Poster Session: 9.4 Clinical transfusion practice - criteria/guidelines

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THE USE AND ABUSE OF FRESH FROZEN PLASMA OUR EXPERIANCE IN CARDIAC SURGERY PATIENTS

Ambarkova Vilarova E[1], Mitrev Z[1], Blagoevska M[2]
[1]Hospital for Cardiosurgery 'Filipii', Skopje, Macedonia [2]Blood Transfusion Institute, Skopje, Macedonia

Aim: Our goal was to show that establishing the transfusion strategy for FFP (fresh frozen plasma) and collaboration between the blood transfusion specialist and clinical doctors is essential in providing adequate transfusion therapy in bleeding patients and reducing the harmful side effects and inrational use of FFP.

Materials and Methods: In retrospective analysis we compared the use of FFP in 2004 with 2005 and 2006 year. In 2004, FFP were used in every case of bleeding patient without analyzing the coagulation status of the patient (mostly as volume replacement therapy). In 2005 and 2006 year, when we established guideline according to which we used FFP in bleeding patients with proved prolongated coagulation tests (PT and aPTT over 1.5 times the midpoint of normal values), in massive transfusion and when we had to attained quick reverse effect of oral anticoagulant therapy. We tended to give 10–15 mL per kg BW of FFP, but sometimes we did not have sufficient supply from our blood banks, so we had to give concentrate of prothrombin complex as an additional therapy. In bleeding patients with low platelets count or disturbed platelet function we gave platelets.

Results: In 2004 year 654 patients had open heart surgical procedure and 1436 FFP were use (average 2.19 FFP per operated patient). In 2005 year 741 patients had open heart surgical procedure and 572 FFP were use (average 0.77 FFP per operated patient). In 2006 year 524 patients had open heart surgical procedure and 221 FFP were use (average 0.42 FFP per operated patient). Comparing 2004 with 2005 and 2006 year, there was statistically significant reduce in use of FFP ($P < 0.001$).

Conclusion: Establishing strategy, we markedly redused FFP clinical use, as a deficient product from human origine. We also reduced the risk which is associated with FFP transfusion.

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PLASMA PRODUCTS TRANSFUSION STRATEGIES IN PATIENTS UNDERGOING CYTOREDUCTIVE SURGERY (CRS) AND INTRA-PERITONEAL HYPERTERMIC PERFUSION (IPHP)

Coluccia P, Kasamura S, Favaro M, Fumagalli L, Costanzo P, Morelli D, Mastroianni A, Baratti D, Langer M, Deraco M, Ravagnani F
INT, Milan, Italy

Background: Patients with peritoneal surface malignancy undergoing cytoreductive surgery (CRS) using peripectomy technique and intraoperative hypertermic perfusion (IPHP) lose a large quantity of plasma proteins during treatment. Median requirements of fresh frozen plasma (FFP) was of 17 units (range 1–35) intraoperative and 6 units (range: 1–49) postoperative in 115 patients treated in NCI of Milan (1999–2004). One of the open issue is how to optimally replace plasma products, either FFP or Human Albumin (HA) or Plasma Protein Solution (PPS), in these patients which are comparable to patients with extensive burns.

Aim: As literature data regarding plasma products supply in this contest are scarce we decided to monitor transfusion requirements and proteins loss in patients undergoing CRS + IPHP.

Methods: Patients have been studied prospectively with peripheral blood cell counts, transfusion requirements, coagulation profile, serological albumin and total blood proteins and proteins loss from pleural and peritoneal cavities during CRS, IPHP and postoperative (PO0: 1st day; PO1: 2nd day; PO2: 3rd day). C-reactive protein was monitored as inflammatory marker.

Results: Since 2005 17 patients with no alterations of the baseline studied parameters were monitored. The mean number of unit of RBC and FFP transfused intraoperative was 2.8 (range 0–8) and 6.7 (range 0–14), respectively. Mean number of unit of PRBC and FFP transfused postoperative was 0.70 (0–3) and 6.2 (0–11), respectively. Neither HA nor PPS were used. No platelet transfusion was required. Coagulations profiles were stable without any marked prolongation of PT and /or PTT ratio (< 1.5). Serum total proteins and albumin levels reached the nadir in all patients during CRS: media (±1DS) 4.17 g/dL (3.46–4.87) and 2.27 g/dL (1.74–2.27). Total blood protein loss was 1.58 g during CRS, then progressively decreasing during IPHP-PO0 and stable in PO1-PO2. Mean serum albumin loss was 0.79 g during CRS and 0.55 g during IPHP. Mean intrabdominal total protein loss was 82 g during CRS and 79 g during IPHP. Mean intrabdominal albumin loss was 43 g and 22 g during CRS and IPHP respectively.
Serum fibrinogen increased progressively (643 mg/dL in PO2) while C-reactive protein was stable with a tendency to decrease in PO2. In PO1–PO2 patients presented diffuse edema.

Summary–Conclusion: More patients and a longer follow up are necessary to have results to suggest plasma products support in this subset. In the meanwhile some observations can be drawn:
(1) Transfusing FFP intraoperative total protein loss was much more pronounced than albumin loss and coagulation parameters were stable without bleeding complications. (2) Serum fibrinogen increased in postoperative without a parallel increase of C-reactive protein which could be attributed to a normal liver function and may be to hypercorrection caused by FFP transfusions. (3) Patients presented diffuse oedema manly in postoperative although serum albumin level has never been lower than 2.0 g/dL and the serum protein levels presented acceptable values along the study period.
These observations give the suggestion to continue to transfuse FFP during CRS and IPHP monitoring coagulation parameters and to use HA/PPS mainly in postoperative according to serum total proteins and albumin level and patient clinical conditions.

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A TYPE OF PATIENTS CLINICIANS ARE SENDING TO TRANSFUSION INSTITUTE FOR ANEMIA CORRECTION (A 5 YEARS FOLLOW UP)

Dimitrijevic M[1], Spasojevic S[1], Sikimic L[2], Bogdanovic G[3]
[1]Blood Transfusion Institute, Novi Sad, Serbia [2]Institute of Orthopedic Surgery and Trauma, Belgrade, Serbia [3]Institute for Blood Transfusion, Belgrade, Serbia

A 5 years follow up period is between 2002 and 2006 year and we looked for a type of patients our colleagues, hematologists, nephrologists and oncologists were sending to us, at Transfusion Institute in Novi Sad,Serbia, for correction of anemia. We have chosen few main parameters to express in this abstract. Besides overall number of patients sent to Transfusion Institute, one figure is dealing with the number of patients resent back to the specialists that sent them to us without giving them transfusion at our Institute, another figure is dealing with sex structure, a list of most common diagnose of a patient is next figure, as well as number of transfusions performed, a type of blood unit given, number of units given per patient and some others related to age and premedication given.
All together we had 555 ordered transfusions by clinicians during the 5 years period (111/per year). Out of those 555 ordered, 22 were returned for the treatment at the clinic from where the order came (4.4/per year). We also performed 14 autologus transfusions for the patients going for some orthopedic surgery treatment. A 346 transfusions were given to women (69.2/per year)and 173 to men (34.6/per year),which is exactly twice more in favor of women. In 2002, year we have 13 diagnoses for 155 transfusions, in 2003, year the same number of diagnoses for 120 transfusions, in 2004 year 14 diagnoses for 116 transfusions, in 2005 year 15 diagnoses for 60

