

### THE RISK OF THE RH D ALLOIMMUNIZATION AFTER RH(D) INCOMPATIBLE PLATELET TRANSFUSION IN HAEMATOLOGICAL PATIENTS

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**Background:** Platelet transfusion therapy has become a major component of the supportive care provided to patients receiving aggressive chemotherapy. The transfusion of platelets is indicated to assure haemostasis in haematological patients with thrombocytopenia. We prepared platelet concentrates (PCs) from whole blood units collected during regular blood donations from platelet rich plasma and pooling them at a dosage one unit/10 kg body weight. The selection of platelets to transfuse is based upon ABO and Rh (D) blood group of a patient, if it is possible.

**Patients and Methods:** We retrospectively analyzed the frequency of RhD alloimmunization in a series of RhD negative patients with hematological malignancy that received RhD positive platelet transfusions. The patients had no previous exposure to RhD positive blood components and anti-D was not detectable before transfusion. Routine testing for antierythrocyte antibody detection was performed by column agglutination technology (DiaCell, Eryscan).

**Results:** Sixteen patients (8 men and 8 women) were included in the study. The median age was 60.5 years (range 28-80). The patients suffered the following malignancies: acute leukemia (4 cases), pancytopenia (4 cases), thrombocytopenia (3 cases), osteomyelosclerosis (2 cases), non-Hodgkin lymphoma (1 case), chronic lymphatic leukemia (1 case), myeloma multiplex (1 case). The patients were transfused with a median of 30,1 PCs (range 3-91). The median red cell contamination per PCs was 0.36 ml (range: 0.0 - 1.8). Blood samples from the patients were taken at least one week after PCs transfusion with a median follow-up of five weeks (range: 1-12). One of the 16 patients developed detectable anti-D after 5 weeks (male, 65 years old, acute leukemia). He received PCs in three transfusion episodes (14 PCs), once a week.

**Conclusion:** It is obvious that the number of patients was too small to make conclusion. We suggest that the risk of alloimmunization after RhD incompatible PCs transfusion still persist in hematological patients and it may not be related solely to dose.

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### GROWTH FACTORS AND HEMOTRANSFUSION THERAPY IN THE TREATMENT OF ACUTE RADIATION BONE MARROW SYNDROME: A CASE REPORT

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On 2 December 2001 three inhabitants of village Lea (Georgia) were exposed to Sr90 source. They were hospitalized at the Tbilisi S/R Inst. of Hematology and Transfusiology on 21st day after exposure. The patient I-DN at admission most serious clinical condition and was diagnosed as acute radiation disease with cutaneous, oropharyngeal and bone marrow syndromes. Complaints: Severe weakness, very severe pain on his back and in throat.

**Objective:** t-40°C, T.A.-70/30 Hg.mm, hyperaemia of neck, mouth and (later with bleeding from the nose, tongue, gums and gingival), signs of desquamation on his hands and two large areas of moist desquamation on his back. Peripheral blood counts showed severe leucopenia (0.1 G/L) and thrombopenia (8,0 G/L), lymphocytes could not be counted, erythrocytes remained within the normal range, but later anemia developed. Bone marrow aspirate showed very low cellularity.

In the complex therapy (antibiotics of wide spectrum in large dosage, antitumor drugs, parenteral nutrition with Saline, Rheopolyglukin, Glucose 5%, All 20%, Aminosal and HAES-steril 6% infusions, local treatment of radiation injuries etc.), for bone marrow syndrome G-CSF (Neupogen 300mg/d from Dec. by 30 Dec. 2001) and blood components (3 transfusion of thrombocytopenic concentrates - 4 units/d and 4 transfusion of erythrocyte concentrates - 3 units) were used.

**Results:** The provided treatment led to fast significant improvement of the patient condition. Hematological parameters reached the lower limit of normal range in two weeks.

**Conclusion:** G-CSF and blood components provide fast stabilisation of hematological parameters in acute radiation disease.  
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### USE OF WHOLE BLOOD AND BLOOD COMPONENT THERAPY IN TREATMENT OF SURGICAL PATIENTS IN TEN YEARS PERIOD (1992-2001)

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**Objective:** To make an analysis of using whole blood and blood components at surgical department in ten years period in Medical Center Veles.

**Material and Methods:** Observation of using whole blood, red blood cells (deplasmatised with additional solution and washed) and fresh frozen plasma related to hospitalised patients and per hospital bed. Statistical methods: mean, trend, and Hi square test.

**Results:** In accordance with world wide trend of using blood component therapy, in Medical Centre Veles, surgical department, in ten years period (1992-2001), there are decreasing trend of using whole blood from 97.60%(1992) to 8.65%(2001) and increasing trend of using red blood cells component therapy from 2.40%(1992) to 91.35%(2001). There is also increasing trend of using fresh frozen plasma.

Comparing 1992 and 2001 year, in use of blood therapy related to hospitalised patients at surgical department who received blood and patients who did not receive blood, it appears that there is statistically significant difference between these two years.

Also there is a reduction in average use of blood units per hospital bed.

**Conclusion:** The elementary reasons for this state are education of clinical doctors, improvement of surgical techniques increasing use of colloids and crystalloids and blood component therapy in acute hypovolemia instead of whole blood and use of intravenous iron in postoperative treatment of anaemia.  
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### THE POSITIVE ROLE OF ALBUMIN TRANSFUSION IN TREATMENT OF ACUTE RADIATION DISEASE: A CASE REPORT

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The patient 2-MG (exposed to 90Sr source) was hospitalized at the Tbilisi Institute of Hematology and Transfusiology on 23.12.01 (21st day after exposure). He was diagnosed as acute radiation disease with cutaneous and bone marrow syndromes. Complaints: Severe weakness and very severe pain on his back.

**Objective:** Signs of Herpes simplex on his face, slight dry desquamation on hands and large area (35x38cm) of moist desquamation on his back. Peripheral blood counts showed leucopenia, thrombopenia, lymphopenia, erythrocytes remained within the normal range; biochemical findings revealed hypoproteinaemia (63 G/L, albumin - 43.5%, globulin - 56.5%)

For local treatment of radiation injuries various antiseptic solutions, antibiotics and biostimulators were used. Besides, the patient was given the complex treatment with G-CSF, antibiotics of wide spectrum, antiviral and antifungal drugs, vitamins, intensive infusions of various solutions and transfusions of Albumin 20% (50 ml/d 1-10 days, then 50ml day after day).

**Results:** The provided treatment led to the improvement of the patient's condition. The damaged area on his back diminished (27x30 cm) and covered with fibrin layer, biochemical findings: protein - 71 G/L, albumin - 48.8%, globulin - 51.7%.

**Conclusion:** Intensive transfusions of Albumin 20% play the positive role in the correction of hypoproteinemia in radiation injuries.  
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