

# Hemapheresis

**Hemapheresis** is a therapeutic elimination procedure where we try to improve the patient's condition by removing some component of the blood, like cells or parts of the plasma.

## Principle

The component separators work on the *centrifugation principle*. The collected blood is mixed with an anticoagulant, directed to the separator, where the requested component is separated and the rest of the blood is returned to the patient's body.

## Depletion Interventions

They reduce the amount of multiplied blood elements.

- **Leukocyte apheresis:** in both acute and chronic leukemias, when the number of leukocytes exceeds  $100 \times 10^9/l$ .
- **Erythrocytapheresis:** it's indicated for primary polycythemia, haemochromatosis and haemosiderosis.
- **Platelet apheresis:** if the number of platelets exceeds  $1500 \times 10^9/l$ , eg in essential thrombocythaemia, primary polycythaemia, myelofibrosis.

## Plasma Exchange, Exchange Erythrocytapheresis

We remove a larger volume of plasma or blood elements from the circulation and replace them with solutions of crystalloids and colloids, or with blood elements and plasma from a healthy donor. Approximately 60 % of the circulating pathological component can be removed in one treatment cycle. It is less effective in trying to remove eg IgG, immunocomplexes and LDL particles, but it is possible to use the technique of **extracorporeal immunoabsorption**, which may be really helpful.

## Indications

- autoimmune diseases
- multiple myeloma
- blood clotting disorders
- hyperviscous syndrome

## References

### Related articles

- Principles of supportive treatment in hematology

### Source

- ČEŠKA, Richard. *Interna*. 1. edition. Praha : Triton, 2010. 855 pp. ISBN 978-80-7387-423-0.