFP (100 ml), the patient started complaining of itching all over the body.
- His blood pressure (BP) dropped down to 60/30 and HR increased up to 145/min.
- The Patient started complaining of dizziness, light headedness and chest discomfort with difficulty in breathing.

Management

- The patient was managed with chlorpheniramine , Hydrocortisone , Normal saline , O_2 inhalation, nebulisation with Levosalbutamol.
- He was started on noradrenalin infusion.
- The patient's BP increased to 100/60 mmHg, his condition stabilized, but he had persistent tachycardia with a HR of around 130/min which stabilised over next 8-10 hours.

Dilemma ....

- The episode of anaphylaxis with FFP made the situation very complex because : FFP and plasma containing components are regularly used in transplant surgery and were also required because of coagulopathy.
- No other treatment option.

Trial with premedication...

- The premedication given was Hydrocortisone 100 mg i.v, chlorpheniramine10 mg i.v, and Ranitidine 50mg i.v , one hour before the FFP transfusion.
- 1 FFP were transfused in ICU uneventfully over 45 mins.
- 10 min after the transfusion was completed the patient started complaining of itching, his BP dropped to 100/70, HR increased to 130/min. He complained of mild chest discomfort and had mild facial oedema

- He was given 100 ml NS and O2 inhalation with nebulisation with Levosalbutamol /Ipratropium. Noradrenaline support was not required this time.
- The reaction episode was milder this time, but still it was there.

2nd trial with revised premedication...

- The premedication plan was reviewed and patient was started on longer acting steroid, Prednisolone 40 mg OD for 3 days(oral) followed by the same premedication plan on 4th day.
- This time 2 FFPs were transfused and patient tolerated it well without any reaction

- The patient was transfused with 4 units of FFP before the last cycle of DFPP under the same premedication plan successfully.
- Patient was taken for LDLT and during the surgery and received 4 packed red blood cells (PRBC), 1 single donor platelets (SDPC) and 6 Cryoprecipitate

- The patient tolerated the surgery well and is alive with good liver functions 10 months post transplant

DISCUSSION

- To prevent anaphylaxis-prevention of exposure to the inciting agent is the best modality, but if it is unavoidable, adopting a premedication plan under controlled conditions may work.
- Use of fibrinogen concentrate, washed platelets and washed PRBCs is the ideal approach.
- Such an approach was not possible because of limited availability of pure coagulation factors and financial constraints

THANK YOU