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Standard requirements of Treatment of Anaphylaxive condition for Critical Care Medicine clinics witch limited resources
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Here are discussed problem of Acute Cardiac Failure and treatment standard of this disease in critical care medicine clinic. This standard includes diagnosis, care, treatment conditions and is supposed to be utilized by countries of limited resources in critical care medicine clinics. So, bed cost of each day is not more than 300,0-500,0 US.

Key Words: Anaphylaxive condition**,** Critical patients, Blocs of information Standards ,Blocs of Actions

Bloc of information

It is one of the most dangerous revelations of allergy. The term anaphylaxia is established by P. Portie ans S. Ricche, 1902. The development of anaphylaxive shock is caused by dexatran, benzylpeniciline, ampicyline, bactrim, ibuprofen, cymetidine, diazepam, erythromycin, asparaginase, diklophenac, hydrocortizone, heparin, indometacine, corticotrophin, baralgine, aminophiline, and others. From anasthetic means thyopental is the most frequent cause of allergic reaction. Shock reaction is developed after usage of miorelaxants during surgical interferes apart from anesthetics. Such reactions are frequent when roentgen-contrastive means are used. In USA once a year 8 millions of angiogpraphy are conducted and in 1,7% various kinds of shock reactions develop. Development of allergy and anaphylaxia are possible after usage of any drug.

Pathogenesis: drug-related shock reaction can be divided as anaphylaxive and anaphylactoidal ones. The differentiation of them is difficult because of indentical clinical images. Without specific analysis it is impossible to detect whether a reaction is anaphylaxive and in it antigen-antibodies's i immune complex or it is anaphylactoidal and immune mechanism is not registered in it. The differentiation attempt of these reactions firstly was carried out in 1979 at Shefield symposium in England. It was acclaimed that at the time of anaphylactoidal reaction immune methods of diagnostics are negative and anaphylaxive shock means an existence of allergen.

Signs characteristic for anaphylactoidal coma are:

- Inexistence of a specifiv immuneglobulins towards treating medicinals;
- Reaction after consumption of medicinal drug;
- Identical clinical image after injection of drugs of various chemical structure.

Anaphylactoidal reactions are coniditoned by a direct release of histamine and other endotoxins from fertile cells by a direct influence of treating drugs. In this reaction immune system. Severity of reaction depends on the speed of drug injection in an organism, concentration of the drug, localization of fertile cells in vascular system and unity of these factors. The direct releasing of histamine is not studied mechanism in details. There are various drugs which cause histamine to be released from cells: amonium compounds, a-tubocurarine, succinile-choline, anesthetics, symphatomimetics, dichlorisoprenolole, phenothyazines, hypotensive drugs, alkaloids, atrophine, papaverine, kinin, rezerpine, antibiotics, dextrane, polyviline, contrast substances and others. These drugs are very different from each other according to chemical-physical peculiarities so it is impossible to predict a development of anaphylactoidal shock. At the time of anaphylaxive reactions during the first contact of drug-patent T and B lymphocytes mediators are released which are neutralized in the process of generation of antigen-antibody complex. At the moment of the first injection of a drug in organism uncontrolled histamine shot can take place and the second injection of drug can cause decompensation of anti-histamine system by means of releasing other mediators a lot. In development of anaphylaxive shock histamine role is already known, it is shown that in immunologic stage of anaphylaxive shock activity of tissual and serum-related histidine-decarboxilase, cholinacetylase and proteasis inhibitors is reduced. At the time of anaphylaxive shock after activation of these ferments histamine, serotonine, kinins and anaphylaxive factors are massively released. In an organism, histamine is generated in aids ofdecarboxylization of histidine, rust-recovery ferments and co-factor piridoxale-5-phosphate. In normal conditions, histamine exists in smooth and transversal-lines muscles, blood cells, liver, gastro-intestinal tract, thin blood vessels‘ walls and spleen. A lot of histamine is in fertile cells of connective tissue. In different cells fixation of histamine happens by participation of H1 and H2 receptors and Ca2+ ions. Exceeded amount of histamine can be localized in liquid area and without elevation of it’s level can be expressed as red skin, itch, broncheal spasm, sometimes cardiac arrest. When histamine releasing has a generalized character then reaction is more severe and tachycardia, hypotony, blood accumulation in capillary web, tissual congestion, shock and cardiac arrest are developed. These clinical signs are mainly caused from dependence of histamine on H1 and H2 receptors. H2 receptors are analogoues to beta-adrenergous ones, and H1 receptors-alpha-adrenergous ones. It must be taken into consideration that there are a positive and negative facts of the histamine theory.
Anaphylaxive shock’s confirming facts of hystamine theory are:

- Similarity between anaphylaxive shock and poisoning from histamine clinically;
- Histamine burst in blood while anaphylaxive shock from tissues;
- Histamine ability to cause smooth-muscular organs to compress, wide capilaries, irritation of vegetative nervous system.

Against histamine theory og anaphylaxive shock are the following statements:

- A direct irritation of various departments of nervous system without participation og histamine by means of allergens;
- Participation of other biological active substances in mechanism of development of anaphylaxia;
- Difference between histamine's burst between pharmacological histamine and anaphylaxive shock-related histamine;
- Ineffectiveness of anti-histamine means at the time of anaphylaxive attack.

In pathogenesis of anaphylaxive shock complement system activation of complement system is very important. The complement system contains plasma protein groups, initiators of their activation are immuneglobulin, microbes' viability products, toxins, and proteolytic ferments. The activation of complement is reached by generation of high-specific ferments. When it is activated drug at first afects on properdine and creates complexes. Activated properdine along with C3Paaza create C3-proactivator. The last one activates C3 components. This C3 component is immuneglobulin with moleclar mass 180000D. Concentration of it in blood is 1500mkg/ml. The alternative way of activatinc C3 is the following : → **P** → **C3PAaza → C3PA → C3.**

Complements C3 component's following activation along with Ca+ ions are caused by insulin, endotoxins and immuneglobulins' aggregates. Dissolve fragments of C3 then condition in activation of C5, C6, C7, C8, C9 components. C5-C9 multivalent complexes are generated peoducts of which are connected with cellular membrans, dissolve them and burst lots of mediators. A healthy organism is not able to protect itself from activation of complement with following degranulization of cells. C1 estherase inhibitor blocks activation of the complement; C3 inactivator conditions in a normal ongoing of an alternative way; anaphylatoxin's inactivator suppresses C3-C5 components' action. The reaction of activation of complements takes place without any clinical changes in healthy persons. So we must mentioned that the activation of complement is not a athogenetic factor but the disorder in regulation plays a significant role in development of clinical signs. It is notable that apart from the alternative way of activation of anaphylaxive shock an organism must be sensibilized by such substances which have an ability to create a specific antibodies. The last mentioned ones condition in releasing of biologically active substances and

anaphylaxive shock while contact with antigens. Consequently there can be divided 4 stages of anaphylaxive shock: sensibilization, immunokinetic, athochemical and pathophysiological. In immune process there are distinguished inductive and effectoral phases. During inductive phase a sensibilization towards a drug takes place. During this period factors which cause sensibilization are the most significant ones. They include peculiarities of drugs and organism of a person. Effectoral phase is generated when there is a second contact with antigen. According to immune mechanism, all allergic reactions are divided into two general groups: T-lymphocyte dependent and B-lymphocyte dependent. According to this classification, drug-related anaphylaxive shock implies B-lymphocyte dependent reactions with participation of IgE. Antibody IgG is fixed on a target organs' cells. Antigen-antibodies' reaction occurs on a cellular surface on histamine and by releasing of other vasoactive amines. T and B-lymphocytes are general immunecompetent cells which condition in a development of immune response when contacting with allergen. When T-lymphocytes make contact with drug means they mobilize their immune abilities at the expanse of realization of cellular immune response. In aids of T-lymphocytes antigen is neutralized, T-helpers and T-killers transfer irritation B-lymphocytes which are converted into plasmocytes and at the same time T-supressors affect on B-lymphocytes causing tolerancy of them towards anrigen. Antibodies which are discharged from plasmocytes appear as immuneglobulins and are divided into 5 classes: : IgM; IgG; IgA; IgD; IgE. In development of anaphylaxive shock IgE plays a significant role that is responsible for formation of anaphylaxia and acts as reagin.

It must be mentioned that anaphylaxia can be developet as an allergic reaction of III type. For this type of reaction a development of antigen-antibody complex in conditions of exceeded antigen occurs. The generation of the complement takes place with participation of IgG and IgM. Complexes generated by antigen-antibodies condition in a fixation of blood serum's complementary albumins. C3, C4, C5 and other components of complemets activate antigen-antibodies' complex and cause releasing of cells' dissolving decomposition products with creation of anaphylaxins. From these cells histamine is released, proteolytic ferments and vasoactive amines. Usually, during such reaction, target-cells are in capillaries and arterioli endothelium. In this case, allergic reaction causes serum-realted disease, a phenomena of artius. In rare cases when such reactions take place, development of anaphylaxive shock is related to a level of complement activation and fixation of it in cells of an organism. When antigen-antibodies fix on neutrophils and plateles some conditions of anaphylaxive shock generate.

Clinic. There are distinguished generalized, with blood circulation, asphysive, cerebral and abdominal forms. Generalized form occurs in a majority of patients. A patient suffers from fullness and discomfort. In majority develop a feeling of death, dizziness, vomiting, cough, weakness, itching of hands, head, face, blood

accumulation in facial area, heaviness in chest area, cardiac pain, difficult to breathe, headache, when the shock is sudden then sometimes breathe and heartbeat stop suddenly and there is no possibility to survive a patient. From objective symptoms we must distinguish hyperemy of a skin surface or paleness and cyanosis, egsanthemes, congestion of eyelids and face, sweating.

Majority of patients have convulsive attacks, tachycardia, arrhythmia; heartbeat is dull, arterial pressure is low, respiratory disorders take place, cough, patient has a foam from mouth. By austiculation we can hear thick-bubbly wet wheeze and the image of "mute" lung.

When there is a vascular form, patients suffer from pain in chest area, sharp reduction in arterial pressure, dull cardiac tones, weak pulse, disorder in rhythm; spasm of peripheral blood vessels is developed or widening of them, disorder in microcirculation. Asphyxive form is marked by failure of respiration, congestion of larynx mucosal area and bronchial spasm of various level, pulmonary intestitional or alveolar swelling.

Cerebral for is marked by psycho-motoral irritation, disorder of consciousness, convulsions and respiratory arrhythmia. Is severe cases symptoms of brain swelling occur, ephylepsia status is developed. Sometimes symptoms of blood circulation damage are visible.

For amdominal forms there are characteristic symptoms of acute stomach that sometimes causes misleading while diagnosing. There are slight disorders in consciousness, insignificant decreased arterial pressure, symptoms of bronchial spasm and respiratory failure are slightly expressed. Convulsive symtoms are rare.

According to ongoing there are distinguished progradiental, resistentive, prolonged, reoccurring, and abortive types of anaphylaxive shocksL resistentive ongoing is the most dangerous one that ends lethaly in 90%. This type is frequent during generalized form of anaphylaxive shock: patients suffers from a rapid fall of arterial pressure, damaged consciousness and respiratory failure. Such type of shock condition is resistant towards anti-shock therapy and progresses in development of pulmonary congestion, low arterial pressure and deep coma.

At the time of progradiental ongoing damaged consciousness is expressed along with spoor condition; in beginning stage functional changes in vascular tonus and respiratory failure occur. Such type has more reliable outcome. Prolonged from of anaphylaxive shock is expressed by typical clinical symptoms and prolonged ongoing is only expressed after anti-shock theraphy that gives a timely and partial effect. It is worthy to note that anaphylaxive shock ongoing is complicated by pneumonia, hepatitis, meningeal-encephalitis and others. The prolonged shock ongoing occurs in patients who were treated with Biciline that increases a lethal outcome because this drug remains in an organism for a long time. Moreover, stoppage of anti-shock treatment causes a reoccurance of shock symptoms again in a short period of time: reccurancing ongoing is marked by a repetitional development

of shock after elimination of it's symptoms. This type is often when we have a deal with remedy-related shock. Sometimes reccurences have more acute and severe ongoing than newly generated shok and are more resistant towards medicine. Treating also becomes difficult because of secondary somatic disorders. Abortic ongoing has more reliable outcome. Is frequent in patients who choose self-treating and asphyxive variant is developed at that time than needs differentiation from asthma status.

Treatment. There is provided the following scheme for elimination of anaphylaxive shock:

- Stop injection of a causing of anaphylaxive shock;
- Above a causing on an artery application must be made;
- A patient must be placed on back with head down and upper respiratory ways must be free. In case on need artificial respiration must be conducted "mouth-in-mouth" and clean oxygen must be provided;
- In muscles adrenaline injection and continue per 10 minutes until elevation of arterial pressure;
- In case of ineffectiveness adrenaline must be injected intravenously or replace it with noradrenaline; in case of cardiac arrest reanimation of cardiac-pulmonary system must be conducted.
- If acute respiratory failure develops then APV is essential sometimes.

It is noteworthy that anaphylaxive shock's clinical variants are different from each other according to treatment mechanism. When there is a vascular for treating is directed towards preserving arterial pressure. Vasopressive means cause elevation of arterial pressure and then a rapid falling of it is described; for achieving a stable result usage of plasma substitutes and glukocorticoids. At the time of asphyxive form when bronchial spasm evens are prevale broncholytic means are essential , corticodteroid drugs and inhalations of salbutamole, berotek or terbuataline. When there are acute congestion of larynx mucosal membrane and respiratory failure aspitation of mucosa from airways is essential, a patient must be provided with moisturized oxygen. Described action may be innefective so a patient must be transferred onto APV. When we have a deal with cerebral variant usage of diuretic, glucose and anti-convulsion medicine is recommended.

When ephylepsive status is developed anti-convulsive means must be utilized. At the time of abdominal form anti-shock complexive therapy is conducted. A syndrome of pain is a result of pathological changes into internal organs. In this period a patient must have repetitional injection of catecholamines, corticosteroids , antihistamine medicine, diuretic and analgesic means.

Prophylactics: there are known some supporting factors of development of anaphylaxive shock:

- Immediate allergic reaction in anamnesis;

- Existence of atopic disease;
- Increased reaction on histamine;
- Existence of hidden spasmophilia;
- Chemical-pharmacological peculiarities of medicine.

In order to determine content of histamine in serum there are used radioimmune test. By utilization of this method there was revealed a direct connection between histamine content in serum and anaphylactoidal reaction's clinical symptoms. A large amount of histamine is released at the second minute when allergen is injected. The intensiveness and concentration of it depends not only on the dosage but also a level of anaphylaxive reaction's cause. It must be noted that patients who underwent anaphylaxive shock in the past are difficult to treat. For prophylactics of a repetitional shock development of so-called cross reactions are at the center of attention with polyvalent sensibilization. Cross reactions are mostly developed after usage of means similar according to chemical structure.
Development of anaphylaxive shock must be predicted when:
W (P/ N/M) = W (P) * P (N/M/P) / P(N/M) where (P/N/M)- N- likelihood of shock development, M-anamnesic case, when anaphylaxive shock likelihood is equal to 0; this likelihood is calculated in accordance with greek formula:
P(N/M/P) = C/N/M * P * (1-P)
Where C/N/M- is a number from development of case N. W(P)-P- priori density of likelihood index, so W(P)=CONST=18 P/N/M- N – a likelihood of shock at the time of anamnesic cases. If W(P)=1, then P/N/M=1(M+1).

Quinque congestion
Is a swelling of dermis and underskin cell, acute and local; synonims are angioneurotic congestion and urticarial.
Is a I type of allergic reactions and is based on an immediate burst of biologically active substances in blood circulation. Some part of these substances because of slowered diffusion from granuli are secreted lately. The effect of them is expressed with spasm of muscles, narrowing of post-capillary spinchter, and increase in blood vessel's wall's permeability, interstitial swelling and inflammation.
Clinic: deep skin's covers are damaged and underskin cellulose, facial skin is tight; lips, ears and tongue increase in size. Angioneurotic congestion is developed on mucosal membranes and causes damage of organs and systems. At the time of larynx congestion respiration becomes complicated. Diuretic events are frequent, symptoms of acute gastro-enteritis, appendicitis, intestine obstruction. Some cases are characterized by involving brain membranes. Quinque congestion lasts from several hours until days and disappears without signs. When allergy is food-related a process accompanied by gasto-intestinal damage has chronic character and lasts some months. Congestion of mucosa of gastro-intestinal tract can cause simulation

of acute abdominal pathology, it is marked by sydpeptic disorders, intensified intestinal perystaltics and peritonitis. Uro-genital tract's damage is revealed by symptoms of cystitis and acute urine retention. Localization of swelling on face is dangerous because brain membranes are involved in this process with meningeal symptoms and labyrinth system that are accompanied by clinical signs like dizziness, nausea, vomiting and etc.)

Diagnosis. Is collected after receiving anamnesis, clinical data, samples of skin towards allergen and other provocative causings, also on the basis of elimimation of diet. In blood eosinophilia is evident, lymphocytosis as well. In blood histamine, acetylcholine and neuramine acid are elevated.

Treatment. In case of development of laryngeal swelling and abdominal syndrome under skin 0,5 ml 0,1% adrenaline is injected or 1ml 5% effedrine solution, 30-40mg prednisolone or 125mg hydrocortisone intravenously or in muscles. Dehydrative theraphy is recommended: 4ml Lasix dissolved in 20ml 40% glucose intravenously. At the time of asphyxia intubation or tracheotomy are recommended. Destoxificative theraphy is reached by conducting plasmapheresis and enterosorbtion.

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Blocs of action

Code: 88224		Critical			Treatment period : 3,0 bed-days	
Level of medical support : II - III - IV						
J 46		Asthma status (critical condition)				
level	code	Pharmacologic treatment			number	
		Name	dosage	unit	Essential	Recommendation
	B__01	Block N 1-1, 1-2 – reception of patient			1	1
	B__02	Block N 2 -1, 2-2, 2-3, 2-4, 2-5 - diagnosis			1	1
	B__03	Block N 3-1, 3-2 – basic and aiding means			2	2
	B__04	Block N 4 - treatment of patient			2	2
	B__05	Block N 5 – water and electrolytes			1	1
	B__10	Block N 10 – correction of metabolic acidosis			2	2
	B__25	block N 25-1- nutrition			1	1

	B__34	block N 34 – pain management			2	2
	B__45	block N 45 – antibacterial therapy			2	2
	B__46	block N 46 – respiratory correction APV			1	1
	B__47	block N 47 – non-differentiated therapy			1	1
	B__49	block N 48 – sensibility of receptors			2	2
Result:		Recovery of vital functions, improvement of clinic-laboratorial analysis, Elimination of critical condition				

block N 1-1	
name	reception of patient:
subject:	Critical care medicine doctor, nurse, sanitarian
controlling:	Head of critical care medicine service
dates of implementation :	First hour of patient in clinic
characteristics of work:	Replace patients into bed
	Cleaning up of breathable ways
	Oxygen provision
	Attaching with monitor
	Catheterization of peripheral vein
	catheterization of urine bladder
	Send blood and urine for lab tests
	ECG monitoring
Implement:	block 1- 2
Indication:	All critical patients
Contradiction:	No
Result of implementation:	A patient is placed into bed, under permanent monitoring and all actions are performed as written in protocol
Notes:	Cancellation of block, work or conditions of change
Signing: doctor:	

block N 1-2	
name	reception of patient:
subject:	Critical care medicine doctor, nurse, sanitarian
controlling:	Head of critical care medicine service
Dates	the first hour of patient in clinic
Characteristics of work:	Evaluation of patient's condition by severity in aids of analogous digital scale, monitoring
Indication:	Evaluation of all patients according to digital-analogous scale
Contradiction:	No
Result:	Patient is involved in monitoring, condition is evaluated as---- points
Notes:	Cancellation of block, work or conditions of change
Signing: doctor	

block N 2-1	
name	diagnosis
subject:	Critical care medicine doctor, nurse, sanitarian, lab assistant, nurse assistant, radiologist
controlling:	Head of critical care medicine service
Dates:	First 6 hours of patient in clinic
	Following tests must be carried out:
	ECG
	X-ray of chest
	Blood test

	Urine test
	Coagulogram
	Electrolytes
	Balance of airs in blood and acid-alkaline
	Creatinine
	Sugar
	Bilirubine
	Total albumin
	Glasgow scale
	APACHE II scale
	Calculation of blood components in circulation
	Total analysis of liquor in pleura
Indication:	All critical patients
	Analysis of liquor is performed when there is a doubt about meningeal encephalitis
	Pleural punctate test is conducted when there is more than 700ml liquid in pleural cavity or in order to determine processes in pleura
Contradiction:	Take of liquor and pleural punctate can be postponed if there are acute respiratory failure and failure of blood circulation
	Liquor test can be postponed if there is a doubt on voluminous process in brain until CT of brain
Note:	Each tests are conducted once a week and in this period parameters that are sharply deviated from norm are also studied or it is doubtful that they are changed after one week of treating
Result:	Patients has all tests according to diagnosis
Cancellation of block, work or conditions of change	
Signature : doctor	
block N 2-2	
name	diagnosis
subject:	Critical care medicine doctor, nurse, radiologist, endoscopist
controlling:	Head of critical care medicine service
Dates:	First 24 hours in clinic
Description:	
Following tests must be carried out:	Echoscope
	Echocardioscope
	ECG
	Transcranial Doppler
	Fibro-gastro-deudenoscopy
	Bronchoscopy
Indication:	Echocardioscopy and transcranial Doppler must be conducted with all patients
	EEG at the time of post-anoxia injury, also in case of convulsive syndrome
	Gastroscopy+gastro-duodenal bleedings
	Bronchoscopy: urgent pathology of bronchi, impossibility to determine disorder of traumatic ways in aids of less invasive method.

Contradiction:	Gastroscopy and bronchoscopy can be postponed in patients above 70 years because of Acute respiratory disorder or blood circulation problems after decision of endoscopist.

result of work:	The studies were carried out to all patients in the study, except -
Notes:	These diagnostic methods are used in the case diagnostic tools used when found ineffective or less informative
Block, Cancellation, suspension or change working conditions.	
Signature: doctor	
block N 2-3	
name	diagnosis
subject:	Nurse radiologist, doctor radiologist
controlling:	Head of critical care medicine service
dates of implementation :	First 72 hour in clinic
Description:	CT
	Nuclear magnetic resonance test
	angiography or CT angiography
indication:	These studies are done with all of the critical patients when damaging or organs and tissues are likely to be.
	Nuclear magnetic resonance test is conducted when CT and other tests are not informative enough
	CT angiography is conducted in case of likelihood of aneurism
Contradiction:	MRI is not subjected to artificial ventilation of lungs patients or patients with any metal in the body at the time
result of work:	Necessary test is conducted with patient so that to diagnose a pathology
Notes:	Examinations are financed by the insurance company and the patient's owner.
Block, Cancellation, suspension or change working conditions	
Signature: doctor	
block N 2-4	
name	diagnosis
subject:	Critical care medicine doctor, nurse, laborer
controlling:	Head of critical care medicine service
Dates:	First 72 hours in clinic
Description:	Bacteriologic test
	Viral test
	Immunologic test
	Diagnostics of myocardial attack
	Diagnostics of severe sepsis
	Toxicological tests
	Hematologic test
indication:	These studies need to be done infectious, viral, immunological, toxicological, hematological pathologies, as well as myocardial infarction or sepsis are suspected.
Contradiction:	No
Result:	Patient has following analysis.
notes:	Examinations are financed by the insurance company and the patient's owner.

Block, Cancellation, suspension or change working conditions	
Signature: doctor	
block N 2-5	
name	diagnosis
subject:	Consultant
controlling:	Head of critical care medicine service
Dates:	48 hours after confirmation of consultation
Descriptions:	Following consultations must be carried out:
	Therapeutist
	Cardiologist
	Neuropathologist
	Neurosurgeon
	General surgeon
	Endocrinologist
	Hematologist
	Angiologist
	Oncologist
	Other specialist
indication:	Indication of consultation can be such problem or which cannot be identified or the implementation of the Protocol or its holding beyond the boundaries of critical care medicine doctor's competence, such as surgery, chemotherapy, and other.
contradiction: :	no
result of work:	Patient has mentioned consultation with doctor.
Notes:	The patient has consultations depending on the most severe symptoms.
Block, Cancellation, suspension or change working conditions	
Signature: doctor	
block N 3-1	
name	Provision with basic means
subject:	Critical care medicine doctor, nurse
controlling:	Head of critical care medicine service
Description:	Patient must be provided with basic means
	Catheter (one-time)
	Tube of tracheostomy
	Gastral pump
	Needle for lumbar puncture
	Intubation tube
	Catheter of Foley
indication:	All critical patients
Contradiction:	no
Result:	Provision with basic and aiding means
notes:	
Block, Cancellation, suspension or change working conditions	

Signature doctor:	

block N 3-2	
name	Provision with basic means
subject:	Critical care medicine doctor, nurse, sanitarian
controlling:	Head of critical care medicine service
characteristics	Patient must be provided with aiding means
	Cotton
	Bandage non-sterile
	Syringe (onetime)
	Alcohol
	Iodine
	Glove
	System of transfusion
	Syringe (10ml)
	Syringe(15ml)
	Syringe(20ml)
	Plaster
	poliviline tube
	Butterfly
indication:	All critical patients
contradiction: :	No
Result:	Basic and aiding means
Notes:	
Block, Cancellation, suspension or change working conditions	
Signature: doctor:	
block N 4	
name	Take care of patient
subject:	Critical care medicine nurse, sanitarian
controlling:	Head of critical care medicine service
Dates:	Once a day 10.00
Characteristics:	Cleaning up mouth with antibacterial solutions
	Prevention of bed sores (by means of camphoric alcohol, washing procedures)
	Bowel movement per2-3 days and if necessary enema
	Enteric nutrition 4 times a day according to defined calories in advance Take care of vein and urine bladder catheters
	Usage of gloves and onetime means
indication:	All critical care patients
Contradictions:	No
Result:	Patient is cleaned up, maintained
notes:	Onetime cleaning up procedure of patient with wet wipes Block, Cancellation, suspension or change working conditions
Signature: doctor	

block N 5	
name	Provision with water and electrolytes
subject:	Critical care medicine doctor, nurse
controlling:	Head of critical care medicine service
Dates:	
Description:	Sodium chloride 0,9% 500მლ.
	Potassium chloride 4% 200მლ.
	Calcium chloride or gluconate 10-30მლ.
	Magnesium sulphate 25% 15ml per day
Indication:	All critical care patients
Contradiction:	A higher than normal rate of electrolyte
result of work:	Water and electrolyte balance is corrected
Notes:	Block, Cancellation, suspension or change working conditions
Signature: doctor	
block N 13	
name	Hemodillution, correction of perfusion.
subject:	Critical care physician, critical care nurse.
controlling:	Head of critical care medicine service
Dates:	
Description:	Heparin 5000 un per 6-8 hours, dextrane- 400ml, sodium lactate solution-2500-3000ml
indication:	Arrhythmias dangerous for life
contradiction: :	Hypertension; there is no an absolute contradiction.
Result:	Correction of arrhythmia
notes:	
Block, Cancellation, suspension or change working conditions	
Signature: doctor:	
	block 29-1
Name:	Antibacterial theraphy
Subject:	Critical care medicine doctor, nurse
Controlling:	Head of critical care medicine service
Dates:	
Description:	Ceftriaxone 1gr per 12 hours; avelox 400mg infusion per 12 hours; doxacycline 100mg per 8 hours.
Indication:	Existence of inflectional process
Contradictions:	Allergic reaction towards any antibiotic
Result:	Prevention and treatment of inflectional process
Notes:	Antibiotic is selected in accordance with sensitivity
	Block 29-1
Name:	Oxygenation of critical patient on spontaneous respiration
Subject:	Critical care medicine doctor, nurse

Controlling:	Head of critical care medicine service
Dates:	
Description:	Provision of oxygen is maintained by following means: 1. Nose canula, simple mask, venture mask, mask with reservoir– 24-60%, concentration 1-6 l/min flow
Indication	all critical patients
Contradictions:	none
Result:	Showing of external respiration are satisfactory
Notes:	Showings of oxygenation must be maintained on the background of 5l/min higher than SO O2-90%. In opposite case APV must be utilized.
	Block 29-3
Name:	Artificial pulmonary ventilation
Subject:	Critical care medicine doctor, nurse
Controlling:	Head of critical care medicine service
Dates:	
Description:	Initial parameters of ventilation in adults
	FIO2100% maintaining < 60%, to avoid toxicity of oxygen and pulmonary injury
	Respiration rate (ღღ) 8-12min. 18-24/min to reach therapeutic ventilation
	Regimes SMV, SIMV, SIPAP, BYPAP
	Inhalation volume (TV) 6-8ml/kg.
	Inhalation flow speed (IFR) 60ლ/წთ
	Inhalation/exhalation correlation (I/E) 1/2½- 1/3.
	Plateau pressure <35ხმ H2O must be maintained low that maximal showing to avoid barotrauma
	(PIP)<45 ხმ. H2O
	pressure support and positive end-expiratory pressure (PEEP) 5sm. H2O.
	Cardiac volume in patients with hypovolemia
Indication:	Respiratory failure caused from various pathologies
Contradictions:	Bullous lungs
Result:	Patient has artificial pulmonary respiration and all necessary procedures

Notes:	Applications of all parameters is not easy during named regimes because technical characteristics of various respiratory apparatus are different: rate >20 can be increased by PEEP. Elevated volume can cause danger of barotraumas and cause damage associated with ventilator. Extremely low showing of IFR can increase PEEP because of lack of inhalation time. Extremely high showing of IFR can increase PIP. Increased correlation can be effective at the time of acute obstruction or COPD. Transverse correlation (2:1) is used for elevation of PAO2 at the time of severe hypoxia. PIP must be maintained at low levels(is less important than pressure of plateau)
Block, Cancellation, suspension or change working conditions	
block N 34	
name	Non-differentiated therapy
subject:	Critical care medicine doctor, nurse
controlling:	Head of critical care medicine service
Dates:	
description	

drug	dosage	unit
Diazepam	10mg/2ml	amp
ketamine	500mg/10ml	bottle
Atropine	1mg/1ml	amp
Adrenaline	1mg/ml	amp
Prednisolone	30mg/ml	amp
Klonidine	0,15mg	injection
Digoxin	50mkg/ml	1ml
Dopamine	200mg/5ml	bottle
Forudemid	20mg/2ml	amp
Insulin short action	400 IU/10 ml	bottle
Neostigmine	2,5mg	bottle
Aminophylline injection	250mg/10ml	amp
Calcium gluconate	0.1	amp
Lidocaine injection	10% 100mg/5ml	amp
indication:		All critical patients
Contradiction:		no
result of work:		
notes:		
Block, Cancellation, suspension or change working conditions		
Signature: doctor:		

block N 45	
name	Recover of receptor's sensibility
subject:	Critical care medicine doctor, nurse, transfusiologist
controlling:	Head of critical care medicine service
Dates:	
Description:	prednisolone 30mg 1ml amp
	dexamethasone 4მგ.1ml amp
indication:	Intoxications of various kinds, collagenoses, myasthenia, polyumieloradiculoneuritis, chronic obstruction disease of lungs, hydrothorax
contradiction: :	Disease of gastro-duodenal tract
Result :	Recovery of sensitiveness of receptors
Notes:	On the background of protection of stomach mucosa
Block, Cancellation, suspension or change working conditions	
Signature: doctor:	

block N 46	
name	Protection of stomach mucosa
subject:	Critical care medicine doctor, nurse
controlling:	Head of critical care medicine service
Date:	Permanently
Description:	Blocker of hydrogen ions (omeprazole, lansoprazole 1 caps per day, in the morning before meal),.
	Patients of gastro-intestinal disease in anamnesis need inhibitor of H2 receptors: for example: Zantac 25mg-1ml 2 times a day
	Gastric mucosa exhibition means Simalgel 10ml 4 times or sucralphate 1gr 2 times 20 min before meal 1გრ 2ჯერ კვების წინ 20 წუთით ადრე.
indication:	All patients especially one with pathologies of gastro-intestinal tract.

Contradictions:	no
result of work:	Protection of stomach mucosa
notes:	
Block, Cancellation, suspension or change working conditions	
Signature: doctor:	
block N 47	
name	Stimulation of bowel movement
subject:	Critical care medicine doctor, nurse
controlling:	Head of critical care medicine service
Dates:	Per 2-3 days
Description:	Guttalax
	cleaning enema at at 2-3 days
	If peristaltic is slow then proserin 1ml amp before 20 min before enema
indication:	All critical patients
contradiction: :	No
	Regulation of bowel movement
notes:	Enema must be conducted carefully in case of cardiac pathologies and thrombosis and proserin- epilepsy, hyperkinesis, bronchial asthma, stenocardia and intestinal obstruction of mechanical character
Block, Cancellation, suspension or change working conditions	
Signature: doctor:	

References:

1.Z.Kheladze,Zv.Kheladze-“Critical Care Medicine”, First book, Tbilisi, Georgia, 2015,-300pp.
.2.Z.Kheladze,Zv.Kheladze-“Critical Care Medicine”, Second book, Tbilisi, Georgia, 2016,-320pp

ზ.ხელაძე,ზვ.ხელაძე

ანაფილაქსიური მდგომარეობის მკურნალობის სტანდარტული მოთხოვნები შეზღუდული რესურსების მქონე კრიტიკული მედიცინის კლინიკებისათვის

კრიტიკული მედიცინის ინსტიტუტი,თბილისი,საქართველო.

განხილულია ანასფილაქსიური მდგომარეობის პრობლემა.მოტანილია აუცილებელი ინფორმაცია ანასფილაქსიური მდგომარეობის შესახებ.აქვეა წარმოდგენილი კრიტიკული მედიცინის კლინიკაში ანასფილაქსიური მდგომარეობის მკურნალობის სტანდარტი. ეს უკანასკნელი მოიცავს ავადმყოფის დიაგნოზის,მოვლის და მკურნალობის პირობებს, სტანდარტი გამიზნულია შეზღუდული რესურსების მქონე ქვეყნების კრიტიკული მედიცინის კლინიკებისათვის.ამ თვალსაზრისით თიოთოეული საწოლ-დღის ღირებულება არ აღემატება 300,0-500,0 აშშ. ოლლარს