

# Prevention of posttransfusion reactions with use of leucoreduced erythrocyte concentrates in therapy of secondary anaemia in patients with malignant disease

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## Background

The presence of leucocytes in blood components is cause for appearance of various adverse posttransfusion reactions such a NHFPTRs, urticary, anaphylactis shock, alloimmunization and platelet refractorines, infection with bacteria and leucothropyc viruses (CMV, HTLV). The removal of leucocytes from blood components throught filtration is especially important in the patients with malignant diseases who need frequent transfusions of blood and blood components. This is because of their lowered immunologic status which is a result of the disease and recived immunosupresive chemotherapy and radiotherapy.

Aim: To show the prevention of posttransfusion reactions and the positive effect from transfusion of leucoreduced Er. Concentrates, produced with filtration in therapy of anaemia in patients with malignant diseases, treated in our Daily transfusion hospital at Medical center – Stip.

## Methods

123 patients with malignant disease have been treated in our Daily transfusion hospital in the last four years. Most of these patients suffer from Ca pulmonum, Ca colonis, Ca uteri, Ca mammae. Also, because of the secondary anaemia, the same patients were transfused with at least two doses of leucoreduced Er concentrates. The blood donored by voluntary repeated blood donors was filtrated the same day after the donation, separation and the control of the same one. The blood was collected in Baxter and Terumo bags and it was filtrated with Baxter – Sepacell RS – 2000 and Pall – purecell RN filters. The analyses of leucoreduction were made for every filtrated and transfused unit before and after filtration. The analyses samples were taken from the tubing system before and after filter. Haematologic parametes were taken automatically made in the Central Clinic Laboratory.

## Results

Er concentrates poor with the leucocytes for about 98-99% were produced with the use of these filters and platelets from 88-100% with which side effect from frequent transfusions at these patients were prevented.

With the routine monitoring of all patients none posttransfusion reactions were registered.

The therapeutic effect is also important because of the fact that the number of Er and the level of Hg and Hct remain almost unchanged.

## Conclusion

The aim of the Blood banks is to help and to increase the safety of the blood components. The leucoreduction through of Er concentrates poor with leucocytes is a regular procedure in the therapy of malignant patients with remarkable clinical picture of anaemic syndrome and prevention the cancer reccurence and infection.

The time of filtration is also very important which has to be shorter after collection of blood, because the leucocytes should be removed before they become desinegrated and release potentially dangerous substances and metabolic in the blood components.

We have been applying so called “prestorage filtration” because it has been proved that it is more efficient that bed-side filtration.