«IMMUNOLOGY-CLINICAL IMMUNOLOGY»

General Educational Program of higher education **31.05.03 DENTISTRY**

Department: EPIDEMIOLOGY, MICROBIOLOGY AND EVIDENCE-BASED MEDICINE

1. The purpose of mastering the discipline: participation in forming *the relevant competencies* UC–1, UC-8, GPC-5, GPC-9, PC-6.

2. Position of the academic discipline in the structure of the General Educational Program (GEP).

2.1. The discipline "Immunology – clinical immunology" refers to the core part of Block 1 of GEP HE (B1.O.19).

The discipline is taught in 3 and 4 semester II year of study.

3. Deliverables of mastering the academic discipline and metrics of competence acquisition

Mastering the discipline aims at acquiring the following universal (UC) or/and general professional (GPC) or/and professional (PC) competencies

		The content	Code and	As a result of masteri	ng the discipline, the stu	dents should:
N⁰	tence code	of the com- petence (or its part)	name of the competence acquisition metric	Know	Be able to	Possess
1.	UC-I	Able to car- ry out a crit- ical analysis of problem situations based on a systematic approach, develop an action strat- egy	1.1 Knows: methods of crit- ical analysis and evaluation of modern scien- tific achieve- ments; basic principles of critical analysis 1.2 Able to: gain new knowledge based on analy- sis, synthesis, etc.; collect data on complex scientific prob- lems related to the professional field; search for information and solutions based on action, ex- periment and experience 1.3 Has prac- tical experi- ence: re- searching the professional activity using analysis, syn- thesis and other methods of intellectual activity: devel-	-methods of critical analy- sis -safety regulations and work in physical, chemical, bio- logical laboratories, with reagents, devices, animals; -dissemination of infor- mation in medical and bio- logical systems, use of in- formation computer systems in medicine and healthcare; -biosphere and ecology, the phenomenon of parasitism and bioecological diseases; -classification, morpholo- gy and physiology of mi- croorganisms and viruses, their impact on the health of children and adoles- cents; the spread of microbes, their impact on human health. Ecology of micro- organisms, their role in the circulation of substances. - methods of microbiologi- cal diagnostics -the use of basic antibacte- rial, antiviral and biologi- cal drugs	 be able to apply critical analysis methods be able to apply safety regulations to carry out sam- pling, labeling and arrange for the direc- tion of biological material from the patient and habitat objects for microbio- logical examination; interpret the results of the most common methods of laborato- ry and functional diagnostics; to justify from mi- crobiological posi- tions the choice of material for research during the diagnosis of infectious diseas- es; use physical, chemi- cal and biological equipment; work with magnify- ing equipment (mi- croscopes, optical and simple magnifi- ers); 	- critical analysis skills -work skills in compliance with safety regulations basic information conversion tech- nologies: text, tab- ular editors, Inter- net search skills of making a preliminary diag- nosis based on the results of laborato- ry and instrumental examination of children and ado- lescents; -information on the principles of steri- lization, disinfec- tion and antiseptic treatment of in- struments and equipment in order to avoid infection of the doctor and patient; -skills of making preliminary diagno sis based on the r sults of laborator and instrument

			oping an ac-		-use educational,	examination.
			tion strategy to		scientific, popular	
			solve profes-		science literature, the	
			sional prob-		Internet for profes-	
			iems		sional activities;	
2.	UC-8	Able to:	8.1 Knows: fac-	factors of harmful influ-	-identify harmful	-skills of profes-
		create and	tors of harmful	ence on vital activity	factors of vital ac-	sional activity in
		maintain	influence on	safety regulations and work	tivity	compliance with
		safe living	vital activity:	in physical, chemical, bio-	-to carry out sam-	safety regulations
		conditions	algorithms of	logical laboratories, with	pling, labeling and	at the workplace
		in everyday	actions in case	reagents, devices, animals:	arrange for the direc-	-skills of making a
		and profes-	actions in case	-dissemination of infor-	tion of biological	preliminary diag-
		sional life	of emergencies	mation in medical and bio-	material from the	nosis based on the
		nor the	and military	logical systems use of in-	natient and habitat	results of laborato-
		of the natu-	conflicts	formation computer sys-	objects for microbio-	ry and instrumental
		ral envi-	8.2 Able to:	tems in medicine and	logical examination:	examination of
		ronment.	identify danger-	healthcare.	interpret the results	children and ado-
		ensuring	ous and harmful	biosphere and ecology the	of the most common	lescents:
		sustainable	factors within	phonomenon of paragitism	matheda of laborato	information on the
		develop-	the framework	and historial discourses	my and functional	-information on the
		ment of	of its activities,	and bioecological diseases;	ry and functional	principles of steri-
		society,	create and main-	-classification, morpholo-	diagnostics;	lization, disinfec-
		including in	tain safe living	gy and physiology of mi-	-to justify from mi-	tion and antiseptic
		the case of a	conditions in	croorganisms and viruses,	crobiological posi-	treatment of in-
		threat and	avaryday and	their impact on the health	tions the choice of	struments and
		occurrence	everyday and	of children and adoles-	material for research	equipment in order
		of	professional file	cents;	during the diagnosis	to avoid infection
		emergency	8.5 Has practi-	-the spread of microbes,	of infectious diseas-	of the doctor and
		situations	in: participation	their impact on human	es;	patient;
		and min-	in planned exer-	health. Ecology of micro-	-use physical, chem-	
		conflicts	cises to work	organisms, their role in the	ical and biological	
		connets	out the rules of	circulation of substances.	equipment;	
			conduct in case	- methods of microbiolog-	-work with magnify-	
			of emergencies,	ical diagnostics	ing equipment (mi-	
			first aid; com-	the use of basic antibacte-	croscopes, optical	
			plies with safety	rial, antiviral and biologi-	and simple magnifi-	
			regulations at	cal drugs	ers);	
			the workplace		-use educational,	
					scientific, popular	
					science literature, the	
					Internet for profes-	
					sional activities;	
3.	GPC-5	Able to con-	5.1 Knows the	methods of examination	apply methods of	skills of examina-
		duct an ex-	methodology	and physical examination;	examination and	tion and physical
		amination of	for collecting	clinical picture, methods	physical examination	examination of
		the patient in	anamnesis of	of diagnosis of the most	of children and	children and
		order to es-	life and diseas-	common diseases; meth-	adults; interpret the	adults; diagnosis of
		tablish a	es, complaints	ods of laboratory and in-	results of examina-	the most common
		colving pro	and adults (their	strumental studies to as-	tion and physical	diseases in chil-
		fessional	legal repre-	sess the state of health,	examination of chil-	dren and adults;
		problems	sentatives).	medical indications for	dren and adults: di-	identification of
		problems	5.2 Is able to:	research. rules for inter-	agnose the most	risk factors for ma-
			collect com-	preting their results: inter-	common pathology	ior oncological
			plaints, anam-	national statistical classifi-	in children and	diseases: formula-
			nesis of life and	cation of diseases and	adults: send children	tion of a prelimi-
			disease in chil-	health-related problems	and adults to labora-	nary diagnosis
			dren and adults	(ICD): conditions requir-	tory instrumental	drawing un a nlan
			(their legal rep-	ing urgent medical core	and additional stud	for instrumental
			resentatives),	- risk factors for the occur	ies in accordance	laboratory addi
			identify risk	rence of infactious discas	with the ourrant pro	tional studios cor
			tactors and	as: a plan for laboratory	with the current pro-	sultations of sno
			causes of dis-	instrumental and addition	dontal modical corr	suitations of spe-
			5 3 Has practi-		demai metrical care,	cialist doctors; re-
		1	e.e mus practi		1	1

			cal experience	al studies in children and	clinical recommen-	ferral of patients to
			in: collecting	adults in accordance with	dations, taking into	instrumental, la-
			complaints,	the procedures for provid-	account the standards	boratory, addition-
			anamnesis of	ing medical care, clinical	of medical care; send	al studies, consul-
			life and diseases	recommendations, taking	children and adults	tations of specialist
			in children and	into account the standards	for consultations	doctors in accord-
			adults (their	of medical care:	with specialist doc-	ance with with the
			legal repre-	-fundamentals of differen-	tors in accordance	current procedures
			identifying risk	tial diagnosis of diseases:	with the procedures	for providing med-
			factors and	recognition of conditions	for providing medi-	ical care. clinical
			causes of dis-	arising from sudden acute	cal care clinical rec-	recommendations
			eases;	diseases exacerbation of	ommendations tak-	taking into account
			,	chronic diseases without	ing into account the	the standards of
				obvious signs of a threat to	standards of medical	medical care: in-
				the patient's life and re-	care: interpret and	terpretation of data
				auiring urgent medical	analyze the results of	from additional
				care	consultations by spe-	(laboratory and
				- clinical signs of sudden	cialist doctors for	instrumental) ex-
				acute diseases conditions	children and adults.	aminations of na-
				exacerbations of chronic	interpret and analyze	tients: making a
				diseases without obvious	the results of basic	nreliminary diag.
				signs of life-threatening	(clinical) and addi-	nosis in accord-
				requiring urgent medical	tional (laboratory	ance with the in_{-}
				care	instrumental) evami-	ternational statisti-
				care	nation methods: car-	cal classification of
					ry out differential	diseases and
					diagnosis of disassos	health related
					in children and	nrobloms (ICD):
					adulte:	problems (ICD),
1	GPC 0	GPC 5 Able	5.1 Knows:	sofaty ragulations and	to avaluate the main	assassment of the
4.	010-7	to assess	anatomy his-	work in physical chemical	morphofunctional	main morphofunc
		morphofunc-	tology, embry-	biological laboratories with	data physiological	tional data physi
		tional,	ology, topo-	reagents devices animals:	conditions and	ological condi
		physiologi-	graphic anato-	-pathological anatomy and	nathological pro-	tions and natho-
		cal condi-	my, physiology,	-pathological anatomy and physiology of human or-	cesses in the human	logical processes
		tions and	pathological	gans and systems possible	body associated with	in the human body
		pathological	anatomy and	pathological processes	contamination by	when solving pro-
		processes in	physiology of	associated with the vital	nathogenic microor-	fessional tasks
		human body	and systems	activity of microorgan-	ganisms including	diagnosis of infec-
		to solve pro-	5.2 Able to:	isms the effect of en-	viruses and fungi to	tious lesions of the
		fessional	evaluate the	zymes and toxins of bacte-	use laboratory	human skin and
		problems	basic morpho-	ria on homeostasis-the	equipment.	mucous mem-
			logical and	main disciplines for as-	work with magnify-	branes during the
			functional data,	sessing pathological pro-	ing equipment:	examination of the
			physiological	cesses in the human body	interpret the results	patient
			conditions and	-biosphere and ecology, the	of the most common	-skills to assess
			pathological	phenomenon of parasitism	methods of laborato-	the main patholog-
			human body	and bioecological diseases:	ry and functional	ical processes in
			5 3 Has practi-	classification, morphology	diagnostics, ther-	the human body
			cal experience	and physiology of micro-	mometry to identify	-information on
			in: assessment	organisms and viruses.	pathological pro-	the principles of
			of basic mor-	their impact on the health	cesses in the organs	sterilization disin-
			phological and	of children and adoles-	and systems of pa-	fection and anti-
			functional data,	cents:	tients:	septic treatment of
			physiological	-the spread of microbes	evaluate the main	instruments and
			conditions and	their impact on human	pathological pro-	equipment in order
			pathological	health. Ecology of micro-	cesses in the human	to avoid infection
			human body	organisms, their role in	body	of the doctor and
			when solving	the circulation of sub-	-to carry out sam-	patient.
			professional	stances.	pling, labeling and	-skills of making
			problems	methods of microbiologi-	arrange for the direc-	preliminary diagn
		1	E			in and a starting the

				cal diagnostics	tion of biological	sis based on the r
				-the use of basic antibacte-	material from the	sults of laborator
				rial, antiviral and biologi-	patient and habitat	and instrument
				cal drugs	objects for microbio-	examination.
				- the nature of the patho-	logical examination:	•••••••••••
				logical process and its	-interpret the results	
				clinical manifestations, the	of the most common	
				principles of pathogenetic	methods of laborato-	
				therapy of the most com-	ry and functional	
				mon diseases, in particular	diagnostics;	
				dental;		
5.	PC-6	readiness to	6.1 Knows: The	- methods of physical ex-	- use laboratory	- medico-
		collect, ana-	methodology	amination of patients (ex-	equipment;	functional concep-
		lyze com-	for collecting	amination, palpation, per-	work with magnify-	tual apparatus;
		plaints and	complaints and	cussion, auscultation).	ing equipment;	methods of sterili-
		other infor-	anamnesis from	- the procedure for provid-	interpret the results	zation, disinfection
		the patient	patients (their	ing medical care to adults	of the most common	and antiseptic
		(rela-	sentatives) The	with dental diseases	methods of laborato-	treatment;
		tives/legal	procedure for	rules of work and safety in	ry and functional	information on the
		representa-	providing medi-	physical, chemical, biolog-	diagnostics, ther-	principles of steri-
		tives), data	cal care to chil-	ical and clinical laborato-	mometry to identify	lization, disinfec-
		from his	dren with dental	ries, with reagents, devic-	pathological pro-	tion and antiseptic
		anamnesis,	diseases	es, animals;	cesses in the organs	treatment of in-
		interpreta-	6.2. Able to:	the chemical-biological	and systems of pa-	struments and
		tion of ex-	interpret the	essence of the processes	tients;	equipment in order
		amination	results of the	occurring in a living or-	to substantiate the	to avoid infection
		results, la-	examination,	ganism at the molecular	nature of the patho-	of the doctor and
		instrumental	strumental	and cellular levels;	logical process and	patient;
		nathologi-	pathoanatomical	biosphere and ecology the	its clinical manifesta-	skills of making a
		cal-	and other stud-	phenomenon of parasitism	tions, the principles	preliminary diag-
		anatomical	ies in order to	and bioecological diseases;	of pathogenetic ther-	nosis based on the
		and other	recognize the	- classification, morpholo-	apy of the most	results of laborato-
		studies in	condition or	gy and physiology of mi-	common diseases, in	ry and instrumental
		order to rec-	establish the	croorganisms and viruses,	particular dental; To	examination of
		ognize the	presence or	their impact on human	develop a treatment	patients; develop-
		state or es-	absence of a	health;	plan for children and	ment of a treat-
		fact of the	symptoms syn	- microbiology of the oral	adults with dental	ment plan for chil-
		presence or	dromes of den-	cavity;	diseases in accord-	dren and adults
		absence of a	tal diseases, the	methods of microbiologi-	ance with the proce-	with dental diseas-
		dental dis-	establishment of	cal diagnostics; the use of	dures for providing	es, taking into ac-
		ease, symp-	nosological	basic antibacterial, antivi-	medical care, clinical	count the diagno-
		toms, syn-	forms in ac-	ral and biological drugs;	recommendations,	sis, age and clini-
		dromes of	cordance with	scientific principles of	taking into account	cal picture in ac-
		dental dis-	the International	sterilization, disinfection	the standards of	cordance with cur-
		eases, the	statistical Clas-	and antiseptic treatment to	medical care.	rent medical care
		ment of nos-	Diseases	avoid infection when		procedures, clini-
		ological	6.3 Has practi-	working in dental practice;		cal recommenda-
		forms in	cal experience:	clinical recommendations		tions, taking into
		accordance	interpretation of	on the provision of medi-		account the stand-
		with the	the results of	cal care to patients with		ards of medical
		International	examination,	dental diseases		care
		statistical	laboratory, in-	Standards of medical care		determination of
		classifica-	strumental,	(The procedure for provid-		symptoms, syn-
		uon of and	and other stud	ing medical care, the		dromes of dental
		health-	ies in order to	Standard of medical care,		diseases, estab-
		related prob-	recognize the	Clinical recommendations		lishment of noso-
		lems and	condition or	on the provision of medi-		logical forms in
		other regula-	establish the	cal care, etc.)		accordance with
		tory docu-	presence or			the International
		ments of the	absence of a			Statistical Classifi-
		Ministry of	dental disease.			cation of Diseases
1	1	Health of the	1		1	

Russian		and Health-related
Federation		Problems and other
		regulatory docu-
		ments of the Min-
		istry of Health of
		the Russian Feder-
		ation

4. Volume of the academic discipline and types of academic work Total labor intensity of the discipline is 3 CU (108 AH)

Type of educational work	Labor	intensity	Labor intensity (AH) in		
			semesters		
	volume in	volume in			
	credit units	academic	3	4	
	(CU)	hours (AH)			
Classroom work, including	1,8	66	34	32	
Lectures (L)		14	8	6	
Practicals (P)		52	26	26	
Seminars (S)					
Laboratory practicum (LP)					
Student's individual work (SIW)	1,2	42	20	22	
Mid-term assessment					
credit/exam (specify the type)				test	
TOTAL LABOR INTENSITY	3	108	54	54	

5. Sections of the discipline and competencies that are formed

No	Compe-	Section	name	The content of the section in teaching units
JN⊵	tence code	of the dis	cipline	The content of the section in teaching units
1.	UC-1,	General	immu-	The concept of immunity. Types and forms of immunity. Antigens
	UC-8,	nology.		as carriers of structural foreignness and inducers of immunological
	GPC-5.	Immunity	of the	conflict. Basic differences between antigen-dependent and antigen-
	GPC-9	oral cavit	V	independent (innate) immunity. Schematic diagram of the immune
	PC-6	orur ou vit	<i>.</i>	response (from induction to implementation). The concept of humoral,
	100			cellular immunity and their effectors. Immunological memory.
		•		Immunological tolerance.
				Cells of the immune system. CD antigens. The main functional
				variants of T-lymphocytes.
				Central (primary) organs of the immune system. The results of
				antigen-independent differentiation of lymphocytes in the central organs
				of immunity (cloning, auto-tolerance, functional maturation of
				lymphocytes).
				Peripheral (secondary) organs/tissues of the immune system. Re-
				sults of antigen-dependent activation of lymphocytes in peripheral lym-
				phoid tissue (immunogenesis). Lymphocyte recirculation as the basis of
				the functional unity of the immune system.
				Antigens. Structure of antigenic specificity. Complete and incom-
				plete antigens. Submolecular organization of the antigen. The nature and
				sources of antigens. Structural and functional features of B- and T-
				epitopes. The concept of conformational and sequential (linear) epitopes.
				The relationship of antigens with antigen-presenting cells (processing of
				T-dependent antigens). T-dependent and T-independent antigens.
				Antibodies. The biochemical nature of antibodies. Source of
				antibodies. Submolecular organization of a typical immunoglobulin
				molecule (variable and constant domains). Hypervariable and skeletal
				sites of V-domains of immunoglobulins. Structural bases of specificity
				(antigen-binding function) of antibodies (paratopes). "Secondary"
				functions of antibodies and their structural basis.
				Isotypes (classes), allotypes and idiotypes of immunoglobulins.
				lsotypes (classes/subclasses) immunoglobulins: structural features,

	functions. Serum concentration of various classes of immunoglobulins.
	The dynamics of antibodies during the primary and secondary immune
	response: qualitative and quantitative seroconversion. Immunological
	The concept of the secretory immune system (mucosal immunity or
	mucosal immunity) Production structure and functions of secretory IgA
	(sloA)
	Cloning of B-lymphocytes. Selection of antigen-sensitive clones as
	the basis of the immune response. Polyclonal nature of the immune (an-
	tibody) response and its causes. Monoclonal antibodies (principles of
	hybridomic technology).
	Formation and differentiation of T- and B-lymphocytes. Features of
	presentation of antigens to B- and T-lymphocytes. The concept of B- and
	T-epitopes in the structure of antigens.
	Antigen-recognizing B-lymphocyte receptors. Basic receptors and
	their rearrangement during the immune response.
	CD-antigens and functional classification of T-lymphocytes.
	The main category of antigen-recognizing 1-lymphocyte receptors.
	structure, similarities and differences with B-tymphocyte receptors. The
	Functional cooperation in the system of antigenic receptors of B ₋ and T ₋
	lymphocytes (the concept of receptor complexes)
	Molecular and submolecular bases of B- and T-lymphocyte cloning
	The main human histocompatibility complex (HLA): genes and
	their products. The genetic basis of HLA polymorphism. HLA
	polymorphism as a basis for rejection of allogeneic tissues.HLA-1. The
	principle of structure, subclasses, structural (allelic) polymorphism,
	tissue localization, immunological function. HLA-2. The principle of
	structure, subclasses, structural (allelic) polymorphism, distribution in
	the body, immunological function. The concept of HLA restriction of the
	immune response (double recognition of antigens). Molecular basis of collective interaction of $CD4^+$ and $CD8^+$ T lumphoeutee with antigens
	represented by HI_{A-1} and HI_{A-2} "Professional" and "non-
	professional" antigen-presenting cells The principal mechanism of
	presentation of antigens to T-lymphocytes (processing of antigens by
	antigen-presenting cells). The concept of antigenic peptides presented to
	T-lymphocytes by HLA molecules (HLA peptides). HLA-dependent
	regulation of the immune response.
	The concept of induction, its components (recognition and activa-
	tion) and the main stages. Mediators (costimulators) of intercellular co-
	operation: their classification and functional characteristics. Costimulat-
	ing (auxiliary) signals in antigen-dependent activation of lymphocytes.
	The control regulatory link of T dependent immunity:
	CD4 ⁺ lymphocytes and the mechanisms of its relationship with B-
	lymphocytes and CD8 ⁺ lymphocytes
	Cytokines: biochemical nature, sources. polyfunctionality.
	mechanisms of action, classification, similarities and differences with
	homons. Cytokines and their role in the regulation of the immune
	response.
	Activation of CD4 ⁺ T-lymphocytes. Functional variants of T-helper
	cells (Th1, Th2) and their participation in the immune response.
	Activation of B-lymphocytes. Results of antigen-induced differentiation
	Development of immune responses to T-dependent antigens. T-
	T-lymphocytes, results of antigen induced differentiation
	Realization of the immune response (cellular and humoral link) and
	the concept of immunological memory Features of the interaction of
	immune effectors in the primary and secondary immune response.
	The complement system. The nature of the components, activation
	pathways (classical and alternative pathways). Biologically active factors
	of the complement system and their properties.

			Phagocytes. Histological profile of phagocytes: neutrophil granulo-
			cytes, macrophages - mobile and immobile, tissue macrophages, alveolar
			and peritoneal macrophages. Oxygen-dependent and oxygen-
			independent biocidicity of phagocytes. Stages of the phagocytic process.
			The concept of incomplete phagocytosis. Opsonins. The role of opsonins
			in phagocytic reactions.
			Effectors of specific (antigen-dependent) immunity. Antibodies.
			The formation of immune complexes as the basis of the antigen-
			eliminating function of antibodies. Functional cooperation of specific
			and non-specific factors in the implementation of the humoral immune
			antibodies.
			Specific effectors of T-cell immunity and their targets. Molecular
			bases and mechanisms of realization of the effector potential of CD8 ⁺ (T-
			killers, or cytotoxic T-lymphocytes) and CD4 ⁺ T-lymphocytes.
			Natural killers. Effect functions. The phenomenon of antibody-
			dependent cellular cytotoxicity.
			Antiviral immunity. Effectors of humoral and cellular immunity in
			the implementation of antiviral activity. Forms of implementation: com-
			plement-dependent and T-cell cytolysis, antibody-dependent cellular cy-
			totoxicity (macrophages, NK lymphocytes, neutrophils), the phenome-
			non of apoptosis. Non-specific mechanisms - interferon. Classification
			and biological properties.
			Protection levels (skin, mucous membranes, loose connective tissue,
			regional lymph hodes, blood. organs). Protection effectors and their man-
			tures of immunity in disasses caused by microorganisms intracellular
			narasites
			Factors of nonspecific resistance of the oral cavity Barrier func-
			tion of the mucous membrane and enamel of teeth colonization re-
			sistance. Oral fluid, its enzymes, lysozyme, complement, lysines.
			Features of phagocytosis in the oral cavity. Mechanisms of specific
			immunity of the oral cavity. Saliva immunoglobulins. Features of
			antiviral immunity of the oral cavity.
2.	UC-1,	Clinical	Analysis and interpretation of immunological parameters. Methods
	UC-8,	immunology.	of studying the immune status and principles of its assessment.
	GPC-5,		Assessment of oral immunity. The content of immunoglobulins sIgA, A,
	GPC-9.		G, M in saliva, gingival fluid, gingival pocket fluid.
	PC-6		Allergy. Definition of the concept and general characteristics
			of allergy. Classification of allergic diseases of types I, II, III,
			IV, V (according to Gell. Coombs). Allergy of anaphylactic type
			(anaphylactic shock, local anaphylaxis). Etiology, pathogenesis,
			clinic. Methods of specific desensitization. Allergy of the atopic
			type. Cytotoxic allergy. Immunocomplex allergy. Serum sick-
			ation of effectors of cellular immunity in delayed-type hypersen-
			sitivity Transplant allergy Drug food and insect allergies Skin
			tests and other methods of allergodiagnostics. Non-allergic forms of
			intolerance to materials and preparations used in dentistry. Emergency
			care in allergology.
			Sensitization of the body of medical personnel of dental institutions.
			Manifestations of immunopathology in the oral cavity. Intolerance
			of dental materials from acrylates: etiology, pathogenesis, diagnosis.
			Intolerance of latex and gypsum products. Intolerance to metal dentures:
			etiology, pathogenesis, diagnosis, prevention and principles of treat-
			ment. Amalgams, their characteristics, effect on oral tissues and the
			body.
	1		Autoimmune pathology, mechanisms of development, classification.
			immunopathogenesis of the main forms, immunodiagnostics.