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Problems in the education of the patient with allergic rhinitis

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Abstract
Allergic rhinitis (AR) due to the complex pathogenesis and steady increase in the incidence of the disease in both children and adults, is a serious problem in modern medicine. The disease affects the quality of life of the patient and / or caregivers. The nurse / nurse plays a leading role in the care of patients with AR, participating in the process of diagnosis, therapy and prevention of disease. Standard in patient care with AR education is intended to prepare the patient for self-control disease.

Keywords: allergic rhinitis, education, prevention

Problems in the education of the patient with allergic rhinitis

In accordance with the recommendation of the Polish Society of Allergology (PTA) and the National Consultant Family Medicine allergic rhinitis (AR) is a
,, syndrome caused by an inflammatory response in the course involving the patient directed against the sensitizing allergen antibody immunoglobulin E (IgE) " [22]. ANN is a problem of the population of children and adults. Having a tendency to increase the frequency of AR is one of the main reasons to report patients to the doctors. The incidence of AR is related to age, with increasing age the incidence is reduced. In approx. 10-40% of patients with AR coexist with asthma and, in approx. 80% of patients with bronchial asthma coexists AR [22]. The development and course of the disease is influenced by numerous factors, including genetic factors, environmental and disease modifying. Among the many environmental factors deserve attention seasonal inhalant allergens (allergens, and trees early późnopylących,
ANN division is made based on various criteria:
- seasonal, year-round - because of the nature of the allergen causing symptoms
- ANN IgE-mediated, IgE independent ANN - due to differences in the pathophysiology
- periodic, chronic - due to the duration of symptoms
- mild, moderate, severe - due to the intensity of symptoms reported by the patient him / caregivers [18, 22, 24].

Problems in the care of patients with AR stem m. In. a complex etiopathogenesis of the disease plurality of triggers / exacerbating symptoms. ANN recognized too late, badly treated is causing m. In .: deterioration of physiological functions of the nose, sinusitis, otitis media, polyps, impaired sense of smell, disorders in speech development. The problem mainly in children is excessive irritability, fits of rage, anger, impaired concentration and sleep disorders, which are the cause of chronic fatigue, reduce the ability to have fun, learn, work [6, 12, 14, 22, 24]. The disease affects the quality of life of the patient, and in the case of children, their carers [23].

ANN diagnosis, therapy and monitoring of the disease in addition to the physician plays an important role the nursing staff. The basis of diagnosis is thoroughly interviewed with the patient / carers, physical examination, laboratory tests and allergy (eg. PTS, provocation tests donor). It is significant evaluation of the functional status of the respiratory system (eg. The PEF measurements, spirometry, rinomanometryczne test), the evaluation Laryngological sinuses and nasal (structures, the positions of symmetry of the shape of the nose) [25]. A properly conducted interview allows you to specify the time the first symptoms of the disease, its nature, determine the causes of the disease and symptoms due to exposure to allergens and harmful agents in the environment live, learn, work, directs further diagnostic and therapeutic decisions easier to make. The person conducting the interview with the patient / carers after collecting personal data directs his conversation on:
- nasal symptoms (runny nose, itching, sneezing, nasal congestion),
- bronchial symptoms (cough, recurrent, chronic, dry, paroxysmal, in the first phase of sleep or in the morning, wheezing, dyspnea)
- systemic symptoms (fever, chronic fatigue, headaches, photophobia, impaired concentration, sleep disorders, excessive irritability)
- seasonality of symptoms (season, month), the factors that cause and exacerbate the symptoms, the degree of gravity,

- family history of the disease (mother, father, siblings)
- children in the course of the neonatal period, infancy, way of feeding the child (natural, mixed plastics, the time to introduce solid foods a child's diet)
- vaccinations mandatory and recommended,
- previous illnesses, including infections of the upper and lower respiratory tract, surgery of the nose, sinusitis,
- the environment of the mother during pregnancy (contact with allergens, diet, medications, stimulants)
- environmental conditions in which the patient resides, exposure to allergic factors (eg. An old wooden house, the presence of a cat, dog, industrial plants near where you live)
- the results of diagnostic tests previously performed, existing therapies and their effect on remission of symptoms,
- the effect of the disease on the quality of life of the patient / caretakers [15, 22, 25].

An important element in the diagnosis of AR is a physical examination, during which attention should be paid to the so-called. stigmata allergic Salute allergic (transverse fold of skin at the base of the nose which is a result of continuous rubbing nose-up), the shadows and thickened skin folds under the eyes (suborbital Dennie Morgan fold). Also noteworthy orthodontic disorders (crossbite to advance the incisors) characteristic grimace, mouth breathing, hypertrophy of tonsils [34]. In the course of rhinitis symptoms, which may indicate other diseases, which is an indication for differential diagnosis, eg. To distinguish between ANN and infectious rhinitis [22].

Complemented by history and physical examination is to assess the quality of life of the patient using a questionnaire RQLQ (Rhiniconjuctivitis Quality of Life Questionnaire) [24]. The questionnaire includes questions on the problems of the patient and the symptoms caused by nasal and eye problems sleeping, problems concerning the sphere of physical, emotional and practical problems of the patient [35].

After completion of the diagnostic therapeutic decisions are made. At this stage, it takes into account a number of factors, including the severity m.in .: clinical disease and the degree of control, age of the patient, the safety and efficacy of drugs, patient preference for therapy [22]. The aim of the therapy patient with AR is mainly control of symptoms, prevention of complications, improve the quality of life of the patient / his caregivers. Due to the multifactorial etiology of the disease, the clinical course and possible complications of the patient requires constant and systematic treatment. Strict adherence to the patient and / or guardians to nursing and medical recommendations in respect of: medication, assessment of severity of symptoms, identifying and eliminating factors which cause release and / or exacerbation of the disease modifying treatment plan established by a doctor. Standard in patient care with AR is patient education and for the children and their carers. Education is a long-term process, which should be preceded by a diagnosis of the patient's general knowledge of his / guardians about the disease, the possibility of its control, prevention of symptoms, medications used and their mechanisms of action, knowledge of drug delivery techniques.

In the treatment of various AR are important therapeutic methods. Each of the forms of therapy involves risks of side effects, particularly when the patient him / guardians do not comply with the recommendations of the systematic medication in accordance with a predetermined dose, and not adhering to their lifestyle.

In the treatment of patients with AR occupy an important place intranasal drugs. Along this road they are given blood decongestants, nasal glucocorticoids (GKSd), antihistamines and immunomodulators. Drugs are used prophylactically as well as in periods of severe

symptoms. The efficacy of drugs depends on the mechanism of action of the drug used, the condition of the nasal mucosa, the application technique. From my own observation is that patients do not know the techniques of intranasal application of drugs or factors determining their effectiveness. The patient should be aware that the residual discharge in the nasal cavities, impairs, or prevents contact with the nasal mucous membrane, dispensed drug. In order to improve the efficiency of drugs to the nasal mucosa is indicated washing the nasal cavities with 0.9% NaCl or sea salt before applying the dose. Isotonic and hypertonic salt solutions, facilitate purification of the nose of the retained secretions, are improving physiological functions of the nose (including the heating of the air passing through the nose, moisturizing rhinitis), alleviate some of the symptoms of AR and ultimately contribute to improved therapeutic effects applied drugs [8, 22]. Improper technique drug on the nasal mucosa may result in mechanical damage to it, the effect of which is scabs, drying of the nasal mucosa, nose bleeds. These situations are a common reason for his resignation by the patient from the use of medications recommended by your doctor. The basis for the success of therapy using ANN nasally administered drugs is the acquisition by the patient him / guardians ability of drug delivery to the nasal mucosa.

1. Position by Mygind - by the administration of the drug, the patient should lie down horizontally on his back with his head tilted back. After the application of medicine, please head to the right, then left again and return to starting position. It is important that in each said position of the head of the patient survived for about 30 seconds. This is the optimal position for the administration in drops. The medicament provided in this way is deposited in the vicinity of the nasal vestibule, the side wall of the nose and nasal passages of the middle.

2. The position of Ragan - optimum position both when administered in drops or in aerosol. The patient dose by adopting laid horizontally on the side of the head slightly lowered, so that the temporal area was at the level of the shoulder joint. The head is slightly twisted, and the nose is directed towards the shoulder located above. After the application of the dose the patient should remain in the same position for a minimum of 30 seconds. Giving a medicament for the other nostril repeat similar operations. This selection allows deposition of the drug in the vicinity of the nasal vestibule, the side wall of the nose and nasal passages of the middle [3].

Both during the administration of drugs in the form of drops or an aerosol rule ,, crossed arms, "a medicament for the left nasal cavity should be given with the right hand, and to the right of left hand [23]. During application, the dosage of the dispenser tip should not touch the mucosa of the nasal septum [21].

A particular form of drug application is using nasal nebulization devices Rinoflow. Rinoflow is a type of inhaler, which is designed, among others, physiological and / or therapeutic washing the nasal cavities, wetting and dissolution of the retained secretions in the nasal cavities [36]. The duty medical personnel of the patient is read / guardians of the principle of operation of the device, introduction of the technique of this form of therapy, the principles of storage and use of equipment. Rarely are drugs used intranasally in the form of gels and ointments.

Ignorance mechanism of action of drugs is a problem for many patients, particularly in case of exacerbations when there is a need to modify the therapy. The patient education / guardians should discuss the nature of the disease, a group of drugs used in therapy and mechanism of their action and the time after which therapeutic effects are visible. The patient should receive written recommendations for modification of therapy in the event and / or exacerbation of the symptoms of the disease. An important place in the treatment of patients with AR are GKSd. These drugs relieve the symptoms of AR, as well as from conjunctivitis.

The basis for therapy using GKSd is consistency in application. The patient / caregiver must be aware that the ad hoc use of the drug from this group will have no effect. GKSd onset of action occurs after 7-12 hours after dosing.

The dominant relief of symptoms in AR (runny nose, sneezing attacks, itching nose) apply medication p / histamine. For the treatment of drugs are mainly used II generation less generation drugs, mainly due to occur after ingestion side effects: dry mouth, headaches, impaired perception, sleepiness, attention deficit disorder. These symptoms prevent science, performing works demanding attention, driving car [8, 22].

One of the symptoms of rhinitis is a swelling of the nasal mucosa and excessive mucus secretion upon contact with allergen. To minimize these types of symptoms, p / leukotriene drugs are used, the effects of which are visible already on the second day of therapy [8, 22, 23]. In a patient who has a nasal blockage problem, a vasoconstrictor can be used. Due to the narrow range of therapeutic concentrations, the medicines in this group should not be used in infants and young children. The use of drugs from this influenza for more than 10 days may cause undesirable systemic effects (irritability, muscle tremor, insomnia, tachycardia) and local lesions, such as: mucosal edema and drug-induced rhinitis [22].

Causal treatment, and at the same time modifying the course of ANN is specific immunotherapy [9, 23]. Immunotherapy is an example for secondary prevention in patients allergic to dust mites, grass pollen and tree [18]. During desensitization therapy it is necessary to observe the standards of conduct described by the World Health Organization (WHO), the European Academy of Allergology and Clinical Immunology (EAACI), PTA. The commencement of therapy confirmation IgE - dependent, the signature by the patient him / guardians agree to this form of treatment, and declare the standby regular reporting to study the adoption of the vaccine [9, 23]. The type of vaccine, and by this scheme which will be administered doctor decides. Allergen immunotherapy is burdened with the risk of many adverse effects, posing a serious threat to the health and life of the patient. When the patient's eligibility for allergen immunotherapy and during the exercise plays an important role nursing staff:

- participates in diagnostic procedures (interview, skin prick tests, nasal provocation, spirometry, PEF)
- taking an active part in assessing the condition of the patient prior to the administration of the vaccine (interview concerning the general condition of the patient, the response to the vaccine before, the measurement of PEF, spirometry, drug allergy symptoms control)
- gives an allergen / allergen according to the doctor's order. [37-70].

Because of the risk of adverse events after administration of the vaccine the patient remains under observation in the study nurse / min by a nurse. 30 minutes. At this time, an assessment of the general condition of the patient, with particular attention to signs that may indicate a systemic reaction (the primary tightening of the disease, urticaria, angioneurotic edema, shock). Local symptoms such as: swelling, redness, pain, itching at the injection site does not constitute a particular risk for the patient. The purpose of minimizing the cooling wraps used in the place of administration of the allergen / s, are dosed p / histamine. Increased local changes are the basis for verification by the physician doses of allergen with sequential administration. A doctor, nursing documentation is recorded in the diary and desensitization concentration and dose of allergen / s, time and site of administration (right hand, left hand) and all symptoms occurred in a patient after administration of the vaccine. To minimize the risk of local and systemic reactions after vaccination the patient in the morning on the day of vaccination should take the drug p / histamine, should not perform intense exercise, taking hot baths, eat foods that contain histamine and trigger it; coffee, tea, cheese, eggs, meats, fish,

sauerkraut, cocoa, chocolate, tomatoes, strawberries, spinach, eggplant [9, 26]. Vaccines are usually held in the facility in which they are served. It is necessary to preserve ,,

In the treatment of a patient with AR is needed constant monitoring and assessment of severity of symptoms, and their character changes depending on the place, time and situation in which they occur. Some of the symptoms of the disease due to their subjective nature of the assessment is difficult. The device useful in assessing the severity of symptoms in the disease is the visual analogue scale (Visual Analogue Scale, VAS), which has the form of a horizontal line, on a scale from 0-10. Are evaluated following symptoms: nasal obstruction, rhinorrhea, itching and sneezing. 0 means no symptoms 10 indicates that the symptom is very severe.

Dig. 1. VAS to assess the severity of the symptoms of rhinitis [33].

Source:
[https://www.researchgate.net/profile/Adam_Sybilski/publication/318773600_Alergiczny_niezyt_nosa_-_diagnostyka_i_terapia_Trudne_czy_latwe/links/5a913c3ba6fdccecff027c4e/Alergiczny-niezyt-nosa-diagnostyka-i-terapia-Trudne-czy-latwe.pdf]

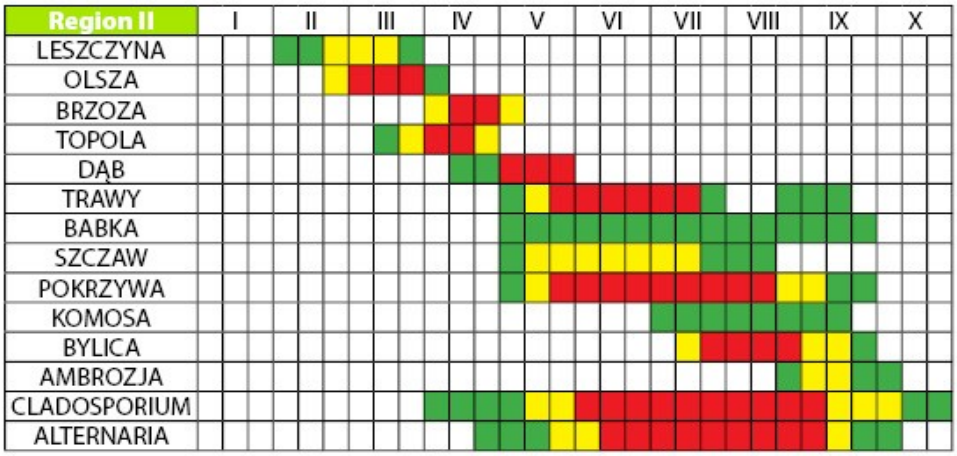
Systematic evaluation of the symptoms is important in assessing the impact of environmental factors on the clinical manifestation of symptoms and evaluating the effectiveness of the therapy.

Patients with AR, and the case of children, their caregivers should be able to make the identification of triggers, aggravating the symptoms of AR and implement procedures in the field of secondary prevention and tertiary prevention [1, 19]. Pollen is one of the causes of AR symptoms and clinical manifestations. Pollen season is different for each species (seasonal) depends on: the climatic zone, the weather and altitude. Regardless of the type pollen sensitization greatest exposure to allergens present in sunny and windy days [20]. In the prevention of symptoms that are caused by pollen, it is important nonpharmacological as well as start taking drugs with different mechanisms of action, after the appearance in the media information about the occurrence of medium concentrations of allergenic pollen plants, at the latest on the first appearance of symptoms. Polish Standards recommend starting treatment with AR medication for 10-14 days before the onset of illness, i.e.. Before the expected exposure to the allergen and continuing throughout the treatment period of exposure [23]. Each patient his / guardians should know how you can reduce exposure to allergens plant. For this purpose, patients / caregivers recommended: how can you reduce exposure to allergens plant. For this purpose, patients / caregivers recommended: how can you reduce exposure to allergens plant. For this purpose, patients / caregivers recommended:

- tracing in the media and on the website for information on the current and projected concentrations of allergenic pollen plants (trees, grasses, weeds)

- during the high concentration of pollen / pollen strictly in sunny and windy days, the patient should confine the open air to a minimum, should spend free time in a room with closed windows,
- closing the windows in time when the concentration of pollen / s is at its highest (between five o'clock and eight o'clock) and in the afternoon when the air temperature is highest and the humidity is low,
- setting nets on the windows, with small holes, often spray them with water,
- driving a car with the windows closed,
- the use of glasses well adjacent to the face and donning caps during his stay at the court (conjunctivitis to protect against contact with pollen / pollen)
- lubrication area of the nose, eyes, greasy cream (stopping pollen on the skin),
- wash your face, hands, change clothes after returning home,
- walking, playing outdoors immediately after the rain,
- regular mowing grass around the house (necessarily with glasses)
- planning summer vacations, taking into account the climatic zone and the pollen calendar,
- rest on the sea in high mountains, cruise sailing [17, 19, 23].

Dig. 2. Pollen calendar [28]



Source: https://www.google.pl/search?q=kalendarz+pylenia

In some patients, the cause of the symptoms of mold spores are present on the outside (Alternaria and Cladosporium), and inside the living quarters (Penicillium and Aspergillus). Summit for spores of fungi of the genus Alternaria and Cladosporium falls on the late summer months. Of indoor fungal spores are present in the air throughout the year. The most favorable conditions for the development of fungi exist in old, poorly or not at all ventilated areas, in areas with high humidity and low light availability (basements, laundry rooms, bathrooms, utility rooms), saunas, swimming pools. Fungi colonize places difficult to clean (ie. The lower surfaces of window sills, seals around the door of the refrigerator, sewage pipes). Fungi Alternaria species colonize the outer layers of the soil and dying vegetation. They favor their development of high humidity and moderately high temperature (22-28°C). Air is free of spores (conidia) in winter, while the layer of snow covers the surface of the earth, and the temperature falls below 0°C [29]. To minimize exposure to molds include:
- to follow in the media, on websites information on concentrations of mold spores in the atmosphere,

- confine the outside to a minimum when there is a high concentration of spores of molds (after a storm, fog, high humidity).
- avoid work in the garden, raking leaves, compost at work, cutting of old trees,
- avoid entering the old buildings, basement, attic and reside in them,
- avoid work and entering the greenhouse, mushroom,
- do not use indoor swimming pools, saunas, baths,
- ventilate the room,
- do not use humidifiers,
- air conditioners to keep perfectly clean,
- do not put up wet clothes on radiators,
- to remove, reduce the number of pot plants which require abundant watering.
- not wallpapering walls,
- remove the liner from the floor,
- fruit and vegetables stored in the refrigerator,
- kitchen waste removed regularly,
- waste bins to keep perfectly clean,
- remove from the premises of residential natural leather, old furniture, old clothes, old books, shoes, which can develop mold,
- review the condition of the pipes in the bathroom, in the kitchen, in the basement, eliminate stains,
- dry the damp walls of buildings,
- chemical fungicides used in bathrooms, kitchens, basements,
- maintain a perfectly clean sinks, baths, shower, sinks, tiles and floor tiles.
- remove from the bathroom rugs, mats that absorb water,
- remove leaves from gutters, other impurities that impede the outflow of water [19, 23, 29, 37-70].

In a large percentage of patients the cause of the disease and the clinical manifestations of the disease are mites. In Poland, Poland mite allergens are the cause of allergy 21-36% of the population. In the home environment is the most common allergen contained in the droppings of house dust mites, which is the main causative agent of AR in children and adults. Most mites occur in the lowlands, and their number decreases with increasing altitude. Allergy to mites is a year-round, but their numbers subject to seasonal fluctuations and is dependent on the temperature and humidity in the room. The symptoms worsen during the heating season. House dust mites are not visible to the naked eye arachnids length of 0.1-0.5 mm. Dust mites feed on human skin and pets, hair, nail remnants, remnants of food of plant origin. 1.5 g of exfoliated skin in one day from one man is enough to feed thousands of mites over a period of approx. Three months. The source of allergens is excreted to the outside of a hard balls food, feed the mites. In a domestic environment habitat mites are: upholstered furniture, feather bedding, carpets, thick curtains, draperies, plush toys, old books, natural fur, air conditioning and central heating systems.Population mites in the house depends, inter alia, of: the number of occupants (the more people the more mites), housing equipment, methods and frequency of cleaning. Optimal conditions for the development of mites, include:
- the availability of food (eg. The epidermis, left leftovers)
- temperature 17 ° C-30 ° C, ideally 23 ° C,
- optimum relative humidity of 75-80%.

In our climate zone, the maximum number of mites falls for summer and early autumn. In the winter due to freezing temperatures and low air humidity inside the living quarters the number of mites in house dust is low. The patient allergy symptoms are present when the

amount of allergen than 2 mg / 1 gram of dust inside the room. Typical symptoms of allergy to house dust mites, are: runny nose, sneezing volleys, itching and nasal congestion, itchy eyes, dry coughing bouts, shortness of breath. The symptoms may be related to making orders, being in the old rooms in the barn or in the attic. The basis for the fight against mites is to create the least favorable conditions for their development, by:
- reduction of humidity, lowering the temperature to a critical level (<15 ° C) or the increase of> 35 ° C - the conditions in which the mites are gradually dry out, and the inhibition of their proliferation capacity.
- removal of items from the bedroom collecting dust (furniture, mattresses grass, downy pillows, old books, thick curtains, plush toys, etc.)
- daily ventilation of rooms, daily cleaning wet, use a vacuum cleaner with a high cleaning efficiency of HEPA filter system,
- the exchange of bedding wool, feather for anti-allergic bedding that is suitable for washing at a temperature of> 60 ° C,
- washing underwear at a temperature of> 60 ° C,
- use for bedding, mattress covers impermeable to dust mites,
- change of bed linen daily, and bed linen minutes. every two weeks,
- cleaning of premises in the absence of a person who is allergic and with the window open,
- issuing carpets, bedding, curtains to the low and high temperature (approx. 6 hours)
- frequent washing plush toys and inserting them in plastic bags in the freezer,
- improving the conditions for ventilation of rooms,
- Avoid using heating farelki, blowers (soar dust in the air)
- use chemical tests, by which the patient him / guardians isolated within a few minutes can determine the concentration of allergen, for example. in the dust of the mattress,
- the use of spring and autumn preparations for destroying mite allergens exudates from carpets, rugs, upholstered furniture, blankets, pillows, quilts, curtains [11, 17, 19, 23, 37-70].

Dig. 3. The house dust mite [30]

Source: https://www.google.pl/search?q=roztocze+kurzu+domowego

In some patients with AR mites are causing the symptoms of flour (the pantry). They favor their development humidity of 80-90% and the temperature approx. 20-25 ° C. Flour mite allergy affects both rural residents and urban residents. Often coexists with allergies house dust mites [31]. Mite allergy symptom flour itching and skin irritation called ,, itching of warehouse "symptoms, conjunctivitis, nasal congestion and lower respiratory tract. Habitat flour mite are places where it is stored and processed grain, flour, cereal, pasta. to minimize

the frequency and severity of symptoms a person with an allergy to mites of flour should not have contact with the flour, should not engage in the production of breads, pastries and other flour products [17].

In an increasing percentage of the population and are the cause of allergieslergeny pet allergens (year-round), which They are found in house dust, carpets, mattresses. They are also present in shopping malls, public buildings public transport. Allergen is: the skin, secretions of the sweat glands. tallow, urine, or saliva (depending on the species of animal), and the carrier is a hair to which the allergen is transmitted during the licking. Among the many mammals, the most aggressive allergens is the major cat allergen (Fel d 1) at the secretions of the sebaceous glands and salivary glands. Allergen does not have seasonal variations in the concentration of house dust. It is present in every home, even one where the cat has never been. The presence of a cat in the home increases the concentration of the allergen. Removal / scythe getting rid of the house does not cause a significant decrease in the concentration of the allergen in the dust for at least 5 years.

In the case of the dog skin is the source of allergens, urine and saliva. In the rooms where the dog resides, allergen concentration is a hundred times greater than where there is a dog. Removing the dog of the room causes a significant decrease allergens.

Fashion for culturing murine (e.g.,. Hamsters, guinea pigs, mice, rats), increased risk of allergens originating from urine [17, 20]

According to the recommendations from the environment people allergic to animal allergens, you should:

- remove the animals from the home, absolutely bedroom,
- remove from the environment allergic objects in the reservoir animal allergens (eg. Carpets, upholstered furniture, carpeting, cuvette)
- to ensure cleanliness of the animal, increase the intensity of the cleaning of the room in which the resident,
- avoid visits to homes where animals are to avoid trips to the zoo, the circus,
- disposing of used chemicals animal allergens [19, 23, 37-70].

To assess the degree of compliance by the patient's medical recommendations (medication compliance by the patient), the term compliance, which concerns pharmacotherapy and / or adherence, which takes into account the behavior associated with downloading the right medication, change habits, as well as the need to change their lifestyle. The patient to his / guardians comply with the recommendations of the doctor and nursing staff must be motivated to take an active participation in the process of treatment and disease control. They must be aware of the impact of their behavior on the course of treatment and quality of life [4, 13, 37-50]. The success of education provides preparation of the patient / guardian to his self-control of the disease, which is a measure of the effective prevention of exacerbations, minimize symptoms, prevention of complications [27].

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