Surveillance of Adverse Transfusion Reactions in Fayoum University Hospitals

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Summary

Hemovigilance is defined as a set of surveillance procedures covering whole transfusion chain from the collection of blood and its components to the follow up of its recipients, intended to collect and access information on unexpected or undesirable reactions resulting from the therapeutic use of labile blood products, and to prevent their occurrence and recurrence.

Hemovigilance is generally divided to hemovigilance related to recipients and hemovigilance related to donors. The transfusion reactions in a recipient are generally subdivided as acute (within 24 hours) or delayed (after hours of transfusion) reaction. The donor hemovigilance should include recognizing and reporting of unexpected complications in whole blood and component donors and the action taken.

This study was carried out during the period from May 2016 to April 2017, to study all adverse reactions reported in both blood donors and recipients presenting to Fayoum University Blood Bank. The aim of the study was to determine the frequency and types of adverse reactions and to identify the types of transfusion products and risk groups associated with these adverse reactions. The results of the study are intended to be utilized in order to improve blood transfusion services at Fayoum University Hospitals. Subjects who fit the inclusion criteria and were eligible for follow up were 3292 recipients and 8300 donors.

Patients who developed acute transfusion reaction of any type and the actions taken were recorded in the Blood Transfusion Reaction Report of Fayoum University Blood Bank.

Serum ferritinwas evaluated retrospectivelyto patients who received more than 10 units of PRBC's to determine iron overload. Viral marker screening (HCV Ab, HBs Ag and HIV Ab) was done by ELISA. Patients were tested prior to transfusion and recalled after 6 months for follow up.

In donors any complications occurred rendering donation procedure or potentially unsafe for the donor, the donation procedure was stopped, the action taken was reported and documented.

Throughout this study:

1- 36 recipients (1.09%) (0.4% per components issued) developed the following adverse reactions with descending order of frequencies: allergic reaction in 17 (0.52%) which was the most frequent adverse transfusion reactions reported, FNHTR in 13 (0.39%), acute hemolytic transfusion reaction in 2 (0.06%), acute hypotensive reaction in 1 (0.03%), anaphylactic reaction in 1 (0.03%), convulsions in 1 (0.03%) and TRALI in 1 (0.03%).

2- Regarding adverse reactions, washed PRBCs caused the most common complications (58.3%), followed by PRBCs (19.4%), then FFP (16.7%), and platelets came as the least adverse reaction-causing component (9.1%) with p value=0.001.

3- Patients under 18 years, patients withhistory of previous transfusion, and those withhistory of previous adverse reactions, were found to be more prone to develop adverse reactions with p

value=0.001. On the other hand, there is no statistically significant difference as regard gender with p value=0.6.

4- Ferritin was used to evaluate iron overload. The level of ferritin was significantly higher in thalassemia patients compared to otherchronically transfused and control patients. Iron overload was detected in 104 (75.4%) of chronically transfused patients.

5- Screening of transfusion transmitted infection revealed that there was no new infection developed, but there were 4 cases of seroconversion.

6- The frequency of different types of donor complications observedwas (1.19 %) among all donors, vasovagal reactions (1.08%) which was the highest complication observed(in the form of hypotension (0.88%)and vomiting (0.2 %)), then hematoma (0.07 %) and the least was convulsions (0.02 %).

7- There was statistically significant difference between blood donors who developed complications and who did not as regard age.Donors under 20 years of age were more likely to develop complications with p value=0.002.On the other hand, there is nostatistically significant difference as regardgender or history of previous donation with p value=0.2 and 0.6 respectively.