

Clinical Clinical a BOOK 1 part (clinical cases are approved in the practice). For Clinical Pharmacists (own researches and the analysis of references).

Dmitrieva Elena Germanovna

Clinical Pharmacist, cand.biol.science's for Clinical Pharmacology Russia

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***Corresponding author:** Dmitrieva Elena Germanovna, Clinical Pharmacist, cand.biol.science's for Clinical Pharmacology Russia

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Diphtheria is Forgotten Disease

The paper is concentrated on the necessity of accepting a new Russian classification of diphtherias considering generalized experience of the latest diphtherial epidemic in Russia and bringing the classification in conformity to modern concepts of diphtherial infection.

Earlier in medical practice *C. ulcerans* it was not considered as an infecting agent while in 2000 the death of the patient connected with officially has not been registered *C. ulcerans*.

Diphtheria epidemic in Russia

Disease of a diphtheria grew and decreased in a direct communication with living conditions, improvement of a food and a world or war condition, instead of from inoculations (the note of the author).

Risk factors are decrease in immunity to a diphtheria in various age groups, high level carriers of toxigenic strains.

Groups of high risk of infection with a diphtheria remain: the idle population of able-bodied age; the persons conducting asocial a way of life and abusing alcohol, and also migrants.

Displays of epidemic process. In the recent past the diphtheria was one of leading social problems not only owing to high disease, but also in connection with high subsequent physical inability, lethality and death rate. Since 1858 the diphtheria is present at all developed societies of the countries with a temperate climate!!! In Europe the diphtheria remained at rather high level to 1931.

During the Second World War the diphtheria became the most widespread infectious disease in the Western Europe and the most frequent infectious disease which the American military men caught, despite actively spent inoculations (the note of the author).

So the reason not in absence of inoculations, it would be so simply, has put a vaccine, and there is no illness (the note of the author), and there are other reasons and illness original causes (the note of the author).

Important! For a diphtheria original long-term dynamic is characteristic: disease Liftings alternated without special law with an interval 8, 10, 12 and even 20, 25 years!!!

In this respect the diphtheria differs from other uncontrollable air-drop infections. Monthly dynamics of disease of a diphtheria also has a certain originality. Lifting begins in the autumn with formation of children's collectives, reaches a maximum in the end of autumn - in the winter (December), then gradual decrease in disease is observed. Spring lifting usually does not happen. In the years preceding introduction of vaccination, when circulation *C. diphtheriae* was enough intensive, and indicators of disease a diphtheria rather high, the got immunity at people was natural and developed only as a result of the transferred clinically expressed diseases or inapparent infections.



Those years the diphtheria was mainly children's infection. The early researches spent in Vienna in 1919 and in New York in 1921, have shown typical laws of development of the immune answer.

For the majority of newborn children were available antidiphtheria the antibodies got from their mothers. This passive immunity disappears at the age of 6-12 months. Then in days of the early childhood the share of an immune layer quickly increased, that there were reflexion enough frequent contacts to the diphtheria activator. To age of 15-20 years almost all people had a got natural immunity to a diphtheria. Then what for is inoculations?

Important! In disease lifting in 1993 the highest indicators of disease were marked among teenagers of 15-17 years, but adults most hard were ill!!!

In 2008 in structure of the diseased children till 17 years have made 30 %.

As a rule, the urban population is ill with a diphtheria more often, than rural. However in days of disease lifting in 90th of XX century disease city and agricultural population was approximately identical.

The diphtheria is the sharp infectious disease caused toxigenic *Corynebacterium* of a diphtheria. - *Corynebacterium diphtheriae* (the diphtheria activator) - characterised local fibrinos an inflammation mainly mucous membranes roto - and nasopharynxes, and also the phenomena of the general intoxication and defeat of internal bodies. It's this bacterium name the Loeffler Bacillus. More often illness amazes an oral cavity - in the sky and in a throat образуется a specific white touch.

The world Organization of Public health services recommends following definition of a case of a diphtheria.

Clinical Picture:

The disease characterised by a laryngitis or a pharyngitis or a tonsillitis and a skintight film on tonsils, a drink and (or) in a nose.

Symptoms: a heat, a hypostasis of soft fabrics of the neck, the complicated breath. Sometimes the diphtheria amazes intestines and integuments (is more characteristic for a tropical climate), Danger consists that the diphtheria is very easily transferred in a life - air-drop by, through contact to clothes or ware of patients. The carriage can last to 1 month, the number of carriers in the disease centre reaches 10 %. Infection with a diphtheria through subjects is possible, transfer of bacteria through a foodstuff is not excluded.

Characteristic Signs of a Diphtheria:

Local - filmy touches, a pharyngitis, a laryngitis, a tonsillitis, increase; regional lymph nodes.

Progressing (extended) - stridor (an armour. Whistling breath, noise). This phenomenon is caused by sharp narrowing of a gleam of a throat, a trachea or bronchial tubes;

Malignant - a dense hypostasis of a neck (the bull neck, or Caesar's neck), petechial a rash and hemorrhagic impregnation

mucous membranes and a skin, a toxic vascular collapse, sharp nephritic insufficiency, miocarditis and (or) an impellent paralysis after 1-6 weeks illnesses.

Diphtheria Bacteria.

It gram-negative the sticks located under a corner V or W. On the ends are available clavate thickenings (from Greek coryne - a mace) for the account woluminow granules. There is a property metachromasias - colouring not in colour of dye (on Nasser - in dark blue, and bacterial cages - in light brown).

The diphtheria bacterium contains - Lipopolychacharid, fibers and lipids. In a cellular wall there is a cord-factor which is responsible for adhesion (sticking) to cages. Colonies mitis, intermedius, gravis are known. Keep viability in an environment: under usual conditions on air remain live till 15 days, in milk and water live till 20 days, on surfaces of things - till 6 months. Lose properties and perish at boiling within 1 minute, in 10 % of peroxide of hydrogen - for 3 minutes. Are sensitive to disinfectants and antibiotics (Penicillin, Ampenicillins, Cephalosporins). Love the nutrient mediums containing sugar (the chocolate environment the Poppy-Lauda).

Allocates such Pathogenic Products:

1.Exotoxin (toxin synthesis is determined by a gene tox + which is sometimes lost), including a little the making:

A.Nekrotoksin (causes necrosis of the epithelium in a place of entrance gate, damages vessels; it conducts to exudation plasmas and to formation fibrinoid films as from cages enzyme trombokinasa which translates fibrinogen in fibrin is allocated);
B.True diphtheritic toxin - exotoxin (it is close on action to cytochrome - to enzyme of cellular breath; it would replace cytochrome B in cages and blocks cellular breath). Has two parts: A (the enzyme causing cytotoxic effect) and B (a receptor promoting penetration A in a cage), therefore it is possible to influence competitive, blocking cellular breath of toxin - Cytochrome C intravenously (the note of the author).

C.Hyaluronidaza (destroys hyaluronic the acid which is a part of a connecting fabric, that causes increase of permeability of membranes and toxin distribution for centre limits) - introduction hyaluronic acids while only hypothetically (the note of the author).

D.Hemolyzing the factor - the preparations reducing hemolyz. While hypothetically. For example, fermental preparations - Glutathione in ampoules and Glutathione the complex in capsules - for children is not applied (the note of the author). It is impossible to combine these preparations with antibiotics Tetracycline a number! To children till 14 years to apply Tetracycline it is impossible! The author has an application experience Antioxidant enzymes at various illnesses of blood with positive results (the note of the author).

2.Neuraminidasa - there is a sense to apply blocators (Inhibitors) neuraminidasa's - «Tamiflu» and «Relenza» - till 5 years them



to apply it is impossible! (The note of the author). The author application experience antiviral preparations at bacterial infections with positive results (the note of the author).

3. Chitinase (allows to distinguish diphtheritic bacteria from other kinds of corynebacteria and diphtheroids).

The diphtheria activator allocates the strongest toxin possessing neuroparalytic destroys a cover of nerves), Hemolyze (damage erythrocytes erythrocytes and haemoglobin hit in blood) and stopping cellular breath by properties. S.N.Kadyrova's and V.A.Tsinzerling's works testify to generalisation of a diphtheritic infection, found out not toxin, and toxigenic type bacteria *gravis* also!!! In a fabric of kidneys, in a pericardium, in a cardiac muscle, in a pulmonary fabric and in a brain of the died patients.

Biochemical Aspects of Adaptive Possibilities at a Toxic Diphtheria.

As receptor for diphtheritic toxin on a membrane of cages of the person the Heparin-connecting predecessor epidermal the factor of growth (HC-EFG) serves. The greatest quantity of HC-EFG-RECEPTORS is concentrated to cages of a myocardium and in a nervous fabric, in a fabric of kidneys and adrenal glands, that, possibly, explains selectivity of defeat at a diphtheria of these bodies.

Transfer mechanisms: air-drop (aerosol), contact (through hands, subjects), the alimentary way (through milk), but is necessary long enough contact and less than radius - 1 m.

Pathogenesis of a Diphtherias

Entrance gate - any areas of covers (more often a mucous membrane oropharynxes and throats). After bacterium fixing there is a reproduction in an introduction place. Further production of exotoxin causes necrosis of the epithelium, anaesthesia of fabrics, blood-groove delay, formation of fibrinous films. Diphtheritic microbes for centre limits do not extend, but toxin on a connecting fabric extends and causes infringement of functions of various bodies:

Cardiomyocytes (necrosis - miolizis - infectious-toxic myocarditis);

Paresis capillaries (circulator infringements - an infectious-toxic shock);

Thrombocytopenia, decrease in factors of curling of blood, system activation fibrinolysis-hemorrhagic syndrome;

Nervous fabric (a dystrophy Schwann cages, demyelination nervous fibres, first of all regional in relation to the centre - defeat of craniocerebral nerves - paresis and paralyzes in 3-5 days. Blockade of heart AV - 90 % of death rate from a diphtheria) (Jesse, Russell, 2012).

Pathogenicity factors

Pathogenicity of *Corynebacterium diphtheriae* is defined by presence of some factors.

Factors of adhesion, colonisation and invasions

The structures responsible for adhesion, are not identified, however without them the diphtheritic stick could not colonize a cage. Their role is carried out by components of a cellular wall of the activator. The invasive properties of the activator are connected with hyaluronidase, neuraminidase and protease.

Toxic Glycolipid is the activator containing in a cellular wall.

It represents 6, 6'-difer trehaloses, containing corinamicroway acid (C₃₂H₆₄O₃) and corinamillen acid (C₃₂H₆₂O₃) in equimolar relations (trehalose-6, 6'-dikorinemikolat). Glycolipid destroying an effect has on fabric cages in a place of reproduction of the activator.

Exotoxine is the activator causing pathogenicity and character of pathogenesis diseases.

The toxigenic diphtheriae diphtherias cause variants C.

Exotoxine it is synthesised in the form of the inactive predecessor - uniform polypeptid chains from m. of m. 61 kG. Its activation is carried out own bacterial protease which cuts polypeptid on two connected among themselves disulfide communications peptid's: A (m. of m. 21 kG) and B (m. of m. 39 kG). The Peptid B carries out acceptor function - he distinguishes a receptor, contacts it and forms intramembrane the channel through which gets into a cage peptid A and realises biological activity of toxin. The Peptid A represents enzyme ADF-riboziltransferaza's which provides carrying over adenosinetriphosphatase from NAD on one of amineacid the rests (Histidine's) the albuminous factor elongation EF-2. As a result of updating EF-2 loses the activity, and it leads to suppression of synthesis of fiber by ribosomes at a translocation stage.

Toxin synthesise only such C diphtheriae which bear genes of a moderate converting prophage in the chromosome. The operone, coding synthesis of toxin, is monocistronic, it consists of 1,9 thousand pairs nucleotide and has the promotor toxP and 3 sites: toxS, toxA and toxB. The site toxS codes 25 aminoacid the rests alarm peptid's (it provides a toxin exit through a membrane in the periplasmic space of a bacterial cage), toxA - 193 aminoacid the rest of peptid's A, and toxB - 342 aminoacid the rest of peptid's B toxin. Loss by a cage of a prophage or a mutation in tox-operone do a cage low-toxigenic. On the contrary, lysogenization of not toxigenic C. diphtheriae a converting phage transforms them in toxigenic bacteria.

It is proved unequivocally: toxigenic diphtheritic bacteria depend from lysogenization their converting tox-corynaphages's. The corinaphages are integrated into a chromosome of corynebacterium by means of the mechanism of site-specific recombinations and strains of diphtheritic bacteria can contain in the chromosomes on 2 sites recombinations (attB), and corinthians are integrated into each of them with identical frequency.

Because diphtheritic toxin in an organism of patients renders selective and specific influence on certain systems (the system,



heart, vessels and peripheral nerves are amazed basically simpatic-adrenal). Toxin not only oppresses fiber biosynthesis in cages, but also causes other infringements of their metabolism.

Aetiology

The diphtheria activator - a diphtheritic stick (*Corynebacterium diphtheriae*) - concerns a sort *Corynebacterium*, uniting some species of microorganisms. The pathogenic for the person only one kind - *C. diphtheriae*. The others *Corynebacterium* or not pathogenic parasites - constant inhabitants of integuments of the person, or parasites of animals.

Population of diphtheritic bacteria is non-uniform on many indicators –culture, to biochemical, antigene properties. Representatives of a kind differ also on ribosomal to structure. Is available 3 biovar (type) - *gravis* (R-form), *intermedius* (the intermediate form) and *mitis* (S-form) which differ morphology of colonies, virulence (*gravis* it is considered more virulent) and a number of other characteristics.

Important! Distinction of cultures on toxicity (on ability to produce exotoxine's).

The action mechanism of a bacteriophages.

It is established, that toxicity a diphtheritic stick it is connected with its infection specific bacteriophage's.

The genetic material bacteriophage's takes root into a chromosome of a bacterial cage and (prophage) is fixed there in the form of a fragment, thus there is a change of some biological properties of bacteria. At a diphtheritic stick – is bearer a prophage (the gene which is now designated as *tox*), is certain transformation of metabolic processes, that in particular is shown in allocation by a cage in an environment of toxic substances (exotoxines). It is necessary to notice, that cages (*tox* +), forming exotoxine, can concern as type *gravis*, and *mitis*. Type domination *gravis* is more dangerous, as development of the epidemic process accompanied by demonstration of infectious process, in particular heavy forms of illness thus is more probable. The grater danger of type *gravis* testifies that in the pathogenesis diphtherias matters not only toxicity, but also virulence. But while these characteristics have not received an accurate qualitative and quantitative estimation. Type distribution *mitis* can make active epidemic process at which disease growth takes place; occurrence increase demonstrative forms of infections.

Epidemiology

The basic source of a diphtheritic infection is the person - infected with a diphtheria or bacterial carrier of toxigenic diphtheritic microbes.

Epidemiological the persons who are in the incubatory period of illness are most dangerous, sick with the erased, atypical forms of a diphtheria, especially rare localisations (for example, a skin

diphtheria in a kind eczema, diaper rash, pustules, etc.) which differ longer current in comparison with a diphtheria of usual localisation and a typical current, and are late diagnosed.

Koopman, Campbell (1975) mark special contagiousness patients with the skin form of the diphtheria proceeding on type impetigo, in connection with the tendency of these forms to a considerable environment pollution.

Bacteriocarrier develops after the transferred diphtheria and at healthy faces, thus can be carriage of toxigenic, toxigenic and simultaneously both types *Corynebacterium*.

At a diphtheria widespread healthy carrier, it considerably exceeds disease, meets everywhere and even in places (Philippines, India, Malaya) where this infection was never registered.

Patogistology in fabrics tonsils *Corynebacterium* - changes multilayered flat of epithelium, submucosal a layer, limfoid the device tonsils, inherent in a sharp inflammation are found out.

Frequency carriers of toxigenic *Corynebacterium* reflects an epidemiological situation on a diphtheria. It minimum or comes to naught in the absence of disease and is considerable at trouble on a diphtheria - 4-40. By data in the diphtheria centres носительство at 6-20 time above, then among healthy faces.

Important! Unlike carrier toxigenic cultures carrier not toxigenic straines *Corynebacterium* does not depend on disease of a diphtheria, it remains more or less to constants or even increases.

Level carrier in collectives depends as well on an initial condition of a nasopharynx, instead of from full coverage by inoculations (the note of the author). If an organism pure from infections to it infections do not stick (the note of the author).

In the diphtheria centres carrier among children with a normal condition of a mucous membrane of a pharynx and a nasopharynx circle of children, suffering a chronic tonsillitis comes to light in 2 times less often, than. A.N.Sizemova, T.I.Mjasnikovoj's researches testify to a role of a chronic tonsillitis in pathogenesis long diphtheritic bacteriocarrier (1974) also. In formation long carrier great value give accompanying staphylococcus - streptococcal microflora, especially at children with chronic pathological changes from a nasopharynx.

Important! The diphtheria is a superstructure over base carrier other infections, not inoculations therefore are necessary is an infection with other flora and curing base infections (the note of the author).

Important! Again, as the author, I speak about a syndrome of strengthening of an infection, and it happens at vaccination and the lowered immunity as a result of vaccination (the note of the author).

Important! Unfortunately, in Russia the immunology service badly works, that many immunologists are not able to interpret competently Immunogramm's, that I should do it most, and process of paraclinic - laboratory diagnostics is concentrated only in the large centres and paid for all patients, that essentially reduces process of rendering of the qualitative medical help (the



note of the author),

Degree of danger of carriers toxigenic *Corynebacterium* is defined by level of antitoxic immunity in collective which influences process carriage indirectly, reducing disease of a diphtheria and by that sharply reducing possibility of contact to the activator.

Important! At high level of antitoxic immunity and presence of considerable number of carriers toxigenic bacteria of disease by a diphtheria can not arise.

Important! Carrier becomes dangerous if in collective there are persons with low immunity if it to do vaccination they fall ill quickly and are the distributor of an infection among associates because their own immunity does not cope with an infection (the note of the author).

Important! One of the reasons long carrier can be reinfecton the carrier new phagovariat's the activator, that again speaks about a syndrome of strengthening of an infection at inficiroval (the note of the author).

It is important! If an organism pure from any infection degree of sticking of other infection is extreme it is small (the note of the author), after all any vaccination is an infection with different infections. By means of a method phagotyping it is possible to define more precisely duration bacteriocarrier. This method also is perspective in revealing in the centre of a source of flash of a diphtheria.

In various collectives can simultaneously circulate as toxigenic, and not toxigenic *Corynebacterium*. According to G.P.Salnikova's (1970), more than at half of patients and carriers simultaneously vegetate toxigenic and not toxigenic *Corynebacterium*.

Besides the person, a source of a diphtheritic infection in the nature can be and pets (cows, horses, sheep, etc.) in which *Corynebacterium* are found out on mucous membranes of a mouth, a nose, a vagina. The big epidemiological danger is represented by presence on an udder of cows pustules and chronic ulcers resistant to treatment in which contents diphtheritic sticks are defined. Carriage and disease of a diphtheria among animals depends on disease of it among people. In sporadic disease of a diphtheria among people disease of it and among animals decreases.

The reasons of flashes of a diphtheria - not observance of hygienic rules, high density, immunity decrease, the defective food, insufficient health services.

It is important! If the existing vaccine does not rescue from illness development, it only contains growth toxigenic bacterium forms, but development of bacteria and increase toxigenic - increases, it is necessary to search for other variants of the help, alternative (the note of the author).

Seasonal prevalence of a diphtheria.

Now adults suffer from a diphtheria in greater to a measure.

Cases of a diphtheria among them register throughout all year. At children disease lifting mark during the autumn-winter period. Properties of a diphtheritic stick.

Bacteria have drunk - special fibers for an attachment to body cages. Having attached, bacteria start to breed actively, but do not get into a blood channel. Such colonisation causes local inflammatory process - a hypostasis and rise in temperature. At this stage toxin gets to blood. The help is necessary adequate that toxin was not formed, otherwise, there is a process of increase in number of bacteria and accordingly allocation экзотоксинов (the note of the author).

Properties of diphtheritic toxin:

Leads to destruction myelin covers of nerves, as well as tetanic toxin, therefore to include in an inoculation tetanic sticks dangerously, therefore do ADS-M inoculation (the note of the author) is more often.

Important! Infection with a diphtheria occurs, if nearby the person standing less of 1 metre, as well as tetanic sticks are under the earth более 1 metre under the earth (the note of the author).

My opinion - to do at contacts to the earth to damage of integuments it is necessary Tetanus Toxoid (the note of the author).

In clinical cases when did inoculation AKDS and it has passed without complications, and has passed less than 10 years from the moment of its manufacture at contacts to the earth at traumas at introduction Tetanus Toxoid - there are faints (the note of the author). Better on a situation to apply vaccines and whey if there are weighty substantiations, instead of all successively (the note of the author).

The illness current depends on toxin action.

If it is developed in considerable quantities the patient has a heavy toxic form of illness with various complications. Changes are reversible if to treat competently. Correctly picked up treatment can restore work of the amazed bodies completely.

If there are illness symptoms the person is dangerous to associates in the epidemic plan.

To a diphtheria testify:

1. hoarseness voices
2. barking or silent cough
3. brown crusts and cracks on edge of nostrils or on an upper lip
4. edema necks
5. whitish films on tonsils

At catharal to the form of a diphtheria of these signs can not be, however the patient is dangerous to associates in the epidemic plan.

The unique authentic way to define, whether is infectious the person - to hand over dabs from a pharynx and a nose. If as a result of bacteriological research diphtheria bacteria the person is not infectious are not revealed and can return to collective. It is necessary to hand over the analysis twice with an interval in 2-3 days (the note of the author).

Susceptibility and immunity:

The susceptibility to a diphtheria not high, an index



contagiousness fluctuates within 10-20 %. So, chest children to 6 months are not susceptible to this disease because of presence at them the passive immunity transferred from mother placentary by.

Complex studying of indicators cellular and humoral immunity, and also nonspecific factors of protection is spent.

In the sharp period of a diphtheria the essential increase in whey of blood of the circulating immune complexes (CIC), deficiency of quantity CD3 + - or T-limfocytes, disbalance humoral a link of immunity in the form of insufficiency of production Ig G and against surplus CD19 + cages or B-limfocytes against the background of excess circulating immune complexes (CIC) in peripheral blood is registered. In process of aggravation of a current of disease expressiveness of infringements composed the immune status progressively increases. If at easier form of a diphtheria the adequate immune answer at illness burdening start to be shown immunopathological frustration is observed.

In the display period visceral complications of a diphtheria at patients the second wave of immune frustration is formed. Decrease in level of carriers CDS +, increase of quantity CD19 +- limfocytes against surplus of the circulating immune complexes (CIC) appears typical reactions. At the heart of a phenomenon development autoimmune defeats of internal bodies, and also a phenomenon of decrease in activity AT (antibodies) in the respective clearing of the active centres of toxins within 20 days that causes «transition» of an immune complex in «an infectious condition» lays. Clinically this period corresponds to a wave of late complications. The author considers that it is better not to use Glucocorticoids and nonsteroidal anti-inflammatory drugs (NAID) without special need (the note of the author).

By the way, Sangviritrin the CIC (circulating immune complexes) in blood of patients reduces, but the preparation approaches not to all (the note of the author).

As Aetiopropic a treatment method at a diphtheria are approved – Tactivin, Prodigiozan, Splenin which joined in a traditional complex of the medical products received by patients though, earlier these preparations were considered auxiliary for treatment (the note of the author).

As a whole Immunotropic efficiency of base treatment of disease has appeared not high, a number of immune indicators was not normalised.

Among the basic targets differentiated Immunocorrection indicators humoral immunity appear mainly. Most actively eliminate frustration of immune reactance of combination Splenin + Tactivin and Prodigiozan + Tactivin.

Among monopreparations it has appeared the most effective - Splenin, further Prodigiozan. Effectiveness thymus a preparation (Tactivin) was minimum. However, in clinical practice this modulator is most often applied (the note of the author)! The author has found effective Immunomodulators for diphtheria treatment (the note of the author).

For disease of a diphtheria seasonal prevalence is characteristic. During all analyzed period autumn -winter seasonal prevalence was marked characteristic for this infection. For this period, it is necessary 60 - 70 % of annual disease. It means that other infection (the note of the author) in the winter joins. If the flu virus joins, that syndrome Gijena-Barre can be very expressed (the note of the author).

At the bad organisation of preventive actions (it not inoculations should be, and sanitation of the centres of an infection) disease of a diphtheria during a season increases in 3-4 times.

Pathogenesis and pathological anatomy

In an origin of local fabric frustration, great value hormonal factors, instead of direct action of diphtheritic toxin on corresponding bodies (have V.D.Ahnazarova (1959), Tonutti (1950), Frick, Lampl (1952), Schmid (1957). And here is inoculations? They also aggravate illness, after all is entered not only an antigene, and an infectious antigene (the note of the author).

In formation of diphtheritic process, in its localisation, weight of illness the age factor, the constitution of patients have important value. So, at adults and children of advanced age develops - a pharynx diphtheria, and at children of chest age - a diphtheria of a throat, a nose and rare localisations (the note of the author) is more often.

According to S.N.Rozanov's (1948), the croup amazes children aged till one year, the nose diphtheria - to 6 months, and the toxic form of a diphtheria of a pharynx - children is more senior 2 years. V.I.Molchanov in formation of a diphtheria of various localisation explains (1960) age difference anatomy-physiological features of a children's organism. More rare disease of children at chest age a pharynx diphtheria can be connected with hypoplasia's tonsils, absence at them nervous receptors in a mucous membrane and the lymphatic device of a pharynx. Quite often toxic or hypertoxic forms of a diphtheria develop at children with the thymic-lymphatic constitution accompanied by dysfunction тимуса, an exudative-lymphatic diathesis (the note of the author).

The originality of a clinical current of toxic and hypertoxic forms of a diphtheria is regarded, as display of the changed reactance of the organism expressed in anaphilactoid-allergic reaction, the caused specific and nonspecific sensitisation, something precedes infectious process, or arises on its extent, therefore the author and includes traditional herbal medicine in the form of the natural antibiotics having antiallergic components (train broth, solition or tableted forms Sangviritrin's) - the note of the author).

Presence of the vascular-haemodynamic Phenomenon of A.A.Koltypin's - a tachycardia and blood pressure decrease, a hypostasis cervical cellulose, hemoggages, extensive touches with necrotic disintegration, trombopenia, small heart, sharp emphysematous expansion of lungs, characteristic a capillaroscopic picture, feature of initial defeats in lungs in a kind interstitial a pneumonia, serous miocarditis, waviness of a current of illness and its other aspects.



Important value in pathogenesis the toxic form of a diphtheria is given to the jet condition of a macroorganism depending on factors of an environment and function of a bark of the big hemispheres of a brain.

For example, toxic forms of a diphtheria are more often observed at unorganized children. Organised children observe the certain mode supporting them an emotional positive tone (With. V.Veis, 1950; A.A.Markova, 1958). Easing of the higher nervous activity as a result of its overstrain is accompanied by fall of resistance of an organism to diphtheritic toxin and phagocytar activity of leukocytes.

Important! Imparted children vaccine BCG, as a rule, have already insufficiency phagocytos's, therefore and fall ill with other infections. There is not only decrease in immunity, which is registered on Immunogramms, but also a syndrome of strengthening of an infection, to the infected organism other infections (the note of the author) stick.

Important! The current of a diphtheritic intoxication at animals is influenced by the seasonal prevalence factor - during the spring-and-summer period disease proceeds harder, than in autumn-winter.

Important! Toxic forms of a diphtheria in some cases grow out of the mixed diphtheria-streptococcal infection!!!, to what bacteriological indicators (studying of microflora of a pharynx and a nose, haemoculture, definition antistreptolizine's and others) at patients with a diphtheria and at experimental animals testify. Against a streptococcal infection even insignificant subinfectious doses of diphtheritic toxin are capable to cause a picture of the heavy diphtheritic intoxication which are leading to death of animals.

Both local changes, and the general phenomena observed at a diphtheria, - a consequence of protective reaction of a macroorganism and damaging action of toxin.

Entrance collars usually are mucous membranes oropharynx (microbes use slime as an inhabitancy), a nose, throats, the eye is more rare, than genitals, an integument, therefore washing by an isotonic solution of sodium of chloride (Akva-maris and others) very much preemptively that the person was not ill (the note of the author).

Important! Receipt of leukocytes for realisation phagocytos's, but if phagocytos not made (it is reached by introduction of vaccine BCG, by the way, vaccine BCG does not rescue from a tuberculosis, but it do in the beginning amplifies, creating resistant forms of a tuberculosis) the organism cannot cope with illness (the note of the author). Exudate at an exit on a surface necrotic under the influence of toxin of covers turns to fibrin. To it promotes fabric tromboplastine, released owing to coagulation necrosis cages epidermis or epithelium. On a surface of the amazed covers it is formed fibrosis a touch which structure, except fibrin and necrotic superficial fabrics, includes diphtheritic microbes, their toxin, any other microflora, leukocytes. There is a syndrome of infringement of adhesion of

leukocytes when the organism cannot independently cope with an infection. And these syndromes – Imprinting's (inoculations do not give antibodies, but give complications), infection strengthenings, a respiratory distress-syndrome and others - result of long vaccination of children and the population. Complications from vaccines here accumulate, and the author registers them, as postvaccina syndromes. The author has learnt them to differentiate as has created differential diagnostics poisonings (Yatropatiis) - poisonings with medicines, vaccines, whey, xenobiotics (the note of the author).

Important! Because of cohesion of fibres of fibrin the touch gets an elastic consistence. It is formed within the first days of illness. At violent removal these days the touch is formed again, limfoid the fabric palatal of tonsils bleeds thus (the note of the author).

Exfoliation it occurs or under the influence of antitoxic medical whey, or owing to formation of antitoxic immunity in process of struggle of a macroorganism against an infection.

In pathogenesis toxic and hypertoxic forms the preliminary sensitisation of an organism as a result of the diseases transferred shortly before a diphtheria has great value. Toxin fixing in fabrics leads to characteristic defeats nervous and is warm - vascular systems. In a myocardium early arises parenchimatoz regeneration of muscular fibres up to full mioliz's and clumpy disintegration. Fatty regeneration with the subsequent destruction of miofibrillas and formation diffuse a sclerosis is characteristic. Changes in peripheral nervous system proceed on type parenchimatoz of neuritis. At development polyneuritis defeat guttural, intercostal, diaphragmatic the nerves, leading to a paralysis of respiratory muscles with development of the sharp respiratory insufficiency which is one of causes of death is especially dangerous. Changes in other bodies in the basic are characterised by toxic defeat. In adrenal glands blood circulation frustration, destruction cages up to full necrosis and disintegration can be marked. In kidneys quite often there is a picture toxic nephrosis.

The incubatory period at a diphtheria makes from 2 till 10 days. Clinical forms: in connection with various localisation of local process and expressiveness general toxic the phenomena the diphtheria differs variety of clinical forms.

The majority of patients (66,7-82 %) transfer the localised form of a diphtheria. The second place is occupied with a toxic diphtheria, then - extended and a diphtheria of rare localisations.

Important! In former years diphtheria hyperdiagnostics took place, and its diagnostics, but not preventive maintenance and treatment (the note of the author) now has improved.

Most often diphtheritic process is localised in oropharynx. On a share of a diphtheria of a pharynx 90 % of all cases are necessary.

At the localised form touches settle down only on tonsils and do



not leave for their limits. Disease begins sharply, usually with rise in temperature of a body to 38-39°C and occurrences of poorly expressed symptoms of an intoxication. Children complain of the general indisposition, a headache, insignificant pains at swallowing.

At survey the general condition of the child is a little broken, the small increase regional lymph nodes from both parties, less often on the one hand is marked. Lymph nodes are a little painful, mobile.

Depending on character of defeat of a pharynx distinguish filmy, islet and catharal forms of the localised diphtheria of a pharynx. The filmy (continuous) form at which the film of grayish colour, smooth with nacreous shine, with the accurately enough outlined edges, covers all limfoid a fabric tonsil is most typical. The film settles down on a surface tonsil, difficultly acts in film. At its violent tearing away the fabric tonsils bleeds, and the filmy touch is not pounded between two subject glasses at dab capture.

At islet to the form of the localised diphtheria of a pharynx touches look like islets of various size, settle down usually out of lacunas on an inside tonsil. Edges islet touches more often rough, they as though crawl over a fabric tonsils. At this form of a diphtheria temperature usually low-grade. The general condition of the child is a little broken. Sometimes happens sugar candies from a throat for resorbtion on a mouth for treatment or an irrigation tonsil for treatment (the note of the author).

Catharal the form concerns atypical forms of a diphtheria of a pharynx. At this form there is no the most characteristic sign of a diphtheria – fibrinous a touch. Leading symptoms are hyperemia and some puffiness of tonsils. The feeling pershenie or awkwardness can be marked at swallowing. The temperature usually does not raise, intoxication symptoms are absent. The diagnosis in such cases is possible only on the basis of epidemiological data and detection toxigenic a diphtheritic stick.

The localised forms of a diphtheria of a pharynx without specific treatment can progress and pass in the extended.

The widespread diphtheria of a pharynx meets less often, than localised. The touch thus extends for limits tonsils on a mucous membrane of palatal handles, a uvula. Intoxication symptoms are expressed moderately. Disease begins sharply with rise in temperature. The general weakness, weakness, a headache, dream infringement, sometimes vomiting are characteristic. The patient is pale, languid, complains of pains in a throat. Regionar lymph nodes are increased to a large bean, are sensitive, but the hypostasis cervical cellulose's does not happen.

The toxic form is the heaviest form of a diphtheria of a pharynx. Disease begins roughly. From the first hours of illness the body temperature raises to 40°C, children become languid, sleepy,

pains in a stomach, in a neck complain of strong weakness, a headache and a pain in a throat, sometimes. In a pharynx from the first hours of disease are marked diffuse hyperemia and a hypostasis which quite often precedes occurrence of touches. At sharply expressed hypostasis tonsils adjoin. The soft sky handles and a small uvula edematous. Touches look like in the beginning gentle arachnoid a grid or gelatinous film which easily act in film, however on their place quickly appear again, thicken, condensed and extend. For 2-3rd day of illness touches thick, it is dirty - grey colour, completely cover a surface of tonsils, pass on the handle, a small uvula, the soft and firm sky. Hyperemia a pharynx by this time decreases, has a cyanotic shade, the pharynx hypostasis reaches the maximum expressiveness. Language is imposed, lips dry, cracked, from a mouth a specific is sweetish-luscious smell. Breath through a nose is complicated, snoring, from a nose sanious the allocation, irritating a skin round a nose, films on a nose partition are sometimes visible. A voice squeezed with a nasal shade.

Defeat of lymph nodes and occurrence of a hypostasis cervical cellulose's is characteristic. All cervical lymph nodes increase, sometimes they form the big conglomerate, size about an egg. At palpation they happen elastic and painful. Integuments over edematous fabrics are not changed, pressing without serious consequences and does not leave poles.

Depending on expressiveness and prevalence of a hypostasis cervical cellulose's distinguish a toxic diphtheria of I degree - the hypostasis cervical cellulose's reaches the neck middle; a toxic diphtheria of II degree - a hypostasis cervical cellulose's to a clavicle, a toxic diphtheria of III degree - a hypostasis cervical cellulose's below a clavicle.

To be continued....