

4. Pattern – strictly individual.
5. Method of immune system recovery is differentiated, rational, complex, in combination of drug-free and medication therapies and allergen-specific immunotherapy.
6. Continuity and succession are absolute at all stages of immune system recovery.

Every subsequent stage of immune system recovery should be commenced with regard to results obtained at the previous stage.

Consequently, every patient with any particular allergic disease is treated for 3 to 7 years. Such approach to treat allergic diseases and bronchial asthma in particular, brings to positive effect in 90-95% cases.

The duration of every treatment regimen is 18 days with the certain interval specified as follows:

- Regimen I and II - 10 days
- Regimen II and III - 1 month
- Regimen III and IV - 3 months

The preventive treatment is performed upon completion of the Regimen IV every half a year.

The interval between the treatment regimens depends on individual tolerance and other features, which is considerably shortened for people with severe allergic diseases.

During the Regimen I all and any acute and severe clinical symptoms of allergic reactions resolve and the patient is wholly arranged for the dermal and provocation tests.

Tests to diagnose any allergy are performed upon all clinical signs resolve. In cases when the patient administers any antihistamine drug, the tests to diagnose allergology are performed in 25 days, and if the patient is on corticosteroid therapy, tests are done in 2-month period.

During the Regimen I, and Regimen II, if required, the combination treatment is applied, that is medication and non-medication therapy techniques are used.

## Chapter 2

### **ALLERGIC ITCHING DERMATOSIS, ALLERGIC DERMATOSIS**

Allergic itching dermatosis is the most common group of diseases in the structure of skin disease in childhood, caused by the anomaly of the constitution. This pathology manifests itself in the form of exudative diathesis. Unfortunately, due to the increase in allergic diseases according to neonatologists, almost every second child is born with different types of anomalies of constitution. Among them, exudative diathesis prevails. L.V. Luss (1998), while studying the prevalence of allergic dermatosis, found that allergic disease comprise 7 to 73%. It refers to both adults and children.

Among allergic skin diseases in children atopic dermatitis is one of the common problems, incidence of which, according to epidemiological studies, ranges from 17 to 25%. According to A.G. Shamova and et al. (2006), the prevalence rate of atopic dermatitis in different countries ranges from 1 to 30%. In the climatic conditions of Central Asia, allergic dermatosis is more common in children and ranks the third following the respiratory allergies and pollinosis, which is characterized by polymorphism, stage progression and development of associated pathological changes in various systems of the growing organism.

The results of the study of the allergic disease prevalence in children in some areas of Central Asia have shown that among the identified allergic diseases allergic dermatosis amounts 26.7%. Accordingly, before describing new methods of treatment, we'd better briefly discuss the clinical presentation of different types of allergic dermatitis (neurodermatitis, strophulus, eczema, allergic dermatitis, urticaria fever, Quincke's edema, Hebra's prurigo). As mentioned earlier, the basis of all allergic diseases is an anomaly of the constitution, i.e. diathesis.

### **Exudative diathesis**

Exudative diathesis means "go out" in Latin. Major contributions in this problem investigation were made by M.S. Maslov, G.N. Speranski, J.F. Dombrovskaya, V.A. Tabolin and etc. It should be emphasized

that M.S. Maslov has devoted 30 years of his life to the diathesis study. He identified eight varieties of it, out of which the most common are exudative, lymphohypoplastic, and neuro-arthritis ones.

The term "diathesis" in Greek means the predisposition of body reactivity form, characterized by specific reaction to conventional stimulants, liability to certain diseases, which represent a set of inherited and acquired properties of the body. The concept of diathesis is inseparable from the concept of the body type. M.S. Maslov identifies the concepts "diathesis" and "abnormality of body type". In 1905, A. Cherny described exudative diathesis in his own opinion. "Allergic diathesis" can be considered as a broader and more general term, as proposed by A.D. Ado and Kemmerer.

In the modern sense exudative diathesis is the ability of inheritance conventional to congenital and acquired properties of the body to response to certain external stimulus by hyperreaction from the skin and mucous membranes. Exudative diathesis is caused by genetic factors (genetic burden in 70-80% children), age peculiarities of digestive system and immunological protection, and environmental exposures.

Risk factors could be unfavorable conditions of intrauterine development, fetal hypoxia, perinatal affection of CNS, infectious diseases, massive medication therapy, and nature of infant feeding. Risk factors of exudative diathesis in children are dysbacteriosis and maternity gastrointestinal during pregnancy, gestosis, medicinal therapy during pregnancy, eating habits of the expectant mother and immature artificial feeding for the child. Often parents, or one of them, developed exudative diathesis in their childhood had. Factor contributing to clinical manifestation of diathesis are usually food proteins of cow's milk, as well as eggs, citrus fruits, strawberries, semolina and other cereals. Eggs, strawberries, lemons, bananas, chocolate and fish contain endogenous endogenic histamine liberators.

Exudative diathesis may occur in children who are on breastfeeding if their mothers intake foodstuff mentioned earlier. Clinical symptoms of exudative diathesis sometimes start immediately or within a few days after birth, in many cases from 2 to 3 months of age. For exudative diathesis the triad symptom by M.S. Maslov is definitive: 1. Cradle caps on the hairy part of the head, the increased formation of seborrheic flakes peeling. Milk tetter - redness and peeling of the skin on the cheeks. 3. Intertrigo (diaper rash)- in the skin folds is consistent. The skin in this area is pale, and dry. These children are thin, with long eye lashes; their skin is thin and delicate, reminiscent of greenhouse fruit.

The increased tenderness of the mucous membranes is reflected in the strong and uneven epithalaxia tongue (geographic tongue), changes in the mucous membrane of the oral cavity (stomatitis). Hyperplasia of lymphoid tissue is also reported as clinical manifestation of exudative diathesis. Adenoides and tonsils, lymph nodes are enlarged, and rare do the liver and spleen. The exudative diathesis run is wavy, with acute conditions (exacerbation) due to dietary errors, including from mother's side if the child is on breastfeeding, but may be due to meteorological factors, and co-morbidities.

It is interesting to note the fact that during bronchial asthma exacerbation and other allergic diseases geographic pattern of the tongue is enhanced. Development of allergic reactions in these people is significantly co-related to inherited ability to produce antibodies- reagin of IgE class, when exposed to exogenous allergens (pollen, household dust, epidermal, medications).

Almost all children with diathesis develop allergic itching dermatosis as neurodermatitis, pruritus, weeping and dry eczema, false croup, bronchial asthma and other allergic inherited diseases.

## Lymphohypoplastic diathesis

Lymphohypoplastic diathesis ranks second in the group of allergic and other protracted diseases. Children with lymphohypoplastic diathesis appear to be pale, apathetic, easy to feel fatigue and they cannot tolerate long-term and severe irritation.

These children usually have excess body weight, tissue and muscle tension is reduced, the skin is loose. Subcutaneous fat is excessively developed, and unevenly distributed (predominantly on the abdomen and thighs). Diffuse hyperplasia of lymphoid tissue is typical for lymphohypoplastic diathesis: propensity to lymph nodes hyperplasia, thymus, tonsils, there is proliferation of adenoid tissue. Thymus can be of significant size, causing hoarseness, noisy breathing, throwing of the head during sleep, respiratory distress, status astmatics, asphixia epizodes, and seizures. Such children refer to sickly kids. They often show skin changes, the tendency to frequent and prolonged respiratory infections developing neurotoxicity and violations of microcirculation disturbance. Symptoms manifested to the high extent during lymphohypoplastic diathesis are usually developed at the age of 3-6 years. Later on, manifestations of diathesis gradually get smooth or resolve, although children may have

delay in sexual development. It should be kept in mind that children with lymphohypoplastic diathesis are in the high risk group of infant death syndrome, infection-dependent bronchial asthma and autoimmune diseases.

### **Neuro-arthritic diathesis**

Neuro-arthritic diathesis is characterized by metabolic disorders – purine, lipid, and carbohydrate.

In early childhood such children develop such clinical signs as nutrition and digestion disorders, anorexia, high neural irritability. In later years, vomiting, sometimes becoming acetonemic is typical. Eczema, bronchial asthma are developed. This diathesis predisposes to the development of obesity, diabetes, atherosclerosis, hypertension, arthagra and metabolic arthritis. Urine acid diathesis is characterized by the accumulation of uric acid diathesis and its salts in biological fluids. Oxalic acid disorder is very often with this type of diathesis.

Factors causing allergodermatosis recrudescence are food errors, medication (antibiotics and others), non-bacterial allergens, acute respiratory diseases, infectious processes, cold, nervous factors.

### **Neurodermatitis**

According to our data, including skin lesions of allergic origin the most common atopic dermatitis comprise- 23.4% (33 children out of 141). Mostly children of primary age are affected. Parents are more concerned about chronic skin rash rather than, for example, a respiratory allergosis. In children of younger group (54.6%) lesions appear mainly on the cheeks, forehead, external surfaces of limbs, in the groin and on the buttocks, sometimes they occur on the flexor parts of the limbs. In older children (45.4%) lesions are often observed on the face, neck, back of the neck, elbow and popliteal folds, forearm, inner part of thighs, in the genital area. The rash is usually dry. Moist (without vesiculation) occurred only in individual cases, as a result of result of severe scratching and lasted for short period of time. There was a zone of infiltration with lichenification of brownish-red color. Often it was the inner location of lesion. The peripheral zone of lesion had different pigmentation.

### **Eczema**

We observed true allergic eczema in research purposes with 27 (19, 22%) infants, junior and preschool age children. Strong precipitating factor was food allergens. The clinical picture of true eczema is characterized by a considerable variety and diversity, due to a peculiar disease course.

There have been some observations made at the several stages of true eczema. Erythematous stage is characterized by redness, swelling and itching, microvesicles (intraepidermal) on erythematous background appear, this clinical manifestation of cutaneous process can be called as vesicular stage. Then the bubbles burst and form small point erosion – ekzematous wells which separate serofluid as drops, and then so-called weeping eczema comes up. This stage of clinical performance of eczema is most common in children of very young age. The weaker inflammatory phenomena is, and less the number of bubbles and there is a fine scaly peeling in the affected areas. Some bubbles get dried and form crusts. This is the final stage of formation of crusting. One may observe all stages of the decease (vesicles, crusts and scaling) at the same time in the same patient. There have been cases of some stages prevailing than others. In older children it was observed a transition of eczema to chronic form. In such cases, the affected areas are characterized by infiltration, congestive hyperemia and lichenification. The surface of the affected area peeling is predominant, in small numbers - rash bubbles forming point abrasions and scabs. Itching intensity is different. In all cases, ekzematous process had a tendency to spread, there were cases of affecting (dermhelminthiasis) large areas of skin.

### **Allergic Dermatitis**

Allergic dermatitis ranks third in frequency among all cases of allergodermatosis. Dermatitis is diagnosed in 21 of all patients observed in our practice. Predominantly, allergic dermatitis is revealed in children over five. The allergic dermatitis is known for its clinical chronic recurrent course. Distinct lumps of a range of tiny vesicular cells are observed on the affected area, followed with edema and hyperemia, which dry into thin, slight and slough crusts to create ekzematoid pattern. Long-term treatment of the process results in occurrence of congestive hyperemia, infiltration with lichenification. The involvements are symmetric.

In some cases the recurrence of eczematous allergic dermatitis is reported, as well as after withdrawal of the sensitizer.

## Papular Urticaria

Papular Urticaria is also known as chronic gum-rash, infant purpura, infant prurigo. Papular Urticaria is the allergic dermatosis observed in children, mostly affected within the age from 3 month to 3 years old.

Etiology and pathogenesis are still unspecified, though the basic reasons include food allergy, environment (house dust, woolen and synthetic textile, toys, fur, floss, domestic animals, plants, etc.), insect bites, exposure to several medical products (iodine, bromine, sulfanilamides, antibiotics, amidopyrine, analgesics, and so forth). Among the pharmaceutical products, lately the reason of Papular Urticaria likely appears to be antibiotics. Furthermore, the significant importance of the etiological structure of this disease are gastrointestinal diseases, chronic center of infection, prophylactic immunization toxico-allergic after-effect of infectious diseases in the past.

Practically in all cases Papular Urticaria develops with the active form of exudative diathesis. The definitive skinned out element is the blister with the seropapula in the center, hard by touch, as the millet in size. Erythema and urticarial forms and bullous forms of papular urticaria are possible to occur (L.A. Scheinshlucht, F.A. Zverkova, 1979). These are located on any cutaneous skin area, and seldom – in the face and pilary part of the head. Mucous coats are not affected. The appearance of skin rash look dynamic – in 6 to 12 hours the blister disappears with the seropapula left, then it resolves with some pigmentation on the affected area for some days. In many cases in the center of the papula there is serosanguineous crust instead of the vesicle that occurs due to scratching. The disease is described as being of recurrent run, with the strong paroxysmal itching, scratching, and mild polyadenopathy. The patients are irritant, anxious, whiny, they sleep unduly, suffer from anorexia, dyspeptic disorders, with eosinophilia identify by the total blood count, and anemia. The body temperature is within the normal range, though during the period of new rashes it increases to 37.5-38°C for the short-term period. The complications as impetigo often occur due to scratching.

Histopathology: acanthosis, intercellular and intracellular edema of belemnold layer with formation of tiny cavities in it with serous exudate; edema of the derma papillary layer, perivascular infiltration.

## Urticaria fever and Quincke's edema

Lately urticaria fever and Quincke's edema most frequently occur among all allergic diseases that run with the skin affection. According to our observations, these make 26.95% (38 children of 141 cases): urticaria fever in 14.18% (20) children, Quincke's edema in 12.76% (18). According to the results obtained by M.N. Lessof, the urticaria fever provoked by the foodstuff is more often reported in children than in adults. S. L. Bachna, D.S. Heynera indicate that the urticaria fever occurs in children over five. According to our observations, the urticaria fever occurs at any age due to urbanization growth and runs with various clinical signs.

The rash elements of pale-pink or porcelain-white color of various size are not located in specific area; in some cases blisters are rare and located distantly, while in other cases they form great lesion focuses expanding due to peripheral growth and conjugation (especially in areas subject to irritation). Sometimes the edema is presented too poorly that spots are seen in the face only (urticaria maculosa), and sometimes in the form of the ring (urticaria circinata). The edema can grow to significant extent spreading to the deep of derma and adipose layer, resulting in formation of greater blisters, the so-called giant urticaria. Urticaria hemorrhagica is observed too rare described as the blister with the petechial hemorrhage available in the center or by the periphery of blisters, as well bullous rash with vesication on the blister surface. Sometimes hyperpigmentation develops in the area where blisters resolve. Rash is always followed by itching.

The involvement of respiratory tract mucous coat (larynx, bronchi) with the urticaria fever is manifested as dyspnea and paroxysmal coughing with liquid expectoration; the risk of asphyxia develops with the quickly progressing edema. The stomach mucous coat edema development may result in vomiting, even with some traces of blood; with the intestine involvement, the transient diarrhea occurs.

The disease usually starts all of a sudden and in a range of cases it is accompanied by the general health condition disturbance, such as discomfort, headache, chill, joint pain, body temperature increase to 38-39°, and eosinophilia. In cases of generalized rash the tension in eyebulbs, blear-eyedness and pain in parotid gland are sometimes observed.

There are two forms of urticaria fever: acute form that lasts for several days or one to two weeks, and chronic form that runs with recurrent conditions for many months and even years, with everyday rash, or lucid spaces within different period of time.

## Dermographism (dermographic urticaria)

Of special attention is the form of so-called urticaria (autographism, urticarial dermographism), when a blister-like band appears when the skin is scratched with the nail.

Therewith a particular sequence of events is observed: local cutaneous redness appears in several seconds due to the effect of the irritant, and in 1-3 minutes the red area starts swelling; the edema increases to the highest extent in 3 to 5 minutes, and gradually the edematous skin area becomes wider. Such events can occur in persons with the ordinary form of urticaria.

## Quincke's edema

The clinical symptoms of this allergic disease were first described in 1882 by the German general practitioner Henrich Quincke. The Quincke's edema is named in other words, as giant edema, angio-edema, angioneurotic edema.

This disease is described as sudden development of red neuralgia or diffuse edema of subcutaneous fat and mucous coats. There are two kinds of edema distinguished - allergic and genetic Quincke's edema. According to the literature data, adults at the age after 20 are most susceptible to this disease. However, the observations indicate that any person at any age can experience Quincke's edema, and only infant up to the age of 2 rarely develop this edema.

Table 3

Differential diagnostics of allergic and genetic Quincke's edema

Symptoms	Quincke's edema	
	allergic	genetic
Involvement area	Adipose layer	Subcutaneous fat
Frequency	Often, adults are more exposed	Starting from young age, this family members suffer
Severity and lethal outcome	Rare	Severe, often lethal outcome

Heritability	Non-transmitted	Passed from generation to generation
Anti-allergic treatment	Effective	Non-effective

Types of Quincke's edema and localization areas:

- Quincke's edema, preferred localization - face, eyelids, forehead, lips, tongue
- Quincke's edema - genital organs and extremities
- Quincke's edema of generalized nature - face, genitals, extremities
- Combined type of the Quincke's edema (urticaria and Quincke's edema).

Quincke's edema is manifested as follows: 1) involvement of the adipose layer and mucosa coat, 2) laryngeal edema, 3) abdominal syndrome, 4) neurological disorders. The process of the Quincke's edema is chronic, with recurrences, that occur abruptly in the unknown time.

Subcutaneous fat is affected and such involvement is manifested as the sudden edema that lasts from several hours to several days. The patient feels some tension in the edematous area. The skin itch does not develop since the process is predominantly localized in the subcutis and does not spread to sensory endings of cutaneous nerves. The skin color in the lesion focus is slight pink, sometimes palish. The preferred localization is lips, forehead, cheeks, eyelids, dorsal feet parts, preputial pouch, and scrota. Quincke's edema often reaches the considerable size deforming the area involved. On abruptly occurring, the edema may resolve without a trace, but it may also recur. Quincke's edema develops in the oral cavity mucosa coat, often on the tongue and the tongue swells to the extent that it does not fit the mouth. The process of swallowing and speech are too obstructed. At the same time the soft palate, larynx, lingula and tonsils swell. Reported are the cases of the isolated Quincke's edema in the tonsil area. Sometimes it resembles the catarrhal tonsillitis.

Laryngeal edema occurs in 20-25% of all acute cases of Quincke's edema and presents the high risk and danger for the health of the patient; it may occur simultaneously with other symptoms. The disease is peracute to run. All of a sudden the patient feels shortness of breath, and due to that he becomes anxious; aphonia appears and the face becomes cyanochrous. Sometimes pneumorrhagia is reported due to plural hemorrhage to the

oral cavity mucosa coat, larynx and pharynx. The attack lasts for several minutes to half an hour. Hereinafter the asphyxia ends, though for a while the patient feels some disturbance while breathing as well as some slight hoarseness. When examined physically, the acute edematous tongue, soft palate, tonsils and the kion are observed. During the laryngoscopy the larynx mucosa coat is edematous with some greyish color. The larynx is difficult to examine with the edema of epiglottis and epiglottidean folds. As soon as the asthma attack passes, the affected tissues recover to look as usual. In severe cases the edema develops quickly, the asphyxia increases and the patient may die from the asphyxia if urgent tracheostomy is not performed. Laryngeal edema is sometimes associated with the edema of the tracheobronchial tree, resembling the asthma attack, and with the nasal mucosa (manifested as the acute episode of allergic rhinitis).

In case of abdominal syndrome edema seizes the esophagus, stomach and intestine. The adipose layer edema may not appear which makes the diagnostics difficult. The paroxysm starts with the sharp pain the abdominal area and incoercible vomiting with the discharge of food at first, and then with the light color fluid with the bilis elements. Hyperprochoresis and tympanitis are observed above the edema localization area. Sometimes the enterocleisis is reported due to the significant edema, and the nourishment of the intestine walls is abruptly disturbed. The patient loses a great volume of fluid. The paroxysm ends with the intractable diarrhea, sometimes with blood traces in the result of hemorrhage in the intestine wall. In severe cases when the long-term edema of the intestine wall is observed, followed by the disturbed blood circulation and regular gastric transit, complicated with the effect from conservative therapy applied, the surgery intervention is recommended.

### **Rare forms of allergodermatosis in children**

**Hebra's prurigo.** According to the literate data, Hebra's prurigo can start in the early childhood, most often – in the first year of life. Etiology and pathogenesis of this have been poorly studied up to this day, and it is known that the considerable role in the development of Hebra's prurigo play abacterial allergens, including food-borne allergens. The incidence of such diseases is low, though it should be brought to notice.

### **Below is one of the case records**

A five-year old boy, D.N., was hospitalized to the Clinical Department of the Republican Pediatric Allergology Center. First pregnancy child, with the body weight of 3500.0 g. During the first half of pregnancy she had lots of spicy food in her diet and during the second half of her pregnancy, she experienced neurodermatitis. The child is hereditary tainted: his grandmother suffers from eczema, and his mother – from neurodermatitis. The child was on breast-feeding up to the year of his life. Until he was 8-months old, his skin was clean, and a bit later he experienced exudative diathesis in his face, neck and the head, which was then spread on the whole body. The dermatologist diagnosed him with the infantile eczema. The child was recommended to administer antihistamine drugs, and apply topically Demerol ointment and bur marigold. These therapeutic procedures were of temporarily effect. Some days later the diseases recurred.

The child received the treatment in hospital conditions and was taken to the health resort to improve health. He was discharged from the hospital with severe edema again. His health state improved a little as soon as he was given flucinar in a month. That was the time when the child was diagnosed with Hebra's prurigo. The child was on Tavegil, Vitamins B6, B12, and Polcortolone in spray for topic application. The treatment regimen appeared to be ineffective. At the age of one year and a half the boy experienced lymph nodes enlarged behind the ears and in the neck, and at the age of two and a half – in the armpits and in the groin. He did not tolerate nuts, eggs, chocolate, maize and cheese. When he tried these food products, his skin used to get worse, followed with the strong itching and swallowed lips.

The health condition was quite severe during the medical examination. The diet was not nutritional, and he was noted to fall behind regarding physical development. The intradermal process was generalized, and rash was observed in his face, ear auricles, neck, back, chest, abdomen and extremities. His skin was rough due to indurations, dry, scored, with lichenification, of grey to brown color. It was coated with tiny bloody crusts. Solid miliary nodules were observed on the surface of extending extremities, body and the neck. All his peripheral lymph nodes were enlarged, including those in the neck, armpits and in the groin. According to the results of the total blood count, the child experienced eosinophilia without any other abnormalities.

The child was prescribed to take sedative and general tonic agents at the in-patient hospital as well as nicotinic acid, antihistamine drugs, and coal tar gents for topical application for children. One course of reflexotherapy on corporal and ear auricle points is performed.

The child was discharged with the health condition improved. The recommended outpatient treatment included Ketotifen in age-dependant dose, antihistamine drugs in combination, occasional courses of reflexotherapy and diet.

Clinical diagnosis set was rare allergic dermatosis due to dietary allergy with symptoms of Hebra's prurigo.

### **New approaches in treatment of allergodermatosis**

Treatment of allergodermatosis poses a challenging task requiring patience and insistency both from the patient and practitioner, since all kinds of allergodermatosis are known for persistent, sequential, and recurrent running. Allergic inflammation, body hyperresponsiveness, including disturbance of various internal and external factors lie at the root of allergic dermal diseases.

A wide range of techniques are used to treat allergodermatosis, especially in children, in particular popular are ointments based on glucocorticosteroids for topical application. But despite this, the issue of therapy for atopic (allergic) dermatosis is not completely dealt; moreover, the literature sources available rarely provide descriptions of non-traditional drug-free techniques and the extent of efficiency by using them.

A huge amount of chemical agents is used in medical practice today which often commit to aggravate the body sensibilization.

Oral and parenteral administration of glucocorticosteroids come as the most effective method to treat dermatitis (A.N. Pampura et al, 2000). However, if the long-term glucocorticosteroid-based therapy is applied, especially in oral and parenteral route of administration, various complications may arise as follow: hypertension, obesity, disturbance of adrenal gland function and that of other endocrine glands, hypokalemia, glucose tolerance disturbance, immunodepression, osteoporosis, hemorrhage, gastric and duodenum ulcer and many others.

Moreover, there is a high risk of potential development of disease relapse upon withdrawal of drugs in children with atopic dermatitis. Therefore, we consider reasonable and necessary to prescribe glucocorticoids for oral and parenteral administration for patients with the severe relapse of atopic dermatitis with insufficient efficacy of glucocorticosteroid therapy applied topically for the short-term period (7 days).

Taking the above into consideration, and based upon the longstanding experience of using drug-free methods that differs from other methods in safety profile, high efficiency and long-lasting persistent remission, I think it rational to recommend the therapy as follows:

- Elimination Therapy
- Topical Therapy
- Acupuncture
- Stimulation of acupoints with multineedle hammer (Plum Blossom Therapy Needle)
- Allergen-specific immunotherapy

### **Elimination Therapy**

It is expedient to perform elimination therapy starting from the Day 1 of the treatment without waiting for the dermal test results, since allergic tests are not performed in the period of atopic dermatitis relapse. Moreover, it is prohibited to do so. The patient requires hypo-allergic diet to the strict compliance that excludes all foodstuff containing most common allergens. This kind of diet is recommended for both adults and children. If the infant is sick, this type of diet is recommended to the nursing mother, since dietary allergens know no barriers.

It should be specially noted that breast-feeding should in no way be discontinued though some practitioners vote for such discontinuation though they are well aware of the benefit and wholesome significance of breast milk for infants.

If the infant is on bottle feeding and it is sensible to the bovine milk proteins, milk-free diet is recommended. As for the children with the ill-defined sensibilization to bovine milk proteins, whole bovine milk, fresh milk formula and curd cheese should be excluded from the diet. These children are given adapted acidified milk formula, for example, AGU-

1, AGU-2, Bifidin or hypoallergic milk formula Hipp GA, Humana GA, Frisopep. Children older than 6 months can take bio-kefir, kefir, Biolact, Acidolact. With the high sensibilization to bovine milk the specialized adapted milk formula are prescribed based on soya protein isolate that does not contain milk protein and lactose. These milk formula include Nutrilac-soya, Humana SL, Enfamil-soya, Bona-soy, Friso-soy milk, Heinz Soy Milk Baby Formula, Tutelli-soya. The beneficial effect of soya milk formula is seen in a month of use.

In case of sensibility to bovine milk proteins and soya the specialised hypoallergic milk formula is recommended which are made using milk protein hydrolyzate with the high degree of hydrolyzate as follow: Pregestimil, Nutramigen, Alimentum, Pepti-Junior, Alfare, Peptidi-Tutelli. Also such milk formula as Frisopep (Holland), Humana GA-1, Humana GA-2, Hipp GA are recommended that contain hydrolyzate of whey protein with whey protein of low degree.

Lately breast milk substitutes are widely used. The world practice tends to substitute cow milk with goat's milk in global production of nutrition food for children and nutritional care.

Goat's milk proteins differ from cow milk proteins in the fractional formula, as well as in their structural, physico-chemical and immunological features. The significant distinctive feature of the goat milk is the decreased content of  $\alpha$ -casein. This milk protein proves to be one of the principal antigenic determinants of cow milk. The basic serum protein of native goat milk is  $\alpha$ -lactoglobulin, and  $\beta$ -lactoglobulin in cow milk. The dry whole goat milk Amaltea from Holland, as well as the child nutritional formula Nanny and Nanny Gold Doe Kid are known for the decreased or no  $\alpha$ 1-casein and  $\beta$ -lactoglobulin, being the principal antigenic determinant (active patches) of the bovine milk.

The child milk formula Nanny is the specialized substitute of breast milk elaborated based on the goats milk from Holland. The whole goat milk used to manufacture Nanny milk formula is the ecologically friendly product. This formula is recommended for infant from birthdate if breastfeeding is impossible and infants who suffer from atopic dermatitis and intolerance to bovine milk proteins.

Hypoallergic, and in other words, elimination diet is recommended for elder children and adults with allergodermatitis. The diet should be tailored to each patient when choosing these foodstuff, and it is essentially required, with the highest precision, based on the dietary diary and results of skin tests, determination of IgE and IgG, to identify antibodies of the food non-tolerated. It is forbidden to include in the diet such food

as raw meat, honey, nuts, sunflower seeds, almond nut, eggs, fish, beans, citrus fruit fruits, such soft drinks as pepsi-cola, Fanta, sparkling wine, bubble gums, ice-cream, strawberry, kazy (Asian dish), thus, eliminating the potential reason of the dermal process relapse.

When recommending the hypoallergenic diet, the practitioner should identify whether the child experiences pseudo-allergic reaction. When such reaction is revealed, this is the trigger point to exclude from the nutrition such food for long-term storage, as well as foodstuff suspected to include chemical compounds.

Elimination procedures should also be performed regarding household, epidermal and pollen allergens but not the dietary allergen. When the high sensibility to house dust allergens is revealed, the regular cleaning and airing of house premises should be taken under close monitoring with the purpose to decrease the concentration of allergens.

## Allergodermatitis – Skin Care Measures

External care for all types of atopic dermatitis appears one of the compulsory elements in the therapy course. Unfortunately, not only patients but practitioners are poorly aware of the necessity to provide skin care measures for the allergic patients. This often brings to mistakes in delivery of care procedures for patients with the dermal sensitivity to disturb the system functions. Some particular measures should be taken to provide care for the allergen-challenged skin. The bath is filled up with water, and in an hour of sedimentation for dechlorinating, some hot boiled water is added to the bath to get to the appropriate temperature to take for the body. The bath taking is age-specific; adults can take for 30 minutes, the infants – 10 to 15 minutes. The involved skin areas should be soaked first and rinsed. The soap with Vitamin E is much appropriate to use. No loofa should be used. On rinsing with tap water, the skin should be wiped with the towel in gentle strokes and if the dermal process is weeping (moist eczema), Fucorcine should be used (Castellani water), and the involved skin area should be treated with salicylic ointment. This procedure should be performed twice a day, in the morning and in the evening. Given the severity of the dermal involvement, additional ointments are recommended during daytime, for example, Celestoderm-V, Triderm, Mometasone, Advantan and others.

If the atopic dermatitis appears in the face and scalp, the ointments indicated above, are recommended in the form of cream and lotion.



Antihistamine drugs are prescribed mainly for children from the age of 2 and patients at the age of 75 and older, as well as for those patients who cannot tolerate or otherwise endure acupuncture, dermal diagnostic tests and other medication therapies.

Sedating effect caused by antihistamine drugs of the first generation comes favorable for children with the disturbed sleep and infants with known hyperactivity. Manifestation of the sedating effect is equal to appearance of skin itching and burning sensation due to the effect on the central mechanisms of the body. Taking this into consideration, antihistamine drugs of first generation are preferred in the period of intense skin itching in infants of the first year of life and children at preschool age. Quifenadine (Phenkarol), Promethazine (Pipolphen), Chloropyramine (Suprastin), Clemastine (Tavegil) and others are recommended when this occurs. Long-term experience proved indication of combination of antihistamine drugs of the first generation. For instance, Quifenadine in the morning and in the daytime, and age-specific dose of Clemastine for the night. These kinds of antihistamine drugs should be replaced for others every 12-15 days.

In cases when the allergic itching dermatosis required long-term treatment, antihistamine drugs of the second generation may help, such as Loratadine (Claritine), Cetirizine (Zirtek) and others that inhibit development of the early and late stages of allergic reaction.

As soon as all allergic symptoms resolve, Ketotifen (Zaditen) is indicated as the prevention measure. Zaditen acts for long-term and its effect is seen in 1 to 2 months. This drug prevents relapse of the atopic dermatitis and sensibilization occurrence to new allergens.

In recurrent urticaria with the Quincke's oedema and other itching dermatosis the therapy regimen excludes any antihistamine drugs, for the purpose of performing allergic diagnostic tests in children at the age of 3 to 5 years old and adults, since clinical signs of allergy can be easily relieved with the help of acupuncture.

## Acupuncture

Whereas the skin is considered as the vast receptive field and the area of periphery terminations of the cutaneous analyzer nerves, it should be assumed that the dermal condition influence the physiological reactions to stimulation of external and internal environment.

According to the clinical practice experience, pathological processes in the derma occur due to various organs and systems dysfunction; in the meantime cutaneous findings may evoke dysfunction of the regulatory systems in the body.

Under the conditions of the long-term progression of common dermatosis pathological impulses run to the central nervous system which may themselves cause functional disturbance of the latter. All indications are that the after-sensation nervous regulation disturbance plays a significant role in occurrence of frequent relapses of skin diseases. It is identified that occurrence and the run of eczema, neurodermatitis and other allergodermatosis cases are due to involvement of neuro-regulatory mechanisms. Moreover, one should remember that allergens appear the extreme irritators of the nervous system and the therapy for this kind of population should be likely aimed at elimination of pathologically associated conditions. The acupuncture technique as the unique method of reflective action may bring the favorable effect when this occurs.

In most cases people suffering from allergic dermatosis may face a range of predisposing causes or reasons to experience skin diseases. This additionally proves expediency of complex customized pathogenic therapy.

Taking into account all challenges in treating allergic itching dermatosis, we emphasize that introduction of reflexotherapy into the clinical practice to treat allergic diseases is fully expedient and justifiably proved with the vast and long-term clinical practice (since 1982).

The application of reflexotherapy appeared to be very beneficial in treatment of allergodermatosis that runs with frequent relapses with concomitant intensive itching, burning sensation, lichenification, insomnia, neurasthenic and other symptoms. Besides, the reflexotherapy considerably increases efficiency of specific immunotherapy and brings the efficiency long-term.

While using reflexotherapy as the basic technique of the complex therapy for atopic dermatitis, we should not forget contraindications and principles of correlation with other kinds of therapy. In atopic diseases the general tonic action points are treated. This procedure is combined with the impact to the points of internal organs that are chosen based upon the primary "concern" when treating the disease of the particular organ or system of the body. The treatment regimen includes stimulation of meridian points that are recommended to treat with the purpose of particular symptoms resolving (itching, pain, burning sensation, etc.).

The method of acupuncture technique is preferred in accordance with the particular nature of the allergic process, especially in regards to its localization and clinical symptoms. The Table 4 describes basic corporal points frequently used to treat allergodermatosis.

Table 4

Basic corporal points used to treat allergodermatosis

Meridian	Name and number of meridian points	Meridian	Name and number of meridian points
Lungs	Chi-Ze (LU-5) Lie-Que (LU-7) Yu-Ji (LU-10) Shao-Shang (LU-11)	Urinary Bladder	Feng-Men (UB-12) Ge-Shu (UB-17) Pi-Shu (UB-20) Cheng-Fu (UB-36) Wei-Zhong (UB-40) He-Yang (UB-55) Kun-Lun (UB-60) Shen-Mai (UB-62)
Large intestine	Hegu (LI-4) Shou-San-Li (LI-10) Quchi (LI-11) Jian-Yu (LI-15) Ying-Xiang (LI-20)	Kidneys	Yong-Quan (KD-1) Zhao-Chai (KD-6)
Stomach	Ju-Liao (St-3) Di-Cang (St-4) Fu-Tu (St-32) Zu-San-Li (St-36)	Gall Bladder	Huan-Tiao (GB-30) Yang-Lin-Quan (GB-34) Yang-fu (GB-38) Qiu-Xu (GB-40) Z-Qiao-Yin (GB-44)
Spleen-pancreas	Yin-Bai (Sp-1) San-Yin-Jiao (Sp-6) Xue-Hai (Sp-10)	Liver	Da-Dun (LV-1) Xing-Jian (LV-2) Tai-Chong (LV-3) Yin-Lian (LV-11)
Heart	Chen-Men (Ht-7)		Da-Zhui (GV-14)
Small intestine	Qian-Gu (SI-2) Hou-Xi (SI-3)	Governing Vessel Conception Vessel	Qi-Hai (CV-6) Lian-Quan (CV-23) Cheng-Jiang (CV-24)

Below is the meridian point to acupuncture in allergodermatosis conditions (the technique is patented in the Republic of Uzbekistan).

### Day 1

CV 24 Acupuncture Point - Sheng-Jiang (Sauce Receptacle). This meridian point is located in the center of the mentolabial groove directly below the lip. It's action is effective in allergic itching dermatosis as the urgent care point to resolve facial oedema.

LI-11 Acupuncture Point - Qu Chi (Pool at the Bend). This point is located at the lateral end of the transverse cubital crease between LU 5 and lateral epicondyle of the humerus. It is used to treat the urticaria and the Quinke's oedema. This is useful to process it in gastrointestinal diseases.

ST 36 Acupuncture Point - Zu-San-Li (Leg Three Li). This point is located 2 cun below ST15, one finger width lateral from the anterior border of the tabia. The Chinese practitioners name this point for a reason as "a point to treat 100 diseases". The Japanese scholars call it "longevity point". First of all, this point is good to process with all kinds of GI tract disturbances. Practitioners are aware that in most cases, especially in children, the dietary allergy appears the basic reason for the atopic dermatitis occurred.

### Day 2

LI 15 Acupuncture Point - Jian Yu (Shoulder Bone). This point is located in depression found with the arm abducted. The depression point is successfully punctured to treat all kinds of dermal rash of allergic nature.

LI 4 Acupuncture Point - He-gu (Union Valley). This point is located in the middle of the 2nd metacarpal bone on the radial side. It is used to treat various diseases in practice. This acupoint is effective to treat bronchial asthma and pollinosis along with dermatosis.

SP 10 Acupuncture Point - Xue Hai (Sea of Blood). This point is 2 cun above the superior medial border of the patella on the lump of the medial part of quadriceps femoris. This is an important point to regulate blood; it removes stagnation, tonifies blood, regulates menstruation.

### Day 3

TH 5 Acupuncture Point - Wai Guan (Outer Pass). This point is effective to improve sleep and soothes the nervous system.

SP 6 Acupuncture Point - San-Yin-Jiao (Three Yin Intersection). The point is located 3 cun above the tip of the medial malleolus on the posterior border of the tuba. If it is found correctly, the point is highly effective.

KD 1 Acupuncture Point – Yong-Quan (Gushing Spring). The point is located on the sole. It has the sedating effect. It is effective to relieve itching in patients with dermatosis.

**Day 4**

- LU 3 Acupuncture Point - Tian Fu (Celestial Storehouse)
- LU 4 Acupuncture Point - Xia Bai (Guarding White)
- LU 5 Acupuncture Point - Chi Ze (Cubit Marsh)
- LU 10 Acupuncture Point - Yu Ji (Fish Border)

All these points are located in the Lung Meridian. They are most effective to treat upper limb dermatosis and bronchial asthma combined with the atopic dermatosis.

**Day 5**

CV 22 Acupuncture Point – Tian Tu (Celestial Chimney). This point is effective in the Quincke's oedema and larynx edema.

LU 7 Acupuncture Point – Lie Que (Broken Sequence). This is one of the miracle points of this meridian effective in treatment of itching dermatosis.

**Day 6**

GN 30 Acupuncture Point – Huan Tiao (Jumping Round). This is the Gall Bladder Meridian point. It is effective to soothe itching of multiple localization with eczema.

UB 36 Acupuncture Point – Cheng Fu (Support). This is indicated in edematous cases.

GV 1 Acupuncture Point – Chang Qiang (Long Strong).

GV 2 Acupuncture Point – Tao Shu (Lumbar Shu). Both are the Governing Vessel Meridian points. They are effective in treatment of allergic itching dermatosis of generalized nature.

**Day 7**

UB 37 Acupuncture Point – Yin Men (Gate of Abundance). It is effective in the Quincke's oedema and urticaria.

UB 40 Acupuncture Point – Wei Zhong (Bend Middle). This is effective in all allergic diseases.

**Day 8**

UB 40 Acupuncture Point – Wei Zhong (Bend Middle)

UB 55 Acupuncture Point – He Tang (Yang Union)

UB 56 Acupuncture Point – Cheng Jin (Sinew Support)

UB 58 Acupuncture Point – Fei Yang (Taking Flight, stabilizing point)

UB 60 Acupuncture Point – Kun Lun (Kunlun Mountains). All these points of the meridian are effective to sooth and resolve the dermal process acting as stabilizers.

**Day 9**

This session includes acupuncture procedure using GV points of the Governing Vessel Meridian. If the allergic dermatosis is associated with the gastrointestinal tract diseases, the session is to process L2 to 07 points (GV 5 Xuan Shu (Suspended Pivot) to GV 8 Jin Suo (Sinew Contraction). If the itching dermatosis occurs concomitantly with the atopic form of bronchial asthma and other respiratory allergosis, then points 07 to C7 (GV 9 Zhi Yang to GV 14 Da Zhui are treated).

**Day 10**

With the purpose to complete the acupuncture course using corporal points, we have to “close the door”, repeating all procedures onto points of the Day 1 adding the point SP 4 Gong Sun (Yellow Emperor). This point is associated with the GV Meridian as the binding point.

Auriculopuncture, or ear acupuncture, or auricle therapy, is applied to treat all allergic diseases. The efficiency of auriculo-reflexotherapy is twice as much as compared with the corporal meridian point. Such high efficacy of auriculo-reflexotherapy is described in that there are nerve fibers in the ear auricle that run to the tween-brain. It likely causes not only organ-specific reactions, but the overall non-specific impact on the organism.

*Table 5*

**Auricular points commonly used in allergodermatosis treatment**

English names of points	Names and numbers of points of the Chinese school
Adrenal gland	Shen-Shan-Xian (MAT-T 13)
Endocrine glands	Neifenmi (MA-IC3 22)
Ovaries	Luanchao (MA-TF 23)
Brain stem	Naogan (AP 25 V)
Pituitary Gland	Neochuiti (AP 28 VI)

Occiput	Zheng (MA-AT 29 VI)
Breath regulating point (Asthma Point)	Ping-chuang (AP 31 VI)
Central Nervous System point (Spirit Gate)	Sheng-Meng (AP 55 X)
Diaphragm (Point Zero)	He (AP 82 XIII)
Bifurcation Point (Oppression Point)	Chi Qian (AP 83 XIII)
Kidney	Sheng (MA-SC 95)
Lung	Fei (MA-IC1 101)
External ear	Waier (AP 20 III)
Sympathetic nervous system (Vegetative Point)	Jiaogan (MA-AH7 51)

Below is the acupuncture procedures applied with these points.

#### Day 1

MA-T 13 Acupuncture Point - Sheng Shang Xian (Adrenal Gland). If this point is impacted, the anti-inflammatory, anti-allergic, antipruritic, antishock, antirheumatic, resolving, anthemorrhagic, antiasthmatic, tonifying, normalizing, vascular tone action occurs, as well it has the antithermic effect, improving smooth muscles relaxing, expectoration and other actions.

AP 20 Acupuncture Point - Wei Er (External Ear), when irritated, the sedating effect is caused to the body in allergic diseases.

#### Day 2

MA-IC3 22 Acupuncture Point - Neifenmi (Endocrine Glands). This is commonly used point in auricular therapy. It balances endocrine hormones, hypersensitivity and rheumatism. The stimulation of this point causes antiallergic, expectorating, anti-inflammatory, antipruritic action which promotes improvement of lactation effect.

MA-AT 23 Acupuncture Point - Luan Chao (Ovaries). The point is effective to normalize the involuntary nervous system condition which is essentially required in allergic dermatosis.

#### Day 3

AP 25 Acupuncture Point - Nao Gang (Brain Stem). This point is effective with its anti-allergic and anti-shock action.

AP 28 Acupuncture Point - Nao Chui Ti (Pituitary Gland). This is effective to result in good sedating, broncholytic and soporific effect.

#### Day 4

MA-AT 29 Acupuncture Point - Zheng (Occiput). This point causes anti-inflammatory and sedating effect.

AP 31 Acupuncture Point - Pin Chuan (Breath Regulating). This point regulates the respiration center and causes anti-allergic action; it also relieves allergic itching well.

#### Day 5

AP 51 Acupuncture Point - Jiao Gan (Sympathetic Nervous System). It is one of the commonly used acupoints in treatment of various diseases, including involuntary nervous system diseases.

AP 55 Acupuncture Point - Sheng Men (Central Nervous System point). It is associated with the commonly used points in auriculopuncture in treatment of various diseases. It has the antipruritic effect.

#### Day 6

MA-SC 95 Acupuncture Point - Sheng (Kidney). The practitioners in the ancient China considered this point as the most associated with the ear. They also assumed that kidneys are lined to the brain, bones and genitals, and thus, this point is used to treat a range of diseases. This is effective to treat hair loss and stimulate the metabolism.

MA-IC1 101 Acupuncture Point - Fei (Lung). This point is used to treat respiratory system diseases, including pulmonary tuberculosis. This has the distinctive anti-inflammatory, antiallergenic effect in management of allergic dermatosis, herpes zoster, skin allergic itch, urticarial rash, neurogenic itch, skin itch of unknown etiology.

#### Day 7

AP 51 Acupuncture Point - Jiao Gan (Sympathetic Nervous System) and AP 55 X, Sheng Meng (Central Nervous System point). These points balance sympathetic and parasympathetic nervous systems and blood circulation, especially during surgery.

#### Day 8

AP 82 Acupuncture Point - He (Diaphragm). This is Point Zero defined by P. Nogier: "Quite essential point of the ear auricle is the so-called zero point which is located in the middle of the ear at the helix root. It usually runs horizontally along the bottom of the concha. It can seldom be discerned in the rear position of the concha but in the middle of the concha it appears as a clearly formed ridge. This is general homeostatic

balance point. It's mostly insensitive point. Point Zero can be considered as the circle center which is inscribed along the antihelix. This is effective in allergic dermatitis. This point deserves to be considered during reflexotherapy due to its features and effects. *вниманием свойствам*. It is easy to stimulate this point to arouse the ear auricle sensitivity. And vice versa, the abundance of sensitiveness may be sedated by using Point Zero, either. It is recommended to use this point with care and only where appropriate. For instance, good results are not anticipated during auriculopuncture if the patient is stressed or in strong emotional upset; when it appears, the Point Zero stimulation balances the condition which contributes to treatment outcome. Such procedure should be started with puncturing this point, first of all. Otherwise, the ear auricle therapy will have null effect despite the adequately therapy regimen. Point Zero stimulation acts as the trigger point which is favorable to eliminate peripheral disorders not resolved by the particular point acupuncture. Therefore, the Point Zero is considered as the principal ear acupoint.

AP 83 Acupuncture Point - Chi Qian (Bifurcation Point), it is effective in dermal diseases.

Corporal and aurical acupuncture procedures are finished by stimulating the Diaphragm point He (Point Zero by P. Nogier) and the bifurcation points (Chi Qian), to get good results.

### Plum Blossom Therapy procedure

In treatment of allergodermatosis using the Plum Blossom Needling (Mei-Hua-Cheng), this procedure is addressed when acupuncture and other therapeutic modalities are inefficient, especially in patients with intensified xeroderma and scabrities allergodermatosis. This technique gives the good result in obvious keratosis, that is corneal layer thickening that chronically long-lasts for 5 to 20 years in atopic dermatosis condition, since this procedure contributes to the full-scale permeability of medication in the depth of derma, as well as hydrotherapeutic procedures.

In patients with allergodermatosis the Plum Blossom Needling is applied at the rate of 100-150 taps per 1 minute or 2 taps per 1 second with light or medium stimulation. In cases of intense keratosis strong and heavy taps are applied.

**Procedure technique.** The Plum Blossom needle, in the form of the hammer, should not be heavy. Prior to the procedure the skin is treated with 75% spirit. The head of the needle should be also decontaminated

(upon the completion of the procedure the skin is treated with the cotton swab soaked in spirit or iodine solution).

The Plum Blossom Needle is handled without any tension, and the taps are performed with the slight movements of the hand. The needles position should be completely perpendicular to the skin surface. If performed at angle, the taps may cause pain in the treated area, which, in its turn, brings to the defect of the skin layer. During the procedure the patient may be prone or sit respective of the stimulation region.

With the purpose to effectively treat all kinds of allergic diseases in general, and allergodermatosis in particular, the advanced clinical allergology specialist should be aware of oriental non-medication treatment modalities, taking into consideration that chemicals-based agents may appear as allergens at any time.

Air-ionotherapy procedure followed by the respiratory exercises using Chizhevsky chandelier is indicated for all patients with allergic itching dermatosis.

### Allergen-specific immunotherapy

Allergen-specific immunotherapy was first offered to use in 1911 and was applied to treat the seasonal allergic rhinitis. The point is that clinically significant allergen is administered by the patient at graded doses to which the patient is hypersensitive. The allergen-specific immunotherapy performed in good time, first, allows preventing transition of the disease in the mild form to the severe; second of all, it lowers or even completely avoids the necessity to use medical drugs. If completed, allergen-specific immunotherapy courses are effective therapeutic modality followed by the long-term remission of the disease and that prevents occurrence of sensibilization to new allergens *сенсбилизации* (O. M. Kurbacheva, 2009).

Only allergists are eligible to perform allergen-specific immunotherapy (ASIT) who are familiar with the aiding techniques associated with adverse drug effects. The ASIT procedure is performed during the remission period and upon curing of pocket of infection, identification of the offensive allergen, based on the medical history, clinical symptoms and results, and specific allergology test results. ASIT is far more effective in allergosis pathologically induced by IgE first type of reaction.

Prior to ASIT procedure to treat allergic diseases and bronchial asthma, the health care provider should arrange the patient to this particular kind of therapy. With the purpose to get favorable results, the following is required to be done:

- To have the adequate and precise diagnostics in place and to perform ASIT procedure at the time when no attacks and relapses occur, and when all pathological symptoms are resolved and the patient is clinically healthy;
- To choose the individual approach to perform ASIT for every individual patient depending on the extent of hypersensitivity of organism;
- To perform ASIT which is the effective therapy to treat bronchial asthma and other allergic diseases, to alter the immunological readings of the patient for the better;
- To strictly control the preparation of medical solutions and adjustment of the preliminary (threshold) dose for the treatment. All these procedures should be performed according to the methodology adopted in clinical allergology.

The ASIT is classified into parenteral, peroral, inhalation and subvaginal routes of application. In 1976 we elaborated and introduced the new shortened scheme of ASIT procedure taking into account the sensitization rate of the patient's body to the particular allergen. In 1986 we elaborated and implemented the ASIT technique in practice, that is injection-free and in other words, the electrophoretic SIT procedure to treat allergic diseases.

Both SIT techniques differ in high results against other methods. Similar to the electrophoretic method, the specific immunotherapy in treatment of allergic diseases is described in Chapter I (Drug-free therapeutic techniques to treat allergic diseases).

With regard to the hypersensitivity extent, standardized advanced ASIT consists of three patterns.

*Pattern 1* allows specific immunotherapy for patients with the highest type of sensitization.

Treatment session: three injections are made on a daily basis in the range of potency  $10^{-14}$  to  $10^{-7}$  per each dilution (0.3; 0.6 and 0.9 ml); four injections  $10^{-6}$  to  $10^{-4}$  (0.2; 0.4; 0.6 and 0.9 ml);  $10^{-3}$  to  $10^{-2}$  – five injections (0.1; 0.3; 0.5; 0.7 and 0.9 ml); five injections  $10^{-1}$  (0.1; 0.2; 0.3; 0.4; 0.5 ml).

The maintenance dose (0.5 ml) is injected subcutaneously. The treatment duration is 45-54 days.

*Pattern 2* is most appropriate for patients with the medium sensitization requiring specific immunotherapy.

Treatment session: three injections are made on a daily basis in the range of potency  $10^{-7}$  to  $10^{-6}$  per each dilution (0.3; 0.6 and 0.9 ml); four injections  $10^{-5}$  to  $10^{-2}$  (0.2; 0.4; 0.6 and 0.8 ml); five injections  $10^{-1}$  (0.1; 0.2; 0.3; 0.4; 0.5 ml). The maintenance dose is  $10^{-1}$  (0.5 ml) subcutaneously. The treatment duration is 1 month.

*Pattern 3* may be used for specific immunotherapy in patients with low sensitization.

Treatment session: four injections are made on a daily basis in the range of potency  $10^{-5}$  to  $10^{-4}$  per each dilution (0.2; 0.4; 0.6 and 0.8 ml); five injections  $10^{-3}$  to  $10^{-2}$  (0.1; 0.3; 0.5; 0.7 and 0.9 ml); five injections  $10^{-1}$  (0.1; 0.2; 0.3; 0.4; 0.5 ml). The maintenance dose is  $10^{-1}$  (0.5 ml) subcutaneously. The treatment duration is 23-25 days.

Further, the outpatient maintenance therapy is provided once on the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> weeks and in the 1<sup>st</sup> month with injection of 0.5 ml allergen in the potency of  $1:10^{-1}$ . The results of such treatment are specified depending on the medical history, physical examination of the patient and data from observations diary that patients are recommended to keep within 3 years.