

Abstract

Self-preparation guide for 2gr students.

Subject: "Safety science"

Topic 1.3 – 3 "Safety arrangements of civil population in the case of emergency or armed conflict. Medicalpersonalprotectiveequipment."

1. Medical personal protective equipment.

Medical personal protective equipment (we will use Russian abbreviation - ИСМЗ). Medical personal protective equipment is used for first aid in the case of emergency. This medical means can save life of civilians, prevent or decrease different injuries, enhance the resistance to some warfare, poisoning and bacterial agents.

Medical personal protective means (ИСМЗ):

- radioprotective drugs;
- antidotes;
- antibacterial remedies;
- means for partial decontamination.

There are prescribed medical personal protective means with special naming. You should learn them.

1. Individual medical kit– (АИ-2 - Russian abbreviation as usual);
2. Individual civil protection kit (КИМГЗ– Russ.abbr.)
3. Individual decontamination kit (ИПП-8, ИПП-10, ИПП-Н - Russ. abbr.)
4. Medical dressing kit (ППИМ - Russ. abbr.);
5. Preventive antidote (П-10М - Russ. abbr.)

Individual medical kit– (АИ-2)

- First aid for casualties.
- Assignment: prevention and decrement of harmful poisoning effect.

Nowadays there is КИМГЗ (Russian abbreviation) instead of АИ-2. АИ-2 is obsolete medical kit, but a significant number of АИ-2 was released. And considering their long-term storage and big quantities, it is possible to use these medical kits. Therefore, it is important to study them.

АИ-2 (individual medical kit):

- Plastic case;

- All drugs are ready for using, part of them are liquid (unit-dose syringe for injection), part of them are solid (pills).

Remedies from individual medical kit (АИ-2) are used in the case of burns, wounds, poisoning, radiation injuries, infectious diseases (mostly for prevention):

All remedies are in plastic case. There is a list (name and purpose) of all drugs on the inside of a case.

All drugs are ready for administration (unit-dose syringes and pills are packed in containers with color caps). So, it is easy to find necessary remedy quickly because of different color of each cap or container in the smoky area.

Composition of АИ-2:

- unit-dose syringe with white cap - Promedolum (2% solution) –narcotic painkiller. It is used intramuscularly, even through the clothes in the case of strong pain (bone fracture, massive wounds, burns etc.)

- unit-dose syringe with red cap – antidot Afine, 1 ml (Russian word – Афин) – used intramuscularly in the case of organophosphorouspoisoning (with sarin or soman gases).

After drug administration, unit dose syringe is pinned up to victim's clothes to inform rescuers about this therapy.

- radioprotective remedy PC-1 (Russ. abbr.) – Cystamine – protection from ionizing radiation. Used in pills – 12 pills (0,2 g) in 2 pink containers.

It is necessary to take into 6 pills an hour before expected radiation. Radioprotective effect lasts about 4-6. Next use of pills is possible in 6 hours.

- Tetracycline — antibiotic. Used in pills - 5 pills in 2 colorless containers. Single dose – 5 pills in the case of burns or wounds or risk of infectious contamination. Next use in 6-8 hours.

- Aethaperazinum — antiemetic drug. Used in pills - 5 pills (0,006 g) in blue container. Single dose – 1 pill in the case of sickness after trauma. Antiemetic duration is 4-5 hours.

Backupdrugs:

1. Taren —antidote oforganophosphorus_chemical agents. Red container with 6 pills (0,3 g). Singledose – 1 pill, nextusein 6 hours.
2. Sulfadimethoxine — antibacterial remedy. Colorless container with 15 pills (0,2 g). Used in the case of intestinal disorder caused by radiation. Single dose – 7 pills during the first day, next use – 4 pills every day (for 2 days).
3. Remedy PC-2 (Russ. abbr.) - iodic potassium – radioprotective drug. Used in pills —10 pills (0,125 mg) in white container. It is necessary to take it 30-40 minutesbefore possible radiation. Singledose – 1 pill. Nextdose – 1 pilleachday.

All remedies are recommended for children, dose depends on their age:

- From 8 till 15 years – half a single dose;
- Children younger 8 – quarter a single dose.

Individual civil protection kit - (КИМГЗ – Russ. abbr.).

Individual civil protection kit is designed for the first aid in the case of emergency with the aim to prevent or decrease lesion from poisoning, radiological or biological agents.

Table 10

№	List - quantity
1	Device for artificial respiration - 1
2	Medical dressing sterile package - 1
3	Antisepticnapkinwithhydrogenperoxide - 1
4	Hemostatic tourniquet - 1
5	Hydrogel, sterile, burn treating bandage with cooling and anesthetic effect (20cmx 24cm) - 1
6	Adhesive plaster(2cmx 5m) - 1
7	Non-sterile medical gloves - 1 pair
8	Medical non-sterile face mask - 1

9	Antisepticalcoholic napkin - 1
10	Ketorolac, pills 10 mg or solution for intravenous or intramuscular injection - 30 mg/ml

Individual civil protection kit (КИМГЗ - 147) is designed for:

- Personnel of the civil defense forces and civilians;
- Personnel of military formations.

Composition of individual civil protection kit (КИМГЗ) depends on type of emergency:

1. КИМГЗ – ФЭСТ– 147 (Russ. abbr.), basic composition - 9 enclosures – for personnel of military formations to provide first aid to casualties.
2. КИМГЗ – ФЭСТ– 147 (Russ. abbr.), basic composition - 9 enclosures + Ketorolac - for personnel of military formations to provide first aid.
3. КИМГЗ – ФЭСТ - 147, (Russ. abbr.), 14 enclosures – to provide first aid to casualties.
4. КИМГЗ – ФЭСТ (Russ. abbr.) – for personnel of formations who work in:
 - X-147- potentially chemical contaminated area;
 - П-147 - area of possible fires;
 - Р-147 - area of possible radioactive contamination;
 - Б-147 - area of potential biological contamination;
 - К-147 – zone of antiterrorist operations.
5. КИМГЗ – ФЭСТ (Russ. abbr.) – for adult civilians and children elder than 12 years who live in:
 - РД-147 - zone of possible radioactive contamination;
 - БД-147 - zone of potential biological contamination.
6. КИМГЗ – ФЭСТ (Russ. abbr.) – for children younger than 12, who live in:
 - РД1-147- zone of possible radioactive contamination;
 - БД1-147 - zone of potential biological contamination.

Individual decontamination kit (ИПП-8 – Russ. abbr.)

Assignment: skin decontamination from liquid warfare agents.

Composition:

- vial (bottle) with polydecontamination mixture;
- 4 cotton pledgets in plastic bag.

In the case of skin contamination with toxic chemical substances:

- Open the kit (rip the package);
- Moisten the pledget with liquid from vial;
- Wipe (clean) uncovered parts of skin, then wipe helmet of respirator, cuffs and collar.

Individual decontamination kit (ИИИИ-10)

Assignment: prophylaxis of skin lesion.

Composition:

- Aluminum balloon with nozzle with polydecontamination prophylactic compound. This liquid creates protective membrane in dermis.

Prophylaxis:

- Cover skin with this solution 30-40 minutes before entering zone of chemical contamination. Protective effect lasts 12-24 hours

Individual decontamination kit – (ИИИИ-11 – Russ. abbr.) –

anti-gas package with napkins.

First aid dressing package (ИИИИ - Russ. abbr.)

Assignment – aseptic bandage for wounds and burns or occlusive bandage in the case of pneumothorax.

Composition:

- Bandage;
- 2 three-layer pillows.

Antidote II-10 is used as a preventive remedy at the risk of poisoning with organophosphorus agents.

Single dose – 2 pills. Protective effect comes in 30 minutes, lasts 24 hours.

Pantocidum is used as mean for decontamination individual water supplies;
1 pill for 1 liter of water.

Questions for self-control:

1. Characteristic of medical personal protective equipment.
2. Individual medical kit – (АИ-2). Composition and assignment.
3. Individual civil protection kit- (КИМГЗ). Composition and assignment.
4. Individual decontamination kit. Composition and assignment.
5. First aid dressing package - (ППИМ). Assignment.
6. Antidote П-10М. Assignment.

Practice part

Medical means	Description
Individual medical kit (АИ-2)	<p>Assignment:</p> <ol style="list-style-type: none">1) to prevent or decline harmful effect of different toxic agents;2) first aid for casualties. <p>Nowadays there is КИМГЗ (Russ.abbr.) instead АИ-2. АИ-2 is obsolete medical kit, but a significant number of АИ-2 was released. And considering their long-term storage and big quantities, it is possible to use these medical kits.</p> <p>Remedies of individual medical kit (АИ-2) are used in the case of burns, wounds, poisoning, radiation injuries, infectious diseases (mostly for prevention):</p> <p>All remedies are in plastic case. There is a list (name and purpose) of all drugs on the inside of case.</p> <p>All drugs are ready for administration (unit-dose syringes and pills are packed in containers with color caps). So, it is easy to find necessary remedy quickly because of</p>

	different color of each cap or container in the smoky area.
Afine	<ul style="list-style-type: none"> - Antidote against organophosphorus chemical agents (sorin,soman,Vx – gases). - unit-dose syringe with <u>red</u> cap (1 ml) - contains atropine; - immediate effect after drug administration; - possible side effects: hallucinations and short-term memory loss; <p>How to use unit-dose syringe:</p> <ol style="list-style-type: none"> 1. Pick out necessary unit-dose syringe with your left hand, considering cap's color. 2. Turn the case clockwise with your left hand and take off the cap. 3. Press out the air from unit-dose syringe. 4. Wipe the site of injection with 5% alcohol solution of iodine (if there is no such ability, administer the drug through the clothes). 5. Administer the drug intramuscularly. <p>After drug administration, unit dose syringe is pinned up to victim's clothes to inform rescuers about this therapy.</p>
Taren	<ul style="list-style-type: none"> - Antidote against organophosphorus chemical agents. - <u>Red container</u> with 6 pills (0,3 g). Single dose – 1 pill, next use in 6 hours.

Medical means	Description
ИПП - 8	<p>Individual decontamination kit</p> <ul style="list-style-type: none"> - Assignment: skin decontamination from liquid warfare agents. <p>Composition:</p>

	<p>-vial (bottle) with polydecontamination mixture (125 ml)</p> <p>- 4 cotton pledgets in plastic bag.</p> <p>Duration of decontamination is 2 minutes.</p> <p>In the case of skin contamination with toxic chemical substances:</p> <ul style="list-style-type: none"> - Open the kit (rip the package) - Moisten the pledget with liquid from vial <p>Wipe (clean) uncovered parts of skin, then wipe helmet of respirator, cuffs and collar.</p>
ИПП-10	<p>Individual decontamination kit</p> <ul style="list-style-type: none"> - Assignment: prophylaxis of skin lesion. <p>Composition:</p> <ul style="list-style-type: none"> - Aluminum balloon with nozzle with polydecontamination prophylactic compound. This liquid creates protective membrane in dermis. <p>Prophylaxis:</p> <ul style="list-style-type: none"> - Cover skin with this solution 30-40 minutes before entering zone of chemical contamination. Protective effect lasts 12-24 hours.
ИПП-11	<p>Individual decontamination kit</p> <ul style="list-style-type: none"> - Anti -gas package with napkins; - Assignment: for prophylaxis skin lesions with chemical agents and their neutralization. <p>Composition:</p> <ul style="list-style-type: none"> - Airtight packaging; - Pledgets impregnated with special liquid. <p>Application:</p> <ol style="list-style-type: none"> 1. Rip the package, get out the pledget.

	2. Wipe uncovered skin surface with the pledget.
--	--

Honorable students!

After learning this material, you need to pass the test in Google-form. Please fill all gaps properly (name, faculty, number of your group).

<https://docs.google.com/forms/d/e/1FAIpQLSfl5MaaT5P7On5qnQ85Uvncohl0mTYX--aZwtBzNvBnmSaWoA/viewform>