

Transfusion practices and pattern of blood components in liver disease patients at a tertiary centre in North India.

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Blood is the most precious and valuable gift of God to human being

It is totally depend on donor hence should be utilized in very guided manner.

Transfusion practices improves day by day in modern era, with development of technologies.

Although transfusion save many lives in certain emergency condition, but sometimes it causes serious adverse reaction in recipient.

In patient with Liver disease there is high chance of deranged coagulation profile due alteration in synthetic and excretory function and causes bleeding tendency in the patients.

The goal of blood transfusion is to provide a safe, sufficient, and timely supply of blood components to the recipients. In liver disease patients, the transfusion is usually prophylactically and is done to improve the coagulation profile. Presently, the transfusion decision is mainly based on the results of Conventional coagulation tests. But with the advent of point of care test of coagulation, which better define the hemostatic profile, there are no guidelines to define the cut-offs for transfusion based on their value.

The objective of this study is:

- 1) to assess the utilization pattern of blood components
- 2) to assess the potential of global tests (Thromboelastography (TEG) and Rotational Thromboelastometry (ROTEM)) to assist in targeted transfusion therapy in liver disease patients.

Study Design: This is a prospective observational study

Material and Methodology: The study is a Prospective descriptive study carried out at the licensed blood centre of SGPGIMS, a tertiary care centre in Lucknow (UP) India, for a period of one year from August 2023, to August 2024.

Data was gathered from patient file, Hospital Information System, Records from Emergency Medicine and Transfusion Medicine Departments.

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS, USA)

We collected data of daily admission in routine lab practice hrs of liver failure patients admitted in emergency of our institute and total monthly collection and utilisation of blood components from the record books in the blood centre.

We studied utilization (.... units) of blood components in liver disease patients admitted in emergency department of our hospital.

The total number of units issued in the year 2023-24 was, out of which red cell concentrate (RCC) was n=..... followed by fresh frozen plasma (FFP) n=...., platelet-rich concentrate (PRC) n=....., and whole blood (WB) n= nil respectively.

Cryoprecipitate was the least utilized component with only n=... units in an entire year in liver disease patients in emergency department.

The blood utilization rate in terms of Cross-match to Transfusion ratio, Transfusion probability, and Transfusion index were 1.02, 99.2%, and 0.99 respectively.

We studied of 534 liver disease patients admitted in the Emergency department during study period.

Out of which 107 patients (20.4%) had highly deranged coagulation profile.

Out of 107 patients, 46 patients (42.9%) required at least one blood component transfusion.

Out of 46 patients, in 38 (82.6%) patients the transfusion decision was based on the cut-off values of standard coagulation test. Whereas in 8 patients (17.3%) the TEG and ROTEM were additionally able to predict the deranged coagulation, which was not reflected on conventional tests of coagulation.

Our study provides current information on blood component utilization pattern in liver disease patients admitted emergency medicine.

Most blood requests (.....%) came from emergency department is for liver failure bleeding patients.

The major issued blood component was LPRBC (.....%) followed by FFP (.....%) and PRC (.....%).

The current transfusion guidelines in liver disease patients are based on the cut-offs depending on standard coagulation test , PT/INR,APTT, Hemoglobin , hematocrit and platelets count.

This study compares the values of conventional tests of coagulation with point of care/global test of coagulation.

This had assisted us in suggesting transfusion in additional 17.3% patients and in preventing bleed in liver disease patients.

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