

Immunotherapy

This article has been translated from WikiSkripta; ready for the **editor's review**.

The term immunotherapy includes all treatments that use innate immune mechanisms to activate anti-tumor immunity. In some cases, they may also serve to target drugs to the tumor site.

Basic division of immunotherapy

1. **Passive immunotherapy** – administration of pre-made antibodies or activated white blood cells
2. **Active immunotherapy** – administration of tumor vaccines from tumor cells or tumor antigens

Scientific research has shown that active immunotherapy is not very successful. The reason is that the immune system is unable to distinguish nearly identical tumor vaccines from its own healthy cells. So far, this problem prevents us from using active immunotherapy. Not only for this reason, today we use the services of passive immunotherapy in particular.

Immunotherapy applications

Immunotherapy is nowadays a developing discipline with great potential for the future. Targeted use has so far been limited. However, tumor immunotherapy in particular offers hope for a large percentage of cancer patients. In mass use, we are prevented by a closer understanding of the mechanisms of anti-tumor immunity, which would lead us to the clinical application of this knowledge. The main ones are three mechanisms that are not fully understood. They therefore represent an obstacle to effective therapy and are:

- method of administration of anti-tumor vaccines (tumor tolerance)
- insufficient specificity of target antigens
- need for a large number of white blood cells (localization of cytotoxic lymphocytes into the tumor tissue)

Antibody treatment

Today, however, we can detect the first signs of success. Drugs in the form of monoclonal antibodies to tumor antigens are routinely administered to patients. Herceptin (treatment of residual disease in breast cancer), Mabthera (treatment of lymphomas), Mylotarg (treatment of myeloid leukemias), etc. are relatively effective.

Use of immunotherapy

Another use of passive immunotherapy is the transport of radioactive isotopes or cytotoxic agents directly to tumor cells. At the same time, healthy cells are selected and survive unchanged. However, this method of immunotherapy is surrounded by a number of obstacles and is not yet fully effective. At the same time, immunotherapy could help us in other fields of medicine. Especially in the treatment or prevention of allergies and autoimmune diseases.

Links

Related articles

- Active immunisation
- Passive immunisation
- Simultaneous combined immunisation
- Vaccines
- Specific immunity
- Nonspecific immunity
- Vaccination in the Czech republic
- Regular vaccinations in the Czech republic (vaccination calendar)

External links

- Immunotherapy – treatment with immunity tools (Cancer League Brno) (<http://www.onko.cz/lekar-imunoterapie-lecba-nastroji-immunity/>)

References

- HOŘEJŠÍ, Václav – BARTŮŇKOVÁ, Jiřina. *Základy imunologie*. 4. edition. 2009. ISBN 978-80-7387-280-9.

