

Allergy treatment

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The treatment of allergies consists of two basic steps. The first is the reduction of allergen exposure or, ideally, its complete elimination, and the second is drug treatment. Drug therapy includes symptomatic treatment (relief of symptoms) and hyposensitization treatment (long-term reduction of the immune response to the allergen).

Elimination of allergens

The most common allergens are pollens, dust and mites. Furthermore, insect stings, food, drugs, some metals, etc. When eliminating, it is important to find out the exact allergen that causes the reaction and try to reduce or eliminate its exposure.

During the **pollen season** it is advisable to limit the ventilation of the apartment during the day, preferably to ventilate in the morning. **Climate treatment** in the mountains or by the sea can also be recommended.

Elimination of ' *house dust* **and** 'mites' is more difficult. The apartment should not have taller carpets, curtains of heavier fabrics, upholstered furniture. Allergic children should not play with plush toys (if so, the toys should be washed frequently and exposed to frost. Mites occur in the feathers of birds and mammalian fur, so it is advisable not to buy pets. Special care for bedding is important. Long-term ventilation in the frost, mattresses, blankets and pillows vacuum every day, changes to coatings once a week. Shampoos carpets. Loofings made of synthetic materials more suitable than natural. Recommend to provide air purifiers. When cleaning, use special products - acaricides (kill mites), products to eliminate mold.

Patients hypersensitive to ' *insect stings* ' should avoid flowering plants, fallen fruit. They should not go barefoot outside, eating and drinking. Do not wear colored clothes, do not kill insects (attracts other insects).

Professional exposition for bakers, joiners, in agriculture- Use PPE.

Complete restriction is almost entirely possible for **food allergens' and drugs and 'contact allergens** (chromium in tanned skin, nickel).

Drug treatment

Antihistamines

H1 blockers (competitively inhibit H1 receptors for histamine).

- **1st. generation** – sedative effects,
- **2nd. generation** – have no sedative effects, limitation of mediator secretion by the mechanism of stabilization of mast cell membranes and basophils.

Maximum level 1–2 hours after administration, Plasma half life 12 hours. Used for symptomatic treatment. Higher effectiveness if taken preventively regularly for several days, ideally in combination with topical treatment. The effects of alcohol are not potentiated in the new generation.

Very good effects in allergic rhinitis and pruritus. Little effective on bronchial asthma. bronchial asthma.

Ketotifen –antihistamine activity, antidegranulatory activity, blocks PAF → Asthma prophylaxis in children, somnolence, increased appetite

Mast cell membrane stabilizer

' *Sodium cromoglycate* ' – topically; bronchial asthma, rhinitis, conjunctivitis, food allergies; in particular a prophylactic drug.

N-acetyl-aspartyl-glutamic acid magnesium salt –in the form of a nasal spray for allergic rhinitis.

Glucocorticoids

We most often serve locally. General administration for Quincke's edema and bronchial asthma. They inhibit the effects of phospholipase A2, thus not producing arachidonic acid crystals.

Symptomatic drug

β-mimetics – reduction of inflammatory cell penetration.reduction of edema in late reaction. Inhibits phosphodiesterase, accumulation of cAMP, inhibits protein kinase C. Inhalation administration.

Specific immunotherapy(hyposensibilisation treatment)

It consists in the application of the appropriate allergen to which the patient is hypersensitive. In the first phase, we administer small doses, which we gradually increase in shorter time intervals. In the second phase, we administer maintenance doses of the allergen at longer intervals. The treatment is long-term, lasting several years.

We indicate an allergy to pollens or fungi(if the problem last for more than a few weeks). In bronchial asthma, we begin hyposensitisation only after the disease has stabilized.

The mechanism of action is the rise of specific IgG, especially IgG4. Furthermore, there is a reduced release of histamine *in vitro*. Treatment also interferes with the regulatory mechanism of immunity. regulačních mechanismů imunity. Activation of TH1-lymphocytes → cytokines → limit TH2-lymphocytes and IgE synthesis. It blocks the accumulation and activation of eosinophils.

Allergen extracts – Important allergen specificity. Purified, standardized, easy to apply, stable.

Contraindications: decompensated bronchial asthma, chronic inflammatory disease, active TBC, untreated cancer, autoimmune and immunocomplex disease, treatment with immunosuppressants, sometimes treatment with β -blockers, pregnancy (there is no reason to discontinue treatment in an already treated patient).

Forms hyposensitization

- ""Year-round treatment - **Subcutaneous application of increasing doses of allergen 1-2 times a week, later once every 14 days. After reaching the highest dose, a maintenance dose is applied every month for up to 6 weeks. E.g. mites**
- '*Preseasonal hyposensitization*' – in pollen allergies
- **Rapid hyposensitization** (rush) – application of allergen extracts several times a day, maintenance dose once a month. Requires hospitalization (higher risk of side effects).
- ""Oral, sublingual hyposensitization - **to pneumoallergens.**

Controversial in case of polyvalent allergy - mixed extracts in cross-allergy, grass pollen (4-6 species in the mixture).

Treatment usually lasts 3-5 years. Its effectiveness is assessed by the score of symptoms, the use of drugs, etc.

Adverse reaction

Common – erythema, rare edema - local granulomatous reactions, worsening of symptoms. "" General reactions - **Generalized urticaria, Quincke's edema, Dyspnoea, loss of consciousness, even anaphylaxis.**

Vasovagal syncope (pallor, bradycardia, hypotension, loss of consciousness); may also occur during skin tests: IgE mediated

References

Related pages

- Allergens
- Allergy

Použitá literatura

- HOŘEJŠÍ, Václav a Jiřina BARTŮŇKOVÁ. *Základy imunologie*. 3. vydání. Praha : Triton, 2008. 280 s. ISBN 80-7254-686-4