Chapter 3

POLLINOSIS

Memo for practitioners

- During the primary examination the practitioner should pay special attention to the communication, its intensity and gradation. When the patient has an allergic rhinitis (also called pollinosis), the sounds go through the nasal cavity typical for the allergic rhinitis and the speech sounds too muted;
- During compilation of the medical history on allergosis, of special care should be the following: incursion of disease, seasonality is of special attention. Most patients can easily report on the date of the disease onset and end. This greatly helps identifying the clinical form of the rhinitis, whether seasonal or perennial allergic rhinitis (PAR);
- The length of allergic reaction should be defined, since in climatic conditions in the Central Asia regions and hot climate countries the pollinosis pattern is known to have a cyclic flow regime;
- The combination of the allergic rhinitis with other allergic diseases should be also paid attention;
- The prescribed therapy and its effectiveness should be questioned and analyzed thoroughly;
- Upon examination the practitioner should introduce the School of highly allergic individual to the patient. The health carer informs on the diagnosis of the patient, therapeutic modalities and length of treatment. Such communication is required for successful and effective treatment of pollinosis.

Pollinosis refers to the most common allergic diseases among adults and pediatric patients. It ranks second among all allergic diseases.

Pollinosis (in Latin "pollen") is a well-spread allergic disease of the instant effect type that occurs due to the human sensibilization to the plants pollen.

Based on the data obtained by the Institute of Immunology of the Russian Federation (2002), this type of disease is characterized with acute allergic inflammation changes that manifest in the mucosa coating, preferably, of the respiratory system and eyes.

This disease is known for the cyclic seasonal frequency that occurs during blooming period of particular plants.

The clinical pollinosis is manifested as the allergic rhinitis, conjunctivitis, atopic asthma, urticaria and the Quincke's oedema, etc.

Due to its prevalence rate, pollinosis was an issue of great concern even in the ancient times. The clinical signs of allergy to pollen are described in the works by Aelius Galenus or Claudius Galenus (AD 129–c. 200/c. 216), a prominent Roman physician, surgeon and philosopher.

Abu Ali Ibn Sina (Latinized as "Avicenna") descried in details various conditions occurring in the nose, including different reasons for bad odor, nasal cold and catarrhus, sneezing and dry mucosa coating in the nasal cavity in his "Canon of Medicine".

He stated in his book, in the section for the nasal cold and catarrhus, that "catarrhus occurs more often due to the cold than heat and hot-tempered people are more prone to the exposure of environmental factors that cause nasal cold...". Abu Ali Ibn Sina adopted the theory that the diseases are caused by pollution in the air (miasma). "The cause of these lies in the warmth of individual nature, either external [warmth] caused by the sun, desert storm or heating agents smelling such as musk, saffron, onion, or the cold of temperament, or [cold] as an external factor as cold air and wind". Nowadays this event is called heat or cold allergy.

In his description of the sneezing clinical symptoms, Abu Ali Ibn sina Абу Али outlined both its harm and benefit. "Sneezing is too harmful at the occurrence of the catarrhus and cold, since the juice that should come to a head [to cure itself], requires to be rested. In most cases [the sick person] sneezes so much in fever and similar [diseases], that this causes depression and head swelling, sometimes it results a strong nose bleeding which should be swiftly stopped". He further describes that: sneezing is the most wholesome to get the head dry in case when the matter [is caused] due to the wind, even if it is in abundance, or when it is due to the steam. Sneezing is the most useful movement when the head is full of

stem, as well when the substance is thick and mature". Doctrines by Abu Ali Ibn Sina are still effective and applicable in the modern medicine.

The first official announcement on "the case of regular affection of eyes and chest" was done in Europe in 1819 by the English physician John Bostock at the session of Medical and Chirurgical Society of London.

Charles Blackley, the English physician, published the results of 20 years of extensive experiments on hay fever allergy to establish this diseases as being due to contact with pollen. His book Experimental Researches on the Causes and Nature of Catarrhus and Aestivus (Hay-Fever or Hey Asthma) appears to be so monumental in the history of allergy that much of modern allergy research is indebted to his ideas and suggestions. He used to suffer from regular allergy attacks and thus, all through experiments to trace the disease development and course were performed with his personal participation. He revealed that the catarrhus is caused by the plant pollen which affects the organs and tissues it can easily penetrate from air.

In Russia the first announcement on the "first catarrhus", summer cold, hay fever, rhinitis vasomotoria was made by L. Silich in 1889 at the session of the Russian Physician Society in St. Petersburg.

Therefore, due to the development of the allergology and immunology as sciences, and in view of the pandemic development of allergic diseases a wide group of diseases was established in the clinical allergology practiced caused by various herbal pollen. Pollinosis is one of the well-spread allergic diseases in every corner of the world. According to the data identified by E. Gorov and Yu. Poroshin (2002), the pollinosis affects 1 to 38 % population in different regions.

Similar results were obtained in the course of investigations held in many other countries involving adults and children. Based on data obtained by I.I. Balabolkin et al. (2009) 4.8 to 11.8% children are exposed to pollinosis in Russia.

Investigations conducted in Switzerland evidence on the prevalence of pollinosis for the last decades showing increased figure: it grew from low index of 0.28% population affected in 1926 to 4.8% - in 1958, 9.6% - in 1985, and 14.25% - in 1995.

The pollinosis prevalence is stipulated by the total of climatic and geographical factors, in particular due to endemic, ecological and genetic factors typical to a particular region.

Endemic pathology of pollinosis differs significantly from region to region. The basic reason of pollinosis occurrence in Krasnodar Region is the ambrosia, the quarantine weed (pollen dispersion starts from early August and lasts to early November), sagebrush in Kazakhstan

(pollen dispersion starts from late July and ends in early September). In the midland of Russia the three seasons of pollinosis occurrence are distinguished: early (from early April to late May) associated with the tree pollination (birch, nutwood, and others); the second season (from June to July) is caused by pollination of grasses (timothy, fescue grass, common hedgehog, mint, and others); and third season (from August to September) is associated with pollination of sagebrush and saltbush. As you see, every region is noted for its particular character of nature. And the allergic pattern in Uzbekistan is typical to the region. The Uzbekistan environment is quite varied. According to the climatic and geographical parameters three zones can be outlined: Fergana and Surkhandarya Valleys, Golodnaya Step Zone (Mirzachul).

Fergana Valley is situated in the Eastern part of the republic and is surrounded with high ranges of mountains from all sides. The climate of its western part is arid, annual rainfall amount hardly gets to 100 mm.

In the East, with the upper lands, the rain capacity is more prominent. On the western downhill of the Fergana Range the rainfall is heavy. The maximum precipitation is noted in spring and winter. The summer is hot and dry. The period of plant vegetation lasts 235-240 days. Vast land in the Fergana Valley are adopted to cotton fields and gardens. Most common plants to grow in the valley include saltbush, sagebrush, mint and beaked sedge. The downhills and sub-mountain region are covered with ephemeral. As one of the common timber species the plane tree (chenar or Oriental plane) commonly grows in the Fergana Valley.

The second zone is Golodnaya Step. This area lies from the Kyzylkum desert to the valley of the Syrdarya River. This a vast lowland slightly degrading from the South-East to North-West area. Masses of cold and dry air freely flow from the north, while the western winds are moisty. The climate is extremely continental. Days get hotter in the second half of the spring and plants get dry. The summer is long, dry and hot in here. Frost-free period lasts 206 days. Strong winds reign in Golodnaya Step. In the winter period the snow travels in the wind laying some areas open and covering others with snow. Too hot and dry wind named Garm-Sel blows in the summer. The ambient air is too dusty and the temperature rises to 40°C and higher with the soil dying. In the intermountain lands the valley breeze blows. The spring comes in the early February. The autumn starts in September. The winter is short and is not long. The desert wakes in the rainy season in the spring and the land is covered with the thick layer of sedge, poison hemlock, poppy and other herbs. The early May starts with heat and plants tend to die. Only drought-resistant and heat-loving plants

survive, such as sagebrush, caperbush, salt grass arboraceous, tamarisk, camel's-thorn and others.

Fruit plants grow on the northern hillslopes, such as pistache, almond nut, cotoneaster, and barberry. Cousinia microcarpa, Aeluropus littoralis, Russian thistle and tamarisk are common plants in the saline basin.

The third zone is Surkhandarinskaya Valley which is situated in the very South of the republic, where the country borders with Afghanistan. The climate of this zone even land is described as having warm winter time, and hot and dry summer (240-250 days). The average temperature in January is 1.8-3.6° C above zero and 28-32° C in June; in summer the temperature rises to 44-46°C, and somewhere in particular zones - to 50°C.

The hot wind blows from the South-West named afghanets which brings too much dust and lowers the relative humidity of the air. Frost-free period in the Surkhandarya valley is one of the longest in Central Asia: from 226 to 266 days. High ambient air temperature in summer, long frost-free period with the artificial irrigation just contributes to ripening of heat-loving subtropical crops, such as fine-fibred cotton-plant, persimmon and even the sugar cane.

It is known that in climatic and geographical conditions in Uzbekistan the pollinosis is caused by the blooming of sagebrush, plane tree, and walnut. Clinically the pollinosis is manifested in most individuals at the age of 1 to 40 years. The pollinosis prevalence increases in children at the age of 3-5 years old, reaches its highest extent while at school and reaches to 20-30 years old in adults to be of seasonal nature.

Factors that provoke pollinosis attacks in the natives of these lands vary in evidence, ineluding respiratory system diseases, blooming period and physical contact with grasses, the early spring and summer days, dietary errors, moving, cotton-plant blossoming, house cleaning and many others.

As it is seen in practice most patients experience pollinosis attacks during the course of acute respiratory diseases. A.D. Ado, Yu.A. Samushia assumed that the infectious process in such cases provokes penetration of the huge number of allergens inhaled through the affected mucosa coating into the tissues. Here, the patient has sensibilization to such allergens available. Therefore, respiratory diseases appear not "immediate" reason of the diseases but the factor only that facilitate transition to subclinical form of non-infectious allergy to the clinical one with symptoms.

22 patients out of 125 examined explained that they related the onset of their disease with the touch of herbs, 10 of them experienced such symptoms with the spring period coming, and the others – with

other factors (diet disturbance, blossoming of the cotton-plant, change of domicile, etc.). As it is seen, such diseases are obviously season-dependent. The disease exacerbates in the late February and early March and symptoms resolve in October to November, that is when frost strikes.

In most cases patients are reported to seek medical help in the period during March to June. And this is the period when the poplar, osier, sycamore, Persian walnut, fruit trees and other plans blossom in the spring; in June the cotton-plant blooms that lasts for about a month. The blossoming of sagebrush, timothy, saltbush, fescue grass, cock's-foot grass, maize, sunflower, black bent and other plants sharply increases the concentration of pollen in the ambient air.

For the area of Uzbekistan the pre-mature exacerbation of the disease is typical with the relatively long course lasting for 8 to 10 months. Based on the climatic and geographical conditions in various regions in Uzbekistan, the pollinosis treatment duration varies from region to region. The treatment regimen takes for an average of 8 months in patients from the Fergana Valley and Tashkent region; 9 months is required to treat patients from Syrdarya, Jizzakh and Samarkand regions; and 9.5 to 10 months to treat patients coming from Surkhandarya, Kashkadarya and Bukhara regions and the Republic of Karakalpakstan.

The fact that clinical symptoms of pollinosis in Uzbekistan territory depends on the kind of pollens should not be disregarded. During the blossom of peach trees and other fruit trees the pollinosis is manifested as the allergic pollen disease and asthma of transient nature (from 15 days to 1 month). In the territory of the Fergana Valley and Tashkent region the pollinosis is associated with the blossoming of sagebrush, saltbush, and sycamore. These symptoms run as the pollen atopic asthma, rhinitis and conjunctivitis.

The clinical symptoms of pollinosis are often associated with such dermal signs as urticaria, the Quincke's oedema, neurodermatitis, weeping dermatitis in patients native of Surkhandarya, Kashkadarya, Bukhara and Khorezm regions, and the Republic of Karakalpakstan.

During the blossoming of the cotton-plant (June to August) the clinical signs of most pollinosis are manifested as rhinitis and conjunctivitis. Among the monitored 125 patients with pollinosis 47 were reported to have combination of rhinitis and conjunctivitis, 14 of them experienced only atopic pollen bronchial asthma, without any signs of rhinitis and conjunctivitis. In other cases we observed the combination of rhinitis with dermatitis, bronchial asthma, bronchitis and other allergic diseases.

Allergic rhinitis

On an annual basis, especially in the spring period, the scientific medical journals publish a range of material devoted to the prevalence rate, clinical symptoms, diagnostics and treatment of allergic rhinitis.

Allergic rhinitis is the most common medical problem in most countries. For the last several decades the steady growth of patients with this pathology is reported in various countries. According to the scheme of allergology diseases the ratio of the allergic rhinitis is quite high (60-70%). The occurrence of allergic rhinitis is associated with various limitations in physical, psychological and social parts of the human being. Allergic rhinitis makes people suffer most of their life and due to that the quality of life decreases and their day-to-day activity is interfered. Allergic rhinitis affects an estimated 35 mln natives of the USA per year with the evident symptoms of allergic rhinitis; the expenditure to treat allergic rhinitis totals about 3.5 bln US dollars per year.

The cost in direct medical care in Europe totals more than 1.5 bln Euro each year while indirect expenses are similar. The problem of allergic disease in Russia is similar to that. Up to 980 cases of this disease are reported per 100 tsd. population.

In the climatic and geographical conditions in Central Asia and in Uzbekistan, in particular the pollinosis with the rhinitis signs ranks first by the occurrence rate to make 88% cases, on the whole. Conjunctivitis ranks second with the figure of 54.4 %. In most cases all symptoms of pollinosis with rhinitis occur and resolve in the exacerbation stage. Rhinitis is classified into two kinds as follow:

1. Seasonal allergic rhinitis etiologically caused by pollen allergens.
2. Perennial allergic rhinitis. This form of rhinitis is triggered by airborne household, epidermal and other kinds of allergens. When the allergic rhinitis is caused by the house dust, the reason of it may appear as the exposure to dust mite in most cases. However, apart from these two kinds of rhinitis, the practice faces combined types of allergic rhinitis. Due to estimation of their etiological structure, positive results re revealed when in most cases human sensibilization is identified to three types of causative allergens (pollen + household + epidermal).

Rhinitis is classified into three types according to clinical symptoms: mild, moderate and severe.

The following clinical symptoms appear with all three types of rhinitis:

Paroxysmal sneezing followed by the abrupt of nasal breathing difficulty and profuse discharge from nose are reported to appear in most patients to diagnose pollen rhinitis.

Many patients complain on the headache, itching and burning sensation in nasal cavities and eyes, as well as on frequent paroxysmal sneezing.

Sneezing mechanism in such patients is paroxysmal appearing in 20 to 100 and more sneezes one by one. Such a tormenting sneeze occurs all of a sudden and appears several times a day. When this occurs, the health condition of the patient deteriorates and the physician has to render medical help. Such physical condition is considered emergency allergenic.

The sneeze is followed by the abundant watery rheum from nose and the nasal breathing is obstructed. Patient always complain on the stuffiness in nose depending on the allergic edema of the nasal cavity mucosa. The color of the mucosa coating and discharge appearance in patients monitored by our physicians varied in types; the nasal cavity mucosa pattern was bright-red, crimson red, marble-white, of bluish discoloration, pale pink with ischemic traces; excretion pattern: watery, muculent, seromucous.

It can be concluded by the results of our work that the bright red color of the nasal mucosa coating ranks first, the crimson red ranks the second and the remaining coloration is less frequent. Nasal watery discharge is reported in 74 patients of the 125 under monitoring, the muculent discharge (rhinorrhea) is reported in 41 of them, and seromucous appearance is noted in 3 patients.

In parallel with the abovementioned symptoms, the patients also complain on the itching in nasopharynx, ears and hoarse voice. Moreover, signs of pollen intoxication are reported in pollinosis rhinitis, rhino-conjunctivitis, and atopic asthma. Most common symptoms of pollen intoxication in patients with pollinosis include headache, itching and burning sensation in nasal cavity and eyes, paroxysmal sneeze, nasal stuffiness, nasal stiffness. Apart from these intoxication symptoms, patients are reported to develop irritancy, appetite loss, heartquake, asthenia, precordialgia, paroxysmal cough, pallescence, congested pipes, asthma, hidrosis, faintness, tinnitus, abdominal pains, photophobia, body temperature increase occur.

Mild, moderate and severe clinical course vary in expression. In mild run of allergic rhinitis the symptoms and other signs occur only in morning hours and they quickly resolve. Symptoms of pollen intoxication are not visually observed.

Moderate allergic rhinitis is expressed in longer-lasting symptoms. The comfort of well-being disappears, the nasal breathing worsen, and the patient faces insomnia. Intoxication symptoms are relatively expressed. Antihistamine drugs show transient effect.

With the severe allergic rhinitis patients develop paroxysmal sneezing at a rate of 50 to 100 sneeze at a time. The strong rhinorrhea, the abundant discharge from nose, is developed (the patients bring lots of paper tissues on them), strong itching is irritable, the nasal breathing is obstructed in the day time and at night (especially at night) and the patient suffers from insomnia. Sometimes these symptoms are combined with dry coughing and irritation in the throat (pre-acute severe asthma). All symptoms of intoxication are expressed. Antihistamine drugs show no effect anticipated. In most cases in moderate and severe courses the nasal bleeding is observed. This likely occurs due to edema and hyperemia of nasal mucosa coating and nose vessels get easily permeable. In severe allergic rhinitis the rescue emergency care is required.

Differential diagnostics

Rhinitis is categorized into different types, such as allergic, non-allergic (vasomotor rhinitis, infectious, gustative), rhinitis medicamentosa, eosinophilic rhinitis. Below find the clinical differential diagnostics of allergic rhinitis of other types of rhinitis. We hope that upon examining the given table, the clinical allergologist will be able to diagnose allergic rhinitis adequately based upon the case history of allergy.

Below are the examples of different types of allergic rhinitis diagnoses:

- Pollinosis with moderate allergic rhinitis. This is diagnosed when the patient is sensitize only to pollen allergens;
- Perennial moderate allergic rhinitis. Sensibilization to household dust allergens;
- Combined type of severe allergic rhinitis. Sensibilization to household dust and pollen allergens.

Table 6

Clinical differential diagnostics of allergic rhinitis against other forms of rhinitis

Clinical features	Rhinitis form				
	Allergic	Vasomotor	Infectious	Eosinophil	Medicinal
Hereditary load	Definitive	Non-definitive			
Season-specific	Definitive	Non-definitive			
Nasal cavity mucosa coating	Sarcous, hyperemic, edematous	Grey	Hyperemic, edematous	Pale, loose, edematous	Marble-pale
Discharge nature	Serous, aqueous-muculent	Serous or muculent	Mucopurulent	Serous	Aqueous-mucu-lent
Peripheral blood eosinophilia	Increase up to 30% is typical	Non-definitive			
Results of skin tests for non-bacterial allergens	Positive	Negative			
Combination with other allergic diseases	Typical. Concurrency with conjunctivitis. Rarely with other allergic diseases	Non-definitive			
Availability of allergen-specific IgE in blood	Definitive	Non-definitive			
Efficacy of anti-allergenic treatment modalities	considerable	No or insignificant result			

Allergic conjunctivitis

Exposed to the causative allergen, the mucosa of the eye conjunctiva is congested, becomes dropsical, itches and watered. In circumstances where the climate is hot, the weather is sunny and dry lasting 8 to 9 months per year, the pollinosis with various clinical symptoms, in general, and allergic conjunctivitis, in particular, is enduring enough,

with violent clinical symptoms. Allergic conjunctivitis quite often runs with rhinitis (rhino-conjunctivitis). School-aged children often suffer from this pathology, and adolescents aged 15 to 30 rank second.

Allergic conjunctivitis is categorized into two types: seasonal and perennial which differ in causative bacterial allergens. The seasonal pollinosis conjunctivitis is mainly caused by pollen allergens, while perennial allergic conjunctivitis is provoked by the household, epidermal, insect-caused, moldy and yeasty, dietary allergens and medicament allergens, as well as air allergens. The disease occurs upon the contact with the offensive allergen, and in most cases it is followed by rhinitis.

The symptoms are usually worse for patients during the blossoming period, when the weather is dry and windy, as well as during stay in the suburban area and in other areas rich in blossoming trees and plants. The acute redness, eyelid and eye-bulb hyperemia are reported. Children often lose performance efficiency since they experience acute photophobia. Under the conditions of the hot climate this event occurs quite often and appears the distinguished symptom of allergic conjunctivitis. Patients state their grievances on itching and burning sensation in the inner angle of the palpebral fissure that spread along the eyelids followed by the feeling of tension and pain. When examined, these patients are reported to have eyelid conjunctiva and eyes swelling and hyperemia. Eye discharge is muculent. The lacrimation is sometimes excessive that stimulates the patient to have the kerchief on hand.

The run of the perennial conjunctivitis is of cyclic origin, if not caused by pollen allergens. The exacerbation phase smoothly turns to the disease-free survival. This event depends on the contact with household and epidermal allergens.

In cases when the allergic conjunctivitis is associated with other allergic diseases apart from rhinitis, the symptoms that develop show as severe with signs of pollen intoxication. Based on the popular literature, the conjunctivitis is divided into edematous caused by inhalation allergens, and follicular that relate to the cell-mediated tissular lesion mechanism, for instance, contact-associated, drug-associated, endogenous, microbial and alimentary.

We tend to term all types of conjunctivitis due to allergy causative allergens, for example, pollen-caused conjunctivitis due to medical allergy with Lyell's syndrome, so called drug-induced conjunctivitis, etc.

Rhinoconjunctivitis

Rhinitis is quite often combined with conjunctivitis which, according to our data, rates 37.6% cases. Due to such combination of diseases the symptoms appear moderate and severe. Mild run of the disease is far rare. In moderate run of the rhinitis clinical symptoms are categorized into two groups: sneeze, rhinorrhea, nasal cavity itch and other evidences. Nose stiffness develops at night, nasal breathing slightly worsens and sleep disturbance is reported. Except these symptoms, sharp redness, eyelid and eyeball hyperemia develop. Patients complain on itching and stinging around eyes, the feeling of tension and pain, tearing in abundance. True life comfort disappears.

In severe rhinoconjunctivitis, the patient is reported to experience sneezing attacks termed as paroxysmal. The frequency of sneeze is rated at 50 to 100. A strong rhinorrhea (nasal discharge) is reported. The patient is disturbed with the strong itch, and the nasal breathing is obstructed, especially at night. In parallel with clinical symptoms of rhinitis evidence, clinical signs of conjunctivitis intensify, such as eye itching and stinging, phengophobia, heaviness around eyes and excessive tearing. The patient loses performance capability. Sometimes these symptoms are strengthened with the dry cough and throat irritation. Such patients need emergency care. These patients are diagnosed with pollinosis with symptoms of allergic rhinitis and allergic conjunctivitis, with positive results to pollen allergens.

Therefore, combination of allergic rhinitis with other allergy signs (conjunctivitis, urticaria, the Quincke's oedema, neurodermatitis, and bronchial asthma) is always reported as moderate and severe. Alongside with such exasperation of allergic rhinitis symptoms, evidences of the added allergic reaction enhance.

Atopic form of pollinosis-induced asthma

The section related to atopic bronchial asthma describes in detail all forms of its manifestation. This section only describes the combined severe form of pollinosis-induced bronchial asthma.

According to our observations, in the context of the hot climate in Central Asia the combined form of pollinosis-induced atopic asthma is

often observed in children and in most cases it is combined with rhinitis, conjunctivitis and dermatosis.

In combination of pollinosis-induced bronchial asthma, rhinitis and conjunctivitis with dermal evidence, the rashes appear on the face sides, cubital fossa and popliteal space, and in the forearm.

Alongside with asphyxia signs and rhinitis patients feel lesion focuses in the skin and strong itching and burning. In such patients pollinosis runs to become severe. Episodes of atopic bronchial asthma occur seasonal in our region. Frequently episodes appear and end suddenly with the violent course. Broncholytic drugs are effective to resolve asthma episodes. Pollinosis-induced bronchial asthma in almost all cases is associated with any other allergic disease, often with rhinitis.

Such patients are diagnosed with pollinosis followed by evidence of atopic bronchial asthma, rhinitis, conjunctivitis and neurodermatitis. The disease runs in severe form. The test result is positive to pollen allergens.

Memo for practitioners:

- Overall control of all management types;
- Elimination therapy. With the purpose to increase the treatment efficiency it is required to eliminate or restrict, to the highest extent, the contact of the patient with causative allergens. All instructions of the referring doctor should be followed and complied.

One of the prioritized issues in allergology is subsequent sophistication of therapeutic modalities related to allergic diseases in general and pollinosis, in particular.

With a view to special climatic and geographical conditions of the region we faced the challenge to elaborate and implement new advanced techniques of non-medical and specific immunotherapy, which depend upon long-term period of plant blossoming (8-9 months) and short winter period. Starting from early spring and to the period of frost (end of November), patients are disturbed with symptoms, and they often seek medical help of specialists, while they tend to ignore such help during remission period. Such behavior is typical to any human being. And this is one of factors why we elaborated the system of innovative techniques of non-specific and specific therapy each year. This therapy is elaborated and is used in clinical allergology practice for over 20 years.

These therapeutic modalities are divided into three groups:

- Non-medicinal;
- Medicinal;
- Allergen-specific immunotherapy.

NON-MEDICAL MODES OF TREATMENT

Elimination therapy. The allergology specialist contributes to restrict the contact of the patient with pollinosis with causative non-bacterial allergens. The patient should stay at home in dry and windy weather, and visit places out of town where there is abundance of blossoming trees. The rooms where the patient stays should be tidied and cleaned wet 3 to 4 times a day, wiping out dust and take away all items collecting dust (carpets, books, toys, etc.), as well as pets (cats, dogs, rabbits, etc.).

The patient should wear garments made from cotton, not synthetic textile, and sometimes the patient with allergic conjunctivitis and rhinitis of pollinosis origin is assumed to wear safety masks and special goggles.

With the identified allergen, that is considerable pollen allergen is revealed, the patient is better move to the place where such trees and vegetables do not grow. Apart from these measures, the patient should comply to hypoallergenic diet.

Aeroionotherapy is performed using Chizhevsky chandelier altogether with the respiratory gymnastics Tai Chi Chuan.

The gymnastic exercises are made with only nasal breathing. Aeroions effectively impact the "shock" organs of nose and eye mucosa. Within 18 days the patient performs the respiratory exercises and at the same time the SIT-course is started.

Among non-medical therapeutic modalities, the acupuncture lately keeps the special niche. However, it is not well spread in treatment of pollinosis.

We would like to emphasize that we strictly disagree with any kind of pessimistic thoughts and distrustful attitude to this therapy procedure. We have been employing in acupuncture technique for over 28 years. Throughout this period this technique proved its high efficiency to treat seasonal and perennial allergic rhinitis, rhinoconjunctivitis and other allergic reaction evidences.

On the next day after the procedure patients reported on some relief, and 6-7 sessions later all symptoms of the diseases resolve. Besides,

the acupuncture efficiency is several times as much as that of the basic pathogenic treatment by SIT. During the acupuncture procedure the patient does not administer antihistamine drugs and glucocorticosteriods.

Thanks to the acupuncture efficiency patients with allergic diseases of any origin are easily arranged for the allergy tests and follow-up SIT. The acupuncture technique is preferred to use due to various factors:

- The patients quickly recovers from pain; he is delivered true life comfort;
- No complications exist as compared with the medicinal therapy;
- No necessity to provide treatment with expensive medicinal drugs;
- The therapy efficiency is long-lasting and stable; the patient is delivered the overall immune system recovery;
- Hormone-resistance and hormone-dependency in patients are eliminated

Table 7

Points commonly used to treat pollinosis-induced, seasonal and perennial rhinitis (00)

Meridian	The point name and the meridian number
Large intestine	Ying Xiang (LI 20)
Urinary bladder	Mei Chong (UB 3)
	Qu Cha (UB 4)
	Tong Tian (UB 7)
	Zhi Yin (UB 67)
Governing Vessel	Bai Hui (GV 20)
	Shang Xing (GV 23)
	Shui Gou (GV 26)
	Dui Duan (GV 27)
Extra points	Sanjiao (17)

Table 8

Points commonly used to treat seasonal and perennial nose stiffness

Meridian	The point name and the meridian number
Large intestine	He Gu (LI 4) Yang Xi (LI 5) Pian Li (LI 6) He Liao (LI 19) Ying Xiang (LI 20)
Stomach	Ju Liao (ST 3) Zu San Li (ST 36) Nei ting (ST 44) Li Dui (ST 45)
Heart	Shen Men (HT 7)
Small intestine	Shao Ze (SI 1) Qian Gu (SI 2) Hou Xi (SI 3) Wan Gu (SI 4)
Urinary Bladder	Mei Chong (UB 3) Qu Cha (UB 4) Tong Tian (UB 7) Wei Zhong (UB 40) Jing Gu (UB 64) Zhi Tin (UB 67)
Kidney	Tong Quan (KD 1)
Pericardium	Xi Men (PC 4) Nei Guan (PC 6)
Triple Burner	Erhe Liao (TH 22)
Governing Vessel	Yan Men (GV15) Feng Fu (GV 16) Bai Hiu (GV 20) Xian Ding (GV 21) Qin Hui (GV 22) Shan Xin (GV 23) Sheng Ting (GV 24) Su Liao (GV 25) Zheng Zhong (GV 26) Dui Duan (GV 27)
Extra points	Yin Tan (EP 3) Er Qian (EP 10) Shang Yin Xian (EP 14) Xia Bi (EP 15) Bi Lu (EP 16) Xian Xiao (EP 17)

Таблица 9

Points commonly used to manage rhinitis with nasal bleeding

Meridian	Point name and meridian number
Lung	Tian Fu (LU 3) Yu Qi (LU 10)
Large Intestine	He Gu (LI 4) He Liao (LI 19) Ying Xiang (LI 20)
Stomach	Ju Liao (ST 3) Nei Ting (ST 44) Li Dui (ST 45)
Small intestine	Shao Ze (SI 1) Qian GU (SI 2) Hou Xi (SI 3)
Urinary Bladder	Wei Zhong (UB 40)
Kidney	Tong Quan (KD 1)
Pericardium	Xi Men (PC 4)
Governing Vessel	Ya Men (GV 15) Xin Hui (GV 22) Su Liao (GV 25)

Table 10

Points commonly used to treat allergic conjunctivitis

Meridian	Point name and meridian number
Lungs	Jing Qu (LU 8) Shao Shang (LU 11)
Large intestine	Yanf Xi (LI 5)
Stomach	Cheng Qi (ST 1) Si Bai (ST 2) Tou Wei (ST 8) Zu San Li (ST 36)
Urinary Bladder	Jing Ming (UB 1) Zan Zhu (UB 2) Mei Chong (UB 3)
Kidney	Heng Gu (KD 11) Da He (KD 12) Si Man (KD 14) Zhong Zhu (KD 15) Huang Shu (KD 16) Shang Qu (KD 17)
Triple Heater	Wai Guan (5)
Gall bladder	Tong Zi Liao (GB 1) Yang Bai (GB 14) Mu Chuang (GB 16)
Liver	Xing Jian (LV 2)
Governing Vessel Meridian	Feng Fu (GV 16) Nao Hu (GV 17) Bai Hui (GV 20) Yin Jiao (GB 28)

Table 11

Auricular points commonly used to treat seasonal and perennial rhinitis and conjunctivitis

Russian names of points	Chinese names of points and meridian number
Eyes, first	Yang (AP 8)
Adrenal gland	Shen-Shan-Xian (MA-T 13)
Nasal cavity	Nei Bi (AP 16)
Endocrine glands	Nei Feng Mi (MA-IC3 22)
Brain stem	Naogan (AP 25)
Breath regulating (Asthma Point)	Ping Chuang (AP 31)
Forehead	He (AP 33)
Sympathetic nervous system (Vegetative Point)	Jiaogan (MA-AH7 51)
Central Nervous System point (Spirit Gate)	Sheng-Meng (AP 55)
Diaphragm (Point Zero)	He (AP 82)
Bifurcation Point (solar plexus point by P.N.)	Chi Qian (AP 83)
Large intestine	Da Chang (AP 91)
Kidney	Sheng (MA-SC 95)
Liver	Gan (AP 97)
Lung	Fei (MA-IC1 101)
Nose and eye	Bian Jin (AP 111)

Below find the procedure elaborated by us to effect corporal and aurical points that is used in treatment of seasonal and perennial rhinitis and conjunctivitis. The acupuncture procedure proved to be twice as more effective to treat various types of rhinitis and conjunctivitis when applied to auricular points.

Day 1

GV 25 Acupuncture Point - Su Liao (White Bone-Hole), the point is located on the tip of the nose. This is effective to treat nose stiffness and nasal bleeding and rhinitis.

GV 26 Acupuncture Point - Shui Gou (Water Trough). The point is located at the junction of the upper and middle third of the philtrum. This is used to treat respiratory diseases, nose stiffness, rhinorrhea.

SI 3 Acupuncture Point - Hou Xi (Back Ravine). This point is located at the ulnar end of the distal palmar crease proximal to the 5th metacarpal phalangeal joint. This is used to treat pollen intoxication, rhinitis and nasal bleeding. It expels exterior pathogenic factors, removes obstructions from the channel and vessels, relaxes muscles, and clears mind.

ST 36 Acupuncture Point - Zu San Li (Leg Three Li). The point is located 3 cun below ST35, as it was mentioned above, one finger width lateral from the anterior border of the tibia. This is the point to treat 100 diseases.

Day 2

LI 19 Acupuncture Point - He Liao (Grain Bone Hole). It is located just below the lateral border of the nostril level with GV 26. This is used to treat acute and chronic rhinitis, odor sense disturbance, and nasal bleeding.

LI 4 Acupuncture Point - He Gu (Union Valley). This point is located in the center of the 2nd metacarpal bone on the radial side. It is used to manage rhinitis, bronchial asthma, asphyxia, shortness of breath, sputum expectoration, and tinnitus.

LI 5 Acupuncture Point - Yang Xi (Yang Ravine). It is located on the radial side of the wrist in a depression between the extensor pollicis longus and brevis tendons. It is used to manage rhinitis, conjunctivitis and pollen intoxication.

Day 3

LI 20 Acupuncture Point - Ting Xiang (Welcome Fragrance). This point is located in the nasolabial groove, level with the center of the lateral margin of the ala nasi. This is used to treat labored breathing, nose stiffness, nasal polypus, seromucous discharge and bleeding in the nose, odor sense losing.

LI 6 Acupuncture Point - Pian Li (Veering Passageway). This point is located 3 cun above the crease of the wrist on LI 5 to LI 11 line. This is used to treat seromucous discharge from nose.

ST 45 Acupuncture Point - Li Dui (Severe Mouth). This point is located 1 cun posterior to the corner of the nail on the lateral side of the 2nd toe. This is effective in nasal bleeding, as well as to treat sore throat and tonsillitis.

HT 7 Acupuncture Point – Shen Men (Spirit Gate). This point is located at the wrist crease, on the radial side of the flexor carpi ulnaris tendon, between the ulna and the pisiform bones. This point is effective to manage rhinitis and tonsillitis.

Day 4

LU 8 Acupuncture Point – Jing Qu (Channel Ditch)

UB 3 Acupuncture Point – Mei Chong (Eyebrow Ascension)

ST 44 Acupuncture Point Nei Ting (Inner Court)

All these points are effective in seromuculent nasal discharge, nasal bleeding, conjunctivitis and tonsillitis.

Day 5

EX Acupunture Point Tintang (Hall of Seal). This is located in the center between the medial ends of the eyebrow. This is the effective point to treat nose and eye disorders.

SI 1 Acupuncture Point – Shao Ze (Lesser Marsh). This point is located 1 cun posterior to the corner of the nail on the ulnar side of the little finger. This is effective in nasal bleeding relief.

SI 4 Acupuncture Point – Wan Gu (Wrist Bone). The point is located on the ulnar side of the palm in a depression between the base of the metacarpal joint and the hamate bone. This point is effective to manage predisposition to inflammatory processes and allergic rhinitis.

UB 64 Acupuncture Point – Jing Gu (Capital Bone). The point is located below the tuberosity of the 5th metatarsal bone at the junction of the red and white skin. The point is effective to treat nose and eye disorders.

Day 6

UB 2 Acupuncture Point – Zan Zhu (Bamboo Gathering). The point is located on the medial end of the eyebrow, just above the inner canthus of the eye. This expels exterior pathogenic factors, especially wind and heat, strengthen eyes, regulates lacrimal secretion. It is effective to treat conjunctivitis, eye tearing and facial edema.

LU 11 Acupuncture Point – Shao Shang (Lesser Shang). The point is located 1 cun posterior to the thumb nail on the radial side. This point is used to manage allergic diseases.

UB 67 Acupuncture Point – Zhi Tin (Reaching Tin). It is located 1 cun posterior to the corner of the nail on the lateral side of the little toe. This point is used to treat nose stiffness and eye disorders.

EX 16 VI Bailao (Hundred Labors). Indications include rhinitis, rhinorrhea, nose stiffness.

Day 7

EX 15 Jia Bi (Heaven Column). Indications: various forms of rhinitis, including allergic rhinitis.

TH 23 Acupuncture Point – Sizhu Kong (Silk Bamboo Hole). The point is located in a depression at the lateral end of the eyebrow. It is used to manage eye disorders and conjunctivitis.

KD 15 Acupuncture Point – Zhong Zhu (Central Flow). Indicated for treating conjunctivitis.

KD 16 Acupuncture Point – Huang Shu (Huang Shu). This point is located 5 cun lateral to CV 8. It is indicated to treat hyperemia and conjunctivitis.

KD 11 Acupuncture Point – Heng Gu (Pubic Bone). The point is located 5 cun below CV 8 and 5 cun lateral to CV 2. It is indicated to treat eye disorders.

Day 8

TH 23 Acupuncture Point – Sizhu Kong (Silk Bamboo Hole)

ST 45 Acupuncture Point – Li Dui (Severe Mouth)

LU 3 Acupuncture Point – Tian Fu (Celestial Storehouse)

LU 10 Acupuncture Point – Yu Ji (Fish Border)

All these meridian points are indicated to be stimulated to treat eye disorders, conjunctivitis, nasal bleeding and rhinitis.

Day 9

GV 16 Acupuncture Point – Feng Fu (Wind Mansion). The point is located 1 cun just above the center of the PHL, below the occipital protuberance on the posterior midline of the head. This is indicated to treat nasal bleeding and chronic rhinitis.

GV 15 Acupuncture Point – Ya Men (Mute's Gate). The point is located 5 cun above the midpoint of the PHL in a depression just below the spinous process of C1. This point is effective to treat rhinitis.

GV 20 Acupuncture Point – Bai Hui (Hundred Convergences). This point is located 5 cun posterior the AHL. It is indicated to treat eye disorders.

Day 10

GV 25 Acupuncture Point – Su Liao (White Bone-Hole). This point is located on the tip of the nose. It relieves nose stiffness and nasal bleeding and rhinitis.

GV 26 Acupuncture Point – Shui Gou (Water Trough). This is located at the junction of the upper and middle third of the philtrum. This point is effective to treat respiratory diseases, nose stiffness and rhinorrhea.

TH 5 Acupuncture Point – Wai Guan (Outer Pass). The point is located 2 cun above TH 4 between the radius and the ulna on the TH 4 – TH 10 line. This benefits eye functions and treats catarrh of upper respiratory.

ST 36 Acupuncture Point – Zu San Li (Leg Three Li). This point is located one finger width lateral from the anterior border of the tibia. This is one of the most versatile and most commonly used acupoint; it regulates the circulation of Qi and blood; regulates the intestines, stabilizes the mind and emotions; strengthens Food Qi.

KD 6 Acupuncture Point – Zhao Hai (Shining Sea). The point is in a depression below the tip of the medial malleolus. Opens and wets throat.

Below is the procedure used for auricular acupuncture.

Day 1

8 I Yang (eyes, first (Yang)) and 13 II Sheng Shan Xian (adrenal gland)

Day 2

16 II Nei Bi (nasal cavity) and 22 IV Nei Feng Mi (endocrine glands)

Day 3

25 V Nao Gan (Brain Stem) and PT 31 VI Ping Chong (Breath Regulating)

Day 4

MA-AT 33 E (forehead) и MA-AH7 51 IX Jiaogan (Sympathetic nervous system)

Day 5

MA-TF1 55 X Shen Men Central Vervous System) and MA-SC4 91 XIV Da Chong (Large Intestine)

Day 6

MA-SC 95 XV Sheng (Kidney) and MA-SC5 97 XV Gan (Liver)

Day 7

MA-IC1 101 XVI Fei (Lung) and AP 111 XVIII Bian Qin (Nose and Eye)

Day 8

AP 82 XIII He (Diaphragm) and AP 83 XIII Chi Qian (Bifurcation Point)

Points commonly used to manage exigent condition in rhinitis and rhinoconjunctivitis

During the blossoming period patient often seek medical help at clinics suffering from severe rhinitis symptoms, paroxysmal sneezing 30 to 100 times and more a day and excessive nasal discharge. In such conditions the patient loses the performance efficiency, and the acupuncture technique is effective in here to render emergency care by stimulation of 25 XIII and 26 XIII acupoints for 2 to 3 minutes. This procedure helps suspending the severe symptoms of rhinitis. These both points refer to Governing Vessel Meridian.

It is proved in practice that rhinitis is often followed by conjunctivitis (rhinoconjunctivitis). When severe forms of rhinoconjunctivitis is observed, two more acupoints are stimulated in addition, that is 23 X and 2 VIII. Thus, when rhinitis and conjunctivitis symptoms develop concurrently, the good effect is achieved to resolve the severe symptoms.

Electrophoresis. Alongside with non-medicinal (drug-free) therapeutic modalities the treatment includes the nasal electrophoresis, either, mainly, at initial stage of therapy. The electrophoretic method of treatment is used with and without phitotherapy. In such severe cases the medical drug Sinupret is very effective. SIT procedure can also be done with the electrophoretic method (See Chapter I – Non-medicinal Methods to Treat Allergic Diseases).

Drug therapy

The practitioners face the challenge to resolve clinical symptoms that develop during this period and manage patients to perform allergic tests and identify adequately the causative and offensive allergens.

During the period when allergic rhinitis and conjunctivitis exacerbate, including severe forms of atopic bronchial asthma, the medical personnel in our clinics avoid using calcium-based agents (calcium chloride, calcium gluconate, and so on), and sodium thiosulfate, but most general practitioners, pediatricians, ENT-specialists, dermatologists and even sometimes allergists tend to prescribe such medication. In the meantime, such medication is not acceptable to treat allergic diseases, since they cause only insignificant and transient effect.

Several years passed since we quit using histoglobulin, since due to its albuminous compound this agent often brings to exacerbation of the disease and does not allow performing diagnostic dermal tests to identify causative allergen.

In some severe cases we prefer using, among hormone-dependent and hormone-resistant agents, non-medicinal preparations, including Intal, Tilade and other agents that inhibit degranulation of mast cells, such as cromoglycates - Lodoxamide. Among the antihistamine drugs we prefer using drugs of I generation, such as Phencarol (Quifenadine), Tavegyl (Clemastine); the II generation drugs include Loratadine, Astemizole, Kestine (Ebastine) administered by courses.

Telfat (Fexofenadine), the III generation antihistamine drug, that appeared lately, was found effective to manage allergic diseases of any severity. A single dose of 120-180 mg is taken orally once a day. Mainly, we recommend the medicinal therapy during SIT procedure. Such agents as Hay-Crom, aparts from cromoglicic acid, cromoHEXAL, Opticrom Aqueous are used topically. In allergic conjunctivitis such drugs as Alomide (Lodoxamide), Lecrolyn and others are recommended.

During SIT procedure we use a range of agents as follow:

- Ketotifen (Zaditen) for 3 months and more;
- Aerius (Desloratadine) – 1 tablet a day for adults;
- Zodak (Cetirizine) 20 mg – 5 drops two times a day in the morning and evening for children, and 1 tablet once a day for adults;
- Kestin (Ebastine) – 1 tablet a day. This drug does not have a sedative effect, does not alter the concentration and is not drug-dependent;

- Flutinex and Nasonex are recommended in severe forms of allergic rhinitis once a day topically.

Allergen-specific immunotherapy

Allergen-specific immunotherapy (ASIT) is the procedure to be performed by the qualified specialists who are aware with the methods of rendering assistance with side effects. These specialists should be equipped properly with the standardized vaccine-allergens. ASIT is usually performed during the remission period and after rehabilitation of focal infection. Immunotherapy is performed as soon as the offensive allergen is identified according to the medical history, clinical examination and specific allergology tests (dermal, provocative and immunological). ASIT is more effective in respiratory allergosis which is caused, mainly, by the IgE, reaction of type I (atopy).

ASIT increases the efficiency of non-medicinal therapy, especially acupuncture procedure, twice as much if performed adequately. ASIT performed concurrently with the antihistamine drugs may camouflage mild allergic reaction and further it may result in severe systemic reactions and even the shock. The exception is Cromoglin which is administered 30 minutes prior to allergen injection throughout the overall treatment course.

Most investigators rate the ASIT results by five-grade scale: considerable improvement or recovery – 5; improvement – 4; insignificant improvement – 3; no changes if health state – 2; health condition worsening and new symptoms development – 1.

While the results are estimated by clinical parameters, the frequency and prevalence of the most common symptoms are rated, such as sneezing, nose stiffness, itching, nasal discharge, as well as worsening period duration, loss of performance efficiency, and drug administration.

New Advanced Method of Specific Immunotherapy of Pollinosis

One of the most effective methods of pathogenetic therapy of pollinosis is specific immunotherapy with allergens which are found causative by methods of allergic diagnostics. Parenteral, oral and inhalation methods of specific immunotherapy are recommended.

Three decades ago the new advanced method of specific immunotherapy was elaborated in the Republican Clinics of Allergology that considers the degree of sensitiveness in patients. However, this method has drawback: the treatment course lasts from 1.5 to 3 months and with the high sensibilization the specific immunotherapy procedure was impossible to complete until the blossoming period. This caused difficulties and problems for patients who had to be injected a lot. Taking these factors into consideration and especially the climatic conditions in Central Asia, we implemented new shortened in t period patterns of specific immunotherapy in practice.

Pattern 1 – Specific immunotherapy with high sensibilization degree: on a daily basis, three injections at 10^{-14} to 10^{-7} per each dilution (0.3; 0.6; 0.9 ml); four injections at 10^{-6} to 10^{-4} (0.2; 0.4; 0.6; 0.9 ml); five injections at 10^{-3} to 10^{-2} (0.1; 0.3; 0.5; 0.7; and 0.9 ml); 5 injections at 10^{-1} (0.1; 0.2; 0.3; 0.4; and 0.5 ml). The maintenance dose at 10^{-1} (0.5 ml) subcutaneously, the course duration is 45-54 days.

Pattern 2 – Specific immunotherapy for patients with moderate sensibilization degree: on a daily basis, three injections at 10^{-} to 10^{-6} per each dilution (0.3; 0.6; 0.9 ml); four injections at 10^{-5} to 10^{-2} (0.2; 0.4; 0.6; 0.8 ml); five injections at 10^{-1} (0.1; 0.2; 0.3; 0.4; 0.5 ml). The maintenance dose at 10^{-1} (0.5 ml) subcutaneously. The course duration is 1 month.

Pattern 3 - Specific immunotherapy for patients with mild sensibilization degree: on a daily basis, four injections at 10^{-5} to 10^{-4} per each dilution (0.2; 0.4; 0.6 and 0.8 ml); five injections at 10^{-3} to 10^{-2} (0.1; 0.3; 0.5;0.7 and 0.9 ml); five injections at 10^{-1} (0.1; 0.2; 0.3; 0.4; 0.5 ml). The maintenance dose at 10^{-1} (0.5 ml). The course duration is 23-25 days.

Hereinafter, the maintenance therapy is performed as for out-patients: once in the 1st, 2nd, 3rd weeks and during 1st month by 0.5 ml allergen diluted at $1:10^{-1}$. Prior to treatment, patients should be managed to specific immunotherapy taking into account all contraindications and indications.

ASIT is recommended on an annual basis using pollen and other non-bacterial allergens under control of non-medicinal and medicinal therapies. The results of treatment were estimated based on the prospective follow-up, onjective examination and observations diary data which is recommended to keep within three years.

Below is one of examples to perform SIT in pollinosis of accelerated method. The procedure was performed in 74 (59.2%) patients and the electrophoretic method was used in 51 (40.8 %). The SIT efficiency totaled 89 and 60 % respectively, that is in 112 patients out of 125 revealed excellent, good and satisfactory results: excellent results in 54 (43.2±4.4) patients, good - 33 (26.4±3.9), satisfactory - in 25 (20.0±3.5), poor – only in 13 (10.4±2.7).

The efficiency of accelerated and electrophoretic methods was justified based upon clinical and scientific investigations. The comparison of the therapeutic results (excellent results combined with good and satisfactory results), statistically reliable ($P < 0.001$).

All patients who received the new therapeutic procedures to treat allergic diseases are under monitoring within 3 -5-10-15-20 years. They completely recovered to return their working capacity. In the clinic every single patients is exposed to new methods of therapy within 3 years. As for severe hormone-dependent and hormone-resistant cases of bronchial asthma, the rehabilitation treatment course lasts for 5 years. The accelerated therapy consists of IV courses, while the preventive therapy also consists of IV courses.

Patients attend preventive courses twice a year, that is every 6 months. They predominantly receive non-medicinal therapy procedures.

ASIT is performed recurrently every year and consists of III courses. Two more additional courses are performed in severe bronchial asthma.

This form of recovery completely proves its worth and the results rated as excellent make more than 90% cases. Patients are thoroughly examined at the last final course period. Patients are also informed and questioned on their future life and activity. With the purpose of the follow-up period, patients are recorded in the Recovery Logbook indicating the domicile and telephone numbers (home, service and mobile).

Therefore, the recommended new methods of therapy of all kinds of allergic diseases prove to be effective, simple, available, and they are easy to apply in all climatic conditions of the world.