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KARAKOL SHEEP LYMPHATIC FLOW FROM THE SKIN OF THE DISTAL AND WRAX OF THE FRONT LEG

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Annotation

The anatomo-topographic structure of the lymphatic system in the treatment of purulent paroxysms operative access to the lymph nodes, removal of lymph, treatment of purulent wounds in animals by sending antibiotics in endolymphatic form, treatment of oncological, purulent inflammatory and Infectious Diseases of the lymphatic vessel in the preparation for cavities by sending antibiotics by endolymphatic method provides a high economic

Keyword: Lymph, collargol, got bilimi, lymph system, Garota, Record

Introduction

It is necessary to develop karakul, which plays a key role in the country. Corak production is the main industry that meets the needs of the population of the republic in products such as meat, wool, astrakhan, leather. Therefore, astrakhan sheep as a biological object is the focus of various areas of science and practice. In recent decades, veterinary science has conducted comprehensive scientific studies to study all systems of the body of the karakul sheep, including the lymphatic system, which is little studied, but performs very important biological functions in animals and humans.

In recent decades, mainly due to the effective work of domestic researchers, a new direction in medicine has emerged clinical lymphology, in which data collected on the anatomy and physiology of the lymphatic system, as well as evidence of its involvement in diseases of various etiologies and pathogenesis play a key role. Levin, 1986).

Its theoretical and experimental substantiation is based on the D.D. Zerbino (1967), and others have shown that the lymphatic system is in an integral anatomical relationship with the circulatory system, under the influence of hemodynamic processes. At the same time, it also determines the state of the circulatory system (S.U.Djumabaev, E.S.Djumabaev, 1992),

The lymphatic system is equally responsible for the state of microcirculation with arterial and venous vessels, which ensures homeostasis and metabolic processes (Yu. V. Vyrenkov, 1967s.y. Zhumabaev, 1985; A.I. Ibatullin et al., 1985; R.T. Panchenkov et al., 1986; Casely-Smith, 1977).

It is impossible to study the vascular system in isolation from the lymphatic system, as well as to treat patients without taking into account its activity.

The idea of using lymphatic vessels to deliver drugs, particularly antibiotics, was first proposed in the early 1950s by Professor B.V. Said by Ognev.

Inspection material and methods

A study of the topographic anatomy of the lymphatic system in the distal part of the foreleg was conducted on the anterior leg of 30 head of karakul sheep of different ages, genders, and obesity, who died of non-communicable diseases or were killed experimentally. A description of the materials used is given in Table 1.

Age of animals	Number		
	rams	sheep	Total
Up to 6 months	0	5	5
6 months to 2 years	3	8	8
Over 2 years old	3	11	14
Total	6	24	30

Lymphatic flow pathways from individual tissues of the studied areas were examined: 10 from the skin, 7 from the bass, 15 from the muscles, their share and sternum, 2 from the buffalo, 5 from the periosteum.

The interaction of lymphatic vessels with the vascular system was studied in 13 legs.

Lymphoentrogenography was performed on 7 front legs, and the connection of the articular cavities in the three carpal joints was studied.

The topographic anatomy of lymph nodes and their efferent vessels was examined at 10 sites.

In order to obtain lymph fluid from deep lymphatic collectors, operative access routes were processed in 5 carcasses and 3 live animals.

Endolymphatic delivery of the drug was performed in 3 carcasses and 3 head of live animals.

We suddenly separated the front leg from the chest after the animal had died or been slaughtered. When several objects were collected, we stored them in refrigerators at a temperature of -2, -4 °. When used for testing, they were thawed at room temperature or placed in a bath filled with warm water for 2–3 h.

To determine the interaction of lymphatic vessels with blood vessels, we simultaneously applied dyes to the lymphatic, arterial, and venous systems of the foot (nalivka).

We used a small dispersed typing powder or an aqueous solution of it, added in 2 proportions, reinforced with “pigmental”, “ultramarine” dyes, to be applied to the arteries.

The prepared mass was delivered through the axillary artery using a 20-gram “Record” syringe.

For home work on the Vienna system, we used an aqueous solution of homogeneous (homogenized) small-dispersion toothpaste using an RG-t homogenizer or a 5% aqueous warm solution of black-stained gelatin. We performed the injection through a hoof bone using a 2-5 gram syringe.

After the sheep had finished digging into the mines, we removed the wool cover from the areas to be inspected for skin and carried out mechanical cleaning. To protect the skin from drying out, we wrapped it in a wet cloth.

We used the following injectable masses to find the lymphatic vessels in the distal section of the foreleg of the Korakol sheep: aqueous solution of black dream, Gerota mass, 10-15% aqueous solution of collargol, green and yellow mass of Stefanis.

a) Aqueous solution of black dream was prepared in a ratio of 1: 4 1 part black dream and 4 parts distilled water. After mixing, we filtered the solution through a 2-layer cloth. For easy movement of the dream solution through the veins, we waited for him perhydrol at the rate of 10-15 drops per 100 ml of solution. The aqueous solution of black dream makes the lymphatic vessels in the skin and muscles well visible and is also used for direct injection. Its disadvantage is that it is unsuitable for finding lymph vessels in the ligaments, joints, and joints, and contaminates the object when the lymphatic vessels are damaged. Therefore, we carried out the preparation after 12-24 hours, during which time the dream is able to settle on the vascular wall.

6) 10-15% aqueous solution of collargol. To prepare the solution, we added a specified amount of warm water to the measured collargol and placed it in a thermostat at 40-50 ° C for 48–62 hours, shaking 2-3 times daily.

Collargol solution easily penetrates the lymphatic capillaries and therefore fills the lymphatic vessels well and separates them into contours. However, the solution diffuses very quickly from the veins to the surrounding tissue (within 6-12 hours, if the material is new, the sheep diffuses within 1.5-2 hours after work and stains the surrounding tissue purple. can be prevented by (D. A. Zhdanov, 1940). We used an aqueous solution of collargol to infuse into the lymphatic vessels of the skin, joints and joints.

c) The blue mass of "Gerota" consists of: 10.0 "Paris blue" or "iron lazur" oil paint (we used "iron lazur", 15 ml of purified turpentine and chloroform and sulfate ether in a ratio of 1: 2. We filtered through 2-3 layers of cotton cloth. Gerota enters the lymphatic

capillaries and vessels very quickly and makes them clearly visible to the nodes. In the same order, we prepared a yellow mass of Stefanis using "yellow or dark cadmium". For the preparation of contrast masses can also be used dyes "Carp Lacquer" and "emerald green", which are used in polychrome injection.

In order to locate the lymphatic vessels, we used a Record syringe for injection of contrast agents, a glass sterile syringe, and polychlorinated vinyl (disposable) syringes. The latter two are the best pressed, and are essential for sending dyes to thick tissues under great pressure.

During the study, syringes with a volume of 1 ml to 10 ml were used, depending on the type of tissue being injected. The choice of injection needle for injection of contrast agents is of great importance, for which we used needles 0415, 0416, 0425.

We used contrast agents to be injected into the tissue (indirectly), into the cavity, and directly to find the lymph vessels.

Lymphatic vessels of the skin were found by injecting the solutions into the tissue at a distance of 1.5–2 cm from each other in a checkerboard pattern. In this order, the injection ensures that the lymphatic vessels are more fully located. Lymphatic vessels of the base of the hoof wall skin were found after the shoe horn substance was removed by holding it in boiling water at a temperature of 60, 80 for 10-15 minutes.

We injected the needle at an angle of 10-15 ° to the skin surface until it penetrated the suction layer of the skin base. The pressure on the syringe piston should be moderate, as high pressure can cause tissue to rupture, the venous capillaries to rupture, and these predators to enter the vein. We sent 0.2-0.5 mass to each puncture point, the diameter of the resulting "dog" should not exceed 0.3-0.5 cm. We used an aqueous solution of black pepper and collargol to examine the lymphatic vessels in the skin.

To find the lymphatic vessels in the muscles, we injected as in the skin, the only difference being that, depending on the thickness of the muscle, we pierced the needle at different depths, increasing the amount of injection mass to 1-3 ml at each point. The choice of injection points is of great importance. These points are mainly located where the muscles join the bone and near the muscle gates that enter and exit to nourish the muscles. To find the lymphatic vessels of the muscles, we used the “Gerota mass.

Lymphatic vessels of the joints and ligaments were found by injection between tissues, and they were injected at the joints and throughout the organ. We injected the needles at a distance of 1.5-2 cm from each other, using the mass of "Gegota" as a contrast agent.

To find the deep fascia and lymphatic vessels of the superficial bone, we sent 0.1-0.2 ml, mainly Gerota mass, into them.

In order to fill the extraorganic lymphatic vessels during the delivery of dyes, we always performed passive movements and stretching in the form of flexion and extension of the leg after injection.

During the examination of lymphatic vessels that extract lymph from deep tissues by tissue and intramuscular injection, the vessels were not always found in the interval to the node, so the method of direct delivery of contrast agents was used. To do this, the found lymphatic vessel was prepared from the surrounding tissue at a distance of 1.5–2 cm. We put a thick plate with a hole under it, pulled the lymph vessel, sent the needle into it and moved it 0.5-1 cm and pinched it with tweezers. We then attached the needle to the syringe and slowly released the injection mass.

We used polychrome injection of contrast agents that were different in color to determine the interaction of different layers of lymphatic vessels.

After filling the tissues with contrast agents, we began the preparation of layers and anatomical-topographic recording, dioptrography, visirography, photography and radiography (hanging).

The main method of any topographic and anatomical work is the method of preparation.

In the preparation on the floors, we opened not the entire path of the lymphatic vessel found, but only the part lying on a certain floor. After documenting the exposed area (dioptrography, visirography, photography, and recording), we prepared a section of lymphatic vessels located on the next floor. In this way, we prepared the layers surrounding the lymphatic vessels to the regional lymph nodes.

Lymphatic leakage from the skin of the distal area of the sheep’s front leg

To find lymphatic vessels in the skin of the distal area of the sheep’s front leg, we used a contrast agent consisting of an aqueous solution of black mulberry and a 10-15% solution of collargol into the tissue and by direct injection. As shown in Figure 2, injecting a contrast agent in a checkerboard pattern, the puncture point is carried out at a distance of 1.5–2 cm from each other, which allows to find a large number of lymphatic vessels. In order to facilitate the anatomical and topographic recording of the found lymphatic vessels, we divided the examined area into: finger-card area; bracelet area; wrist area; elbow area.

1. Lymphatic drainage from the skin of the fingers and palms This area is bounded as follows: the lower border passes through the horizontal surface of the hoof, the upper line through the proximal epiphysis of the palmar bone.

6-8 small lymphatic vessels emerge from the skin of the hoof wall and the outer surface. 1-2 of them are directed to the dorsal surface of the finger, the remaining 1-2 are directed to the lateral (medial) finger.

Along the first path, lymphatic vessels are placed in the lymphatic collector leading to the IV lateral (III -medial) palmar artery and vein of the finger. Along the second pathway, lymphatic vessels are placed in the lysate collector leading to the common dorsal artery and vein of the finger.

From the surface of the base of the hoof skin of the round bone and from the wall of the finger 4-6 small lymphatic vessels protrude to the outside of it, after the hoof bone connects to form 2-3 branched lymphatic vessels running along the blood vessels. The second dorsal artery and vein from the outer surface about the second finger joint are placed in the lymphatic collector and are directed proximally. 2-3 lymphatic vessels emerge from the skin of the hoof and are directed to the dorsal and latero-palmar. In the area of the second finger joint, a common dorsal and IV lateral (III medial palmar palmar artery and vein of the finger are placed along the main lymphatic vessel and collectors).

The extraorganic lymphatic vessels at the base of the hoof skin of the second finger form 2-4 lymph nodes, with 1-2 branched lymphatic vessels involved in the formation of each node. The lymphatic vessels emanating from the chital are interconnected and directed to the proximal side, where they are located between the base of the skin of the hoof bone and the wall and the dance floor. Then 1-2 of them enter the lymph collector located in the path of the finger artery, the remaining 1-2 lymphatic vessels are directed proximally and enter the lymph collector along the third dorsal artery and vein of the finger about the proximal epiphysis of the pelvis.

The lymphatic system of the base of the skin of the hoof palm of the third finger differs from that of the 4th finger, where it is developed together. 3-5 branched lymphatic vessels emerge from the formed lymph node, reach the middle part of the occipital bone, and they join and go in the dorsal direction. The remaining 1-2 lymphatic vessels are palmar-directed, joining the lymphatic vessels coming from the hoof lobe about the middle part of the occipital bone, and the resulting trunk veins are directed proximally.

It has also been observed that about the middle part of the occipital bone, the lymphatic vessels penetrate the deep fascia and are inserted into the lymphatic collectors running along the palmar arteries and veins of the fingers. In such cases, the lymph flows to the axillary lymph node.

5-7 small lymphatic vessels emerge from the skin of the lateral cleft of the phalanges II and I, and they join to form 2-4 main lymphatic vessels. 1-2 of them are directed to the dorsal surface of the fingers and then to the greater proximal, running along the dorsal artery and vein of the fingers. The other 1-2 are directed to the plantar surface, where they penetrate the fascia and are placed in the lymphatic collector running along the lateral palmar artery and vein of the fingers. 6-8 small lymphatic vessels emerge from the medial surface of the phalanges II and I, and they join together to form 3-4 main vessels. 2-3 of them are directed to the dorsal surface of the fingers, then to the greater, along the dorsal artery and vein of the fingers. The remaining 1-2 are directed to the palmar surface, where they penetrate the fascia and are placed in the lymphatic collector running along the III medial palmar artery and veins.

From the skin of the palmar surface of the phalanges II and I emerge 6-8 small extraorganic lymphatic vessels, which form 3-4 branching vessels directed to the latero-medial surface, and this surface is inserted into the lymphatic vessels. The lymphatic vessels in the rudimentary area of the fingers join together to form 2-3 main lymphatic vessels, which are directed independently of the proximal without going through the blood vessels. 2-3 lymphatic vessels emerge from the skin of the intercostal space and are placed proximally on the dorsal surface of the humerus, then on the dorsal surface of the palmar bone to the main lymphatic collector running along the common dorsal artery and veins. In doing so, the lymph flows to the clean lymph node of the neck.

Thus, the lymphatic system of the fingers of the Karakol Sheep is anatomically and topographically complex, which in our opinion depends on the living conditions of the Karakol Sheep in different ecological regions of the republic. This is because the main weight falls on the distal part of the foot, which leads to a complex angiological (arterial, venous and limatic structure) of the toe area. From the data obtained, it is clear that the lymph from the area of the fingers flows through the clean and deep lymphatic vessels to the surface of the neck and axillary lymph nodes.

Lymphatic vessels emerge from the skin of the lateral surface of the palmar area of the coracule on May 5-7, and they join to form 3-5 branched lymphatic vessels, 1-2 of which are directed to the dorsal surface, where they are adjacent to the lymphatic vessels from the finger area. 2-3 are directed proximal to the area of the wrist joint.

In this case, the lymph flows to the superficial lymph node.

From the skin of the medial surface of the palmar area emerges 6-8 small lymphatic vessels, which reciprocate, forming 3-6 branched lymphatic vessels. Of these, 2–3 are directed to the medio-dorsal side and merge with the lymphatic vessels coming from the fingers as well as the lateral surface. The remaining 1–3 lymphatic vessels are directed proximal to the area of the wrist butystem. Lymph flows to the surface lymph node of the neck.

8-10 small lymphatic vessels emerge from the skin of the palmar surface of the palm, 4-5 of which are directed to the lateral surface of the palm and appear in the lymphatic vessels of this area, the other 4-5 are directed to the medial surface and placed in the lymphatic vessels of this area. The lymph flows to the surface lymph node of the neck.

ENDOLYMPHATIC TREATMENT OF PUSUAL WOUNDS IN ANIMALS

Endolymphatic therapy includes other methods and means of affecting the disease and the lymphatic system. This tool is especially effective in the treatment of oncological, purulent inflammatory, infectious and immuno-allergic diseases. Endolymphatic therapy has a more active effect on pathogenic factors in the lymphatic system, such as microorganisms, toxic metabolites, migrating tumor cells, etc., and increases the mobility of the immune system in the body. At the same time, it reduces the complication of ineffective toxic drugs when administered to the body in high doses. Thus, endolymphatic therapy is aimed at creating an optimal concentration of drugs in the lymphatic system "in a clean hand", thus ensuring maximum compatibility with microorganisms.

We conducted research on endolymphological treatment of 2-3-year-old Karakul Sheep brought from livestock farms of Samarkand and Navoi regions of the country. Initially, the anatomical and topographic structure of the lymphatic system obtained from the anterior legs of sheep carcasses was studied. Animals obtained in principle were divided into 5 heads in experimental and control groups. The shoulder and elbow area was fed with 0.5% novocaine solution and 2-3 skin-muscle wounds 3 cm deep and 3-5 cm long were formed using a sharp scalpel. Treatment was carried out after the wound was purulent.

Treatment system As follows: in the first experimental group, a solution of penicillin was administered endolymphatically from 100 thousand ETs Í ml once a day, then the wound site was washed with a 0.5% solution of potassium permanganate; in the control group, a solution of penicillin in a dose of 100 thousand ETs was administered intramuscularly from Í ml 3 times a day, and the wound was cleaned with a 0.5% solution of potassium permanganate.

For endolymphatic treatment, a cannula was placed in the lymph collector on the dorsolateral surface of the animal's palmar area. It is also possible to find a lymphatic collector by injecting a 1% solution of mites into the tissue or inserting a hemostatic tourniquet to create lymphostasis. In this case, accurate knowledge of the topography of the lymph collectors allows accurate and rational cutting of tissue. It should be cut at a length of 5–6 cm. Once the mining flow is completely stopped, a lymph collector directed to the dorsal palmar artery is visually searched.

Lymphatic collector cannula Before insertion, it is necessary to prepare the cannula itself. For this, we used № 1 polychlorinated vinyl cannula. Its tip was cut at a 45-60 ° angle, slightly rounded to prevent slight displacement in the lymph collector and wall perforation. The lymph collector can be opened in two ways, by using the cannula itself or by cutting its wall using a scalpel-needle. After the collector wall was cut, 1-2 ml of 0.5% novocaine solution was injected intravenously using a fine needle for painless movement of the cannula. The cannula was pushed to a depth of 2-3 cm and fixed in 2-3 places using a ligature. This allowed it to be firmly attached to the vein and prevented it from falling. The cannula was pulled out of the wound and the wound was sutured with 4-5 knots. In order to ensure that the cannula was held firmly and to prevent slipping, it was fixed to the skin by suturing 1-2 knots. After administration of the antibiotic, a 1:10 heparin solution was administered to prevent thrombus formation in the canola.

Penicillin 400 solution was injected into the lymphatic system very slowly (this is the main condition) for 3-5 minutes. Slow delivery of the solution ensures that the antibiotic is evenly distributed throughout the veins. We performed a morphological examination of the blood content during the experiments.

Inspection results.

Prior to endolyphytic therapy experiments, purulent exudate from the wound, local fever, and pain on palpation were noted in animals. The general condition of the animals was low, with an increase in total body temperature to 40.9 ° C, acceleration of pulse and respiration, i.e., 85-90; 35-42. The superficial lymph node of the neck is enlarged, painful.

On the second day after the start of treatment in the experimental group of animals, ie endolymphatic administration of a solution of penitstrib 400, body temperature, pulse, respiratory rate returned to the physiological norm. Decreased purulent exudate from the wound. A slight rise in local temperature and pain, swelling of the tissues around the wound were noted. The surface lymph node of the neck is enlarged, hard consistency, painful, less mobile. The general condition of the animals is satisfactory.

On the third day, signs of regeneration in the wound were noted, with the appearance of granulation tissue covered with wound juice at the bottom of which the dead tissue had moved. A slight rise in local temperature, swelling and pain in the tissue around the wound decreased. In its course, the wound has passed from the hydration phase to the dehydration phase. The superficial lymph node of the neck is slightly enlarged, no pain, mobile.

Within 5-6 days, the wound was completely cleared of tissue and its cavity was filled with granulation tissue covered with wound juice. No fever, pain or swelling was noted around the wound, and the condition of the animals was satisfactory. The superficial lymph node of the neck is normal, mobile, painless, with a firm consistency.

During the experiment on the endolymphatic treatment of purulent lesions, we conducted hematological examinations, in which we calculated the amount of erythrocytes, leukocytes, lymphocytes. We conducted the inspections on days 5, 10, and 15, as shown in the table.

Hematological examination revealed that the initial values of erythrocytes - 5.6 0.5; leukocytes - 7.16 0.3; lymphocytes - 5.0 0.53) on the 5th day of the study revealed a significant increase in erythrocytes (5.9 0.53), leukocytes (7.9 0.36 slightly increased, the number of lymphocytes 64 4.6). This condition occurs due to the removal of lymphocytes from the lymph nodes, as in adult animals they are the main site of formation of lymphocyte subpopulations.

Hematological indications for the treatment of purulent lesions by endolymphatic and intramuscular transmission.

Blood counts	Statistical indicators	start Gich level	Endolymphatic treatment			Intramuscular treatment		
			Inspection dates					
Erythrocytes	M	5.6	5.9	5.7	5.9	5.8	5.8	5.7
(l)		0.5	0.5	0.5	0.5	0.5	0.5	0.5
Leukocytes	M	7.16	7.9	7.7	7.2	8.1	8.0	7.2
(l)		0.3	0.36	0.3	0.2	1.2	0.4	0.0
Lymphocytes	M	47.6	64	61	49.1	52.3	57.1	49.1
(l)		1.3	4.6	4.6	1.6	1.18	3.2	2.3
Number of animals	Head	5	5	5	5	5	5	5

At 8–10 days, the wound is practically filled with granulation tissue, it has shrunk, and the wound process has entered a period of epithelialization and scarring. The condition of the animals is satisfactory.

On days 10-12, the wound is completely epithelialized and scar formation is going away. The condition of the animals is satisfactory.

Upon completion of the injury, hematological parameters also return to baseline, ie, as shown in the table, erythrocytes 5.9 0.53; leukocytes - 7.2 0.2; lymphocytes - 49.1 2.0.

In the control group, purulent exudate discharge, swelling around the wound, local temperature rise, and pain were noted before treatment. Body temperature rose to 41.2 ° C, pulse and respiration accelerated, i.e., 80–90, respectively; 35-42. The superficial lymph node of the neck is enlarged, hard, painful, less mobile.

On the third day of treatment, a decrease in total temperature to 40.5 ° C, purulent exudate from the wound, swelling around the wound, local temperature rise, pain were noted, regional lilta nodes were enlarged, painful.

On the fifth day, a decrease in purulent exudate secretion from the wound was found. The wound is being cleaned of dead tissue and filled with granulation tissue. During the injury, a transition from the hydration phase to the dehydration phase was observed. Clinical indications are within the norm.

Hematological indicators show an increase in leukocytes from 7.16 to 0.3 to 8.1 to 1.2, and it has been noted that these indicators approach the initial state with wound healing.

In the following days, the control group animals observed a gradual inflammatory reactions around the wound, swelling, loss of pain. As the wound clears, the cavity fills with granulation tissue. At 17-19 days the wound is completely epithelialized and scar formation is going away

Thus, studies have shown that endolymphatic treatment of purulent wounds in animals using antibiotics has a positive effect. As a result, in a short time the wound is cleared of dead tissue and the regeneration process is activated. Decreased inflammatory reactions have been reported, which undoubtedly has an impact on the reduction of wound healing times compared to those in the control group.

Conclusions

1. Lymph from the anterior oek tissue of Karakol sheep is the surface and fascia. Deep lymph gets through the veins. The boundary between them

2. The anterior leg of the karakul sheep receives through the terisipan lilara za lymphatic vessels, and they form a tuft of dorso-lateral, media-dorsal vessels. For these, the surface lymph node of the neck is regional. Superficial lymphatic vessels are located in three different directions in the direction of the regional lymph node: the longest part above the fascia 2, between the fascia and at the base of the fascia (the shortest part).

3. Corakul Lymph flows from the tissues in the anterior distal lobe of the sheep through the deep veins to the sublingual and axillary lymph nodes of the 1st rib.

4. The lymphatic system of the joint capsule forms three types of intraortic lymphatic capillaries: one - synovial, two - fibrous membranes.

5. Convenient operational access points:

- the surface is parallel from the lateral surface to the humerus for lymphatic vessels;

- Melio- palmar pose of the bone with the medial surface for deep lymphatic vessels and the bracelet between the flexor and musculature of this girdle.

6. The results of the topography examination of the anterior leg lymphatic system of Karakol sheep were used for the treatment of purulent lesions by the endolymphatic method. As a result of using this method, the duration of treatment of purulent wounds is reduced to 5-7 days.

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