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**THE USE OF THE QUANTUM THERAPEUTIC DEVICE
RIKTA-MV
IN HORSE BREEDING**

GUIDELINES

MOSCOW 2004

These guidelines have been developed with the participation of:

- Department of Veterinary Medicine of the Russian Agriculture Ministry, Moscow;
- All-Russia Research Institute of Horse Breeding, Ryazan; Quantum Medicine Association, Moscow

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The Use of the Quantum Therapeutic Device RIKTA-MV in Horse Breeding.

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These guidelines are the first edition in Russia on quantum therapy in horse breeding. This manual offers a new effective, ecologically clean and safe methodology of stimulation of the working ability and treatment of horses that has not been available in veterinary practice so far.

The guidelines present main evidence about the veterinary quantum therapeutic device RIKTA-MV and its major curative effects on the organism of horses.

This look at the available research and practice experience suggests possibilities ranging from stimulation of immunity to enhancement of endurance of sport horses, improvement of reproductive function of studs, treatment of locomotor disorders and of digestive tract, urological, gynecological, respiratory, surgical and some non-infectious diseases using the quantum therapeutic device RIKTA-MV.

The authors wrote these guidelines relying on results of their studies and on evidence in the field of low-energy quantum therapy reported in Russian literature.

The guidelines are oriented toward veterinary physicians with interest in promising achievements of modern medicine, farmers and breeders of sport horses.

The materials of this book could prove of interest to all who love and understand the horse, one of the most beautiful animals.

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1. FOREWORD

The development of non-drug therapy is of significant interest for veterinary practice. Because of changes in the environment and in conditions of the life and nutrition of animals, the use of drugs often proves ineffective and, contrary to expected effects, produces complications such as allergic reactions, intestinal dysbacteriosis, hepatic and renal functional disorders.

Quantum therapy (QT) which has been broadly adopted in veterinary practice in the recent years is one of effective methods of management of animal diseases without drugs. Various methodologies of QT are used alone or in combination with drugs in prevention and treatment.

Quantum radiation as a therapy can influence the organism of animals in two ways. It can be applied directly to affected areas or a skin projection of an affected organ. Such technique is called zonal quantum therapy. The other way is treatment of biologically active points (BAP) that reflect the condition of an organ or system. This methodology is referred to as quantum acupuncture.

Interest in quantum therapy is caused not only by the fact that it has broadened therapeutic possibilities of veterinarian physicians, but also because veterinary practice has obtained an effective, non-invasive and painless method of treatment of a large number of diseases of farm and domestic animals.

A principally new step in the development of this method has been made in science and practice over the recent years. Devices for multifactorial QT have been designed, successfully tested and broadly adopted in practice, heralding a new era in human and veterinary medicine.

The latest of such devices for veterinary practice is RIKTA-MV. A feature of this device is combined effects on the organism of animals of pulsed infrared laser light, pulsed broad-band infrared light, pulsed red light modulated in a certain way and the stationary magnetic field.

Effects of quantum treatment are based on photophysical and photochemical reactions associated with light absorption by the biologic tissue. As a result of this treatment, the energetic activity of cell membranes changes, molecules of cells are activated, the rate of oxidative phosphorylation and biologic oxidation is increased and, as a consequence, the intensity of metabolic processes is enhanced.

The treatment of disease processes in the body decreases receptor sensitivity, the duration of the inflammation phase and interstitial tissue edema. It also improves blood and lymph microcirculation, increases oxygen uptake, activates regenerative processes and speeds up recovery of ill animals.

Improvement of microcirculation during quantum therapy is well observable by distant infrared thermography that has been increasingly broadly adopted for control of therapy and screening diagnosis.

The low intensity of radiation of the RIKTA-MV device makes it safe for animals and veterinary personnel.

Proceeding from current notions of physiologic effects, QT is used in veterinary medicine not only for treatment of animals, but also for enhancement of their

working capacity and in the presence of functional vascular disorders, meteo-tropic reactions, during travel through time zones and for restoring a normal functional state after intensive exercise.

This methodology is finding increasing uses in equine sport as physical-biological stimulation before contests and after long transportation of animals, including through time zones.

Veterinarians have gained an extensive experience of using quantum therapeutic devices. Simple and effective, ecologically pure methodologies have been developed for prevention and treatment of stress associated with pre-contest training of horses. The RIKTA-MV device can be used before contests for stimulation of endurance of horses.

2. PRINCIPLES OF QUANTUM THERAPY

Therapeutic and preventive effects are produced by low-energy electromagnetic radiation of the light range (quanta). The basis of biological quantum radiation is its ability to produce an antioxidant action that leads to normalization of membrane and metabolic processes and the ability to induce compensatory enhancement of microcirculation.

Maximally effective modes of electromagnetic radiation have been found in long-term studies and technically implemented at the end of the 20th century. These are low-energy pulsed infrared laser radiation, pulsed broad-band infrared and red radiation, and the magnetic field.

RIKTA-MV is a unique and sophisticated veterinary therapeutic device that combines these curative factors. These factors act simultaneously, and reciprocally consolidate each other, which ensure deeper penetration of energy in tissues and a more rapid response of the organism.

Pulsed infrared laser radiation penetrates deep into biologic tissues and has strong stimulating effects on circulation, cell membrane function and metabolism, and activates hormonal and immune systems of self-regulation.

Numerous clinical effects of *pulsed infrared laser radiation* include:

1. Anti-inflammatory
2. Anti-edematous
3. Analgesic
4. Antiseptic
5. Regenerative (faster healing of wounds and bone fractures)
6. Improvement of microcirculation, the composition and function of blood and lymph
7. Protein synthesis
8. Stimulation of ATP synthesis
9. Stimulation of both specific and non-specific immunity
10. Sedative

Pulsed broad-band infrared radiation has a larger spectrum and penetrates deep into tissues. It has harmonizing effects on Head zones and on central and vegetative nervous systems.

Clinical effects of this mode of radiation are

1. Effects on skin receptors and improvement of neural-reflexive conduction
2. Activation of microcirculation
3. Enhancement of skin regeneration
4. Deep penetration into tissues

Pulsed red light has a superficial action and produces favorable effects by reducing inflammation and improving microcirculation.

Major clinical effects of red light are

1. Anti-inflammatory (stimulation of phagocytosis processes)
2. Analgesic

3. Anti-edematous
4. Prominent therapeutic effects in areas of large joints with abundant areolar tissue
5. Increased oxygen uptake

The stationary magnetic field polarizes the light beam by keeping water dipoles and ionized molecules of the biologic tissue in a polarized and dissociated state.

Major clinical effects of the magnetic field:

1. Analgesic
2. Increase in energy cell potential and improvement of cell function
3. Trophic
4. Anti-edematous

Thus, the simultaneous use of the mentioned physical factors improves rheological properties of blood, blood oxygenation and microcirculation. The combined use of QT with medical treatment improves the delivery of drugs to an affected area owing to stimulation of capillary circulation by RIKTA-MV.

The quantity of energy absorbed by the animal depends of a number of pulses per unit of time, the duration of the treatment session and the ability of different structures of the organism to absorb light quanta of a given range. The response of the organism to low-energy stimulation depends on compensatory, adaptive systems of the body.

Higher frequencies are used in the treatment of acute diseases and have pain-relieving, anti-edematous, spasmolytic and bactericidal effects.

Low frequencies are more often used for the treatment of chronic diseases. They have regenerative, anti-inflammatory and immunostimulating effects and improve circulation processes.

In many cases a combination of high and low frequencies is used; thus a high frequency is used during initial treatment sessions and, by the third or fourth session, low frequencies are used or are sequentially combined with high frequencies during one treatment.

3. GENERAL INFORMATION ABOUT RIKTA-MV DEVICE

3.1. Use

The quantum therapeutic veterinary device RIKTA-MV is intended for treatment and stimulation of animals by direct application to reflexogenic areas, projections of viscera on the body and to corporeal biologically active points.

The treatment of the organism of animals is carried out simultaneously using four physical factors modulated in a certain way:

- pulsed infrared laser radiation;
- pulsed broad-band infrared radiation;
- pulsed red light;
- stationary magnetic field.

RIKTA-MV can be used in clinics and any other settings. The device is highly effective for non-drug treatment of non-infectious diseases of animals, including of productive ones. This allows the output of ecologically pure products of livestock breeding.

RIKTA-MV produces positive results in the treatment of animals with non-contagious diseases: obstetric-gynecological, surgical, pulmonary, gastroenterological, rhino-oto-laryngological, urological, andrological, dermatological and others.

The RIKTA-MV device is used in the treatment of visceral diseases, as its radiation gets deep. RIKTA-MV is a portable device with self-contained power supply and two emitters (Photo 1); it can be additionally equipped with vaginal and rectal emitters.

Photo 1. RIKTA-MV with emitters



The device with standard skin emitters is packed in a special bag with a shoulder belt and waist belt. Its self-contained power supply is storage batteries inbuilt in the device, but it also can operate from alternate current mains. The design of the device ensures high safety of it for patients and personnel.

3.2. Technical characteristics of RIKTA-MV device

Wavelength of pulsed infrared laser radiation	0.89+-0.06 mcm
Maximal pulsed power of laser radiation	16 W
Power of pulsed broad-band infrared radiation (regulated)	0-120 mW
Pulse duration	0.1 ms
Laser pulse recurrence rates	4 Hz, 64 Hz, 512 Hz, 4096 Hz
Magnetic induction of the superficial emitter, not less than	35+-10 mTl

Used current of external 12-14 V storage battery, not more than	0.5 A
Area of effect of a standard emitter during animal treatment	4 sq.cm
Depth of effective penetration of biologic tissues, not less than	8-10 cm
Time of incessant operation from alternating current mains, not less than	8 hours
Time of charging of the inbuilt battery, not more than	5 hours
Time of incessant operation from the charged inbuilt storage battery, not less than	5 hours
Size	230 x 60 x 220 mm
Weight with two emitters and the charging unit	3.4 kg

3.3. Advantages of self-contained power supply

Owing to self-contained power supply of RIKTA-MV, possibilities of its use in different conditions are very broad. It can be used in veterinary clinics, stations for animal disease control, farms, at pastures, summer ranges, for the treatment of domestic animals and during sport contests.

4. GENERAL RECOMMENDATIONS FOR USE OF QUANTUM THERAPY IN VETERINARY MEDICINE

4.1. Zonal quantum therapy of animals

The selection of a zonal therapy regimen depends on the presence or absence of skin lesions. A *stable contact* or a scanning technique is used when the skin is intact and a *distant technique* when the skin is injured.

The injured or affected skin, purulent and non-purulent lesions should be cleansed with conventional veterinary methods, including with ointments, and dried before quantum therapy.

It is recommended to protect the surface of the emitter from soiling with a polyethylene film fixed to it with a rubber ring. The emitter must be disinfected after a treatment procedure with a swab soaked in a 70% alcohol solution or a 0.5% hydrogen peroxide solution. Lesions can be processed through clean gauze dressings with a thickness not more than 0.2 cm (two-of gauze).

It is also recommended to open encapsulated abscesses, hematomas or transudate in cavities for draining before QT.

Quantum therapy is not used in the presence of acute bleeding. It may be begun in two days after bleeding arrest or after an acute injury.

Quantum therapy is well combinable with drug treatment, hydrotherapy and massage during one day. Other modes of physiotherapy should be used on alternate days in turns.

Ointment dressings, massage etc. should be carried out after a QT session.

Quantum therapy yields sustainable therapeutic effects; an animal often behaves quietly as soon as after the second treatment.

An exacerbation can be seen in some cases after 2-3 treatments, occurring as deterioration of clinical symptoms, but this is interpreted as a positive reaction of the organism. It is not recommendable to stop therapy, as these events resolve by the 5th-6th treatment.

It is desirable to conduct QT at one and the same time of the day. A QT course should not be longer than 15 daily treatment sessions. When it is necessary to stabilize clinical effects, the second course is delivered to animals with chronic diseases in 20-30 days. If there are indications, the third course may be carried out in 3-6 months.

4.2. Indications for quantum therapy of animals.

Protocols of the treatment of the most common diseases are presented in Chapter 6.

Quantum therapy may be used in animals with any non-contagious and some contagious diseases for stimulation of immunity when there are no absolute contraindications.

4.3. Contraindications

1. Especially dangerous infections that warrant slaughter of animals.
2. Diseases and conditions that require urgent surgery or other vital interventions: bleeding arrest, removal of foreign bodies from bronchi, the esophagus, the intestine, etc.
3. Unexplained symptoms or behavior of the animal requiring observation and diagnostic analysis.

Apart from these contraindications, there are restrictions on the use of QT.

When antibacterial and detoxifying therapy is needed, QT as a rule is limited to noninvasive treatment of blood for general stimulation of the organism and for consolidation of effects of drug treatment. If all contraindications and restrictions are taken into account, QT may be carried out in all other cases.

5. QUANTUM THERAPY TECHNIQUES

Quantum radiation can be delivered to an affected site with RIKTA-MV using the following techniques:

- **topically (cutaneously)** when quantum treatment is applied to an affected area or organ externally (by contact). This technique is called **zonal quantum therapy**.

Non-invasive irradiation of blood is carried out externally by placing the emitter on skin projections of arteries or veins

External treatment of corporeal biologically active points (BAP) is called **quantum acupuncture**.

- **vaginally**, when radiation is delivered to internal genital organs through the vagina;
- **transrectally**, when treatment of the vagina, uterus and adnexa is carried out through the wall of the rectum after preliminary manual cleaning of the rectum from feces.

When the **contact technique** is used, penetration of energy in biological tissues is 3 to 10 times deeper as compared to a noncontact technique. As a result, quantum radiation reaches all dermal and subdermal nervous and vascular plexuses, superficial layers of muscles and capsules of most of joints.

Thus, the contact technique allows simultaneously treating a large number of superficial and deep receptors by delivering a sufficient dose of energy for their activation.

Non-contact (distant) technique of quantum therapy is used mostly in the presence of diseases associated with skin lesions, as well as cutaneous diseases (lichen, eczema, dermatitis, etc.).

Contact and non-contact techniques can be **stable**, when the emitter is held immovably over an affected area, and **scanning**, when the emitter is moved over the surface. The labile technique is more often used as during non-contact treatment.

When the **vaginal technique** is used, the emitter is coated with a polyethylene bag and inserted into the vagina.

For **rectal treatment**, the rectal emitter is covered with a polyethylene glove and inserted with the hand into the rectum, directing it toward the uterus.

Quantum acupuncture is carried out by quantum irradiation of BAP that is delivered with acupuncture tips. The morphology of biologically active points has not been elucidated so far. Biologically active points are an intricate structural complex represented by nerves, vessels of the microcirculatory bed and the connective tissue surrounding nerves and vessels with great numbers of fat cells (labrocytes).

The treatment of BAP with quanta of light increases their blood supply and the content of labrocytes, and causes accumulation of biologically active substances that absorb into the circulation exerting some or another biologic effect.

One of functional characteristics of BAP is change in electric resistance of the skin in the area of a BAP projection. Depending on the condition of an organ and system represented by the projection, not only electric resistance, but also the surface area of a BAP changes. In the presence of functional deficiency or strain of an organ (during milking), the size of BAP can increase up to ten times as compared to normal (3-5 mm), and for this reason BAP may be treated without using special acupuncture tips but by placing the emitter to a body area where a BAP is located.

The treatment of BAP that are physiologically related to organs and systems produces therapeutic action on them, and a veterinarian must know the topography of main BAP in order to use quantum acupuncture. These guidelines present BAP topography.

Quantum acupuncture therapy of animals with acute conditions during initial 3-4 sessions uses 4096 Hz and 1-2 min exposure during the first 3-4 sessions and 64 Hz or 512 Hz with 1-2 min exposure during subsequent treatments.

The regimen for chronic diseases: 4 Hz or 64 Hz and 1-2 min exposure.

Quantum therapy is conducted daily or at a one day interval. The course of therapy includes ten sessions.

The best results are seen when a veterinarian takes into account the fact that **points numbers of which are singled out in the table of prescriptions are main and others are additional.**

Main points are treated during the first and additional during the second session.

6. SPECIAL TECHNIQUES OF QUANTUM THERAPY OF ANIMALS

6.1. Treatment of surgical diseases and wounds

Indications

- * infiltration;
- * open traumatic wounds, postoperative wounds, trophic lesions, burns;
- * postcastration wounds and edema.

Infiltration

Quantum therapy of infiltration without signs of an abscess is used for painless and rapid resorption.

The 4096 Hz frequency is used during initial 4 treatment sessions. Therapy is applied to an infiltration area for 3-4 minutes. The treatment technique is by contact and for hygienic considerations it can be delivered through a layer of gauze or thin transparent polyethylene. Beginning from day 5, frequency is 512 Hz and exposure 5-10 min. The course of therapy is 8-10 procedures, once daily.

When there are signs of an abscess (softening, fluctuation) or suspicion of it, discission and surgical treatment should be carried out for drainage before the beginning of QT.

Infiltrative edema sometimes occurs after suturing. The edematous areas are treated daily or at a one day interval by non-contact scanning (at a minimal distance) using the above regimen. The efficacy of treatment of infiltration is up to 98%.

Open traumatic wounds, postoperative wounds, trophic lesions, burns

The surface of a lesion, wound or burn must be cleaned from dirt, including purulent-necrotic masses, before a treatment. The treatment is carried out by a non-contact scanning technique. The emitter is moved 0.5-1 cm over the wound surface.

During initial four treatments, 4096 Hz frequency and 3-5 min exposure of the wound are used, with scanning also covering intact tissues.

Beginning from day 5, frequency is 512 Hz and exposure 5-10 min, depending of the size of the wound. The course of therapy includes 8-10 procedures, one a day.

Wounds usually heal on days 5-8. The success rate is up to 98%.

Postcastration wounds and edema

The treatment of postcastration wounds and edema should be begun in 2-3 days after the operation, as acute inflammation resolves. Quantum therapy is conducted according to recommendations for infiltration. Edema of the scrotum, prepuce and navel area are treated using a contact or non-contact technique during 5-10 minutes, depending on the size of edema. The frequency of 4096 Hz is used during initial 4 treatment sessions and 512 Hz from day 5. The course of therapy is 8-10 sessions, one a day.

Some veterinarians recommend quantum treatment of BAT for castration bleedings using prescription 99.

6.2. Locomotor system diseases

Indications:

- * arthritides of different genesis;
- * inflammation, nerve paralysis and paresis;
- * myositis;
- * bone fractures;
- * muscle spasms (seizures);
- * tendinitis, tendovaginitis;
- * synovitis, bursitis;
- * periostitis.

Arthritides

The treatment of **arthritis** employs the contact technique that is applied to projections of joint recesses. Three-four areas around a joint are treated anteriorly, laterally, medially and posteriorly.

The frequency is 64 Hz and 1-2 min exposure are an initial regimen, and then 4 Hz frequency is applied during 1-2 min to each selected area of treatment. The course of treatment is 8-10 procedures, daily or at a one day interval.

Conventional drugs should be used for a more rapid recovery. If the efficacy of the treatment proves insufficient, the QT course is repeated in 2-3 weeks.

Topical QT of **polyarthritis** should be combined with general stimulation of the organism of the animal, for example by non-invasive irradiation of blood at a one day interval. For this, the emitter is held over a large vein or artery or the liver during 20-25 minutes. The frequency is 64 or 512 Hz.

Quantum acupuncture is extensively used for treatment of arthritides in horses. Biologically active points are treated according to prescriptions 44-53.

The efficacy of quantum therapy of arthritis is 85 percent. The frequency is 64 Hz during initial 4-6 treatment sessions and 512 Hz in the second half of the course. Exposures are respectively 2 and 1 min per BAP.

Inflammation, nerve paralysis and paresis

Quantum therapy is successfully used along with other interventions for treating **nerve inflammation** (nevritis) that is common in horses. Besides, QT significantly improves results of therapy of non-inflammatory diseases of central and peripheral nervous systems (paralysis and paresis).

Paresis and **paralysis** can be of a central and peripheral origin. Central paralysis and paresis in horses are caused by hemorrhage, abscesses or tumours of the central nervous system. Peripheral paresis and paralysis are more often caused by mechanical injuries: bruises, injuries, bone fractures and rude manipulations during immobilization or casting down of horses. Prognosis of central paresis and paralysis is most often unfavorable and of peripheral injuries almost always good. The prognosis of chronic paresis and paralysis, which is associated with degenerative changes, is cautious, as not all horses restore their working ability. The prognosis of acute paresis is usually favorable.

The efficacy of conventional treatment of paresis is 40% and, when it is combined with QT, 70%.

Apart from zonal QT, there are quantum acupuncture methodologies for paresis and paralysis.

Paresis is treated by cutaneous scanning of large areas of the body of the animal along nerve trunks and nerves. A veterinarian using QT of these diseases must know the topography of nerve trunks and their projections on the body of the horse.

Regimens: frequency, 4 Hz or 64 Hz; exposure, 3, 5 or 10 min depending of a treated area. Some authors recommend alternating frequencies – 4 Hz or 64 Hz during one minute of treatment, and 512 or 4096 Hz during the second minute. Some use 4096 Hz during initial 3-4 treatment sessions and 512 or 64 Hz during subsequent sessions, alternating them daily.

The use of higher frequencies has been reported to produce better results of therapy of acute conditions and of lower frequencies in chronic diseases.

The success rate of QT of acute sciatic and lumbar nerve inflammation can reach 98% of chronic neuritis 75-80%/ It should be remembered that an exacerbation of chronic neuritis can occur after 3-4 treatment sessions, but it is not recommended to stop therapy, as recovery often comes through deterioration.

Another method of managements of neuritis, paralysis and palsy is quantum acupuncture. The treatment is delivered to BAP. Since the area of treatment with RIKTA-MV reaches 4 sq.cm., biologically active points always prove covered.

Regimens: frequency, 4 Hz or 64 Hz or 512 Hz; exposure, 1 min per point. Exposure can be increased to 2 min. In this case 4 Hz frequency is used during the first minute and 64 or 512 Hz during the second minute.

In the presence of nerve paralysis and paresis of the brachial area, quantum acupuncture is carried out by irradiating main BAP in this area. Quantum therapy of suprascapular nerve is delivered to BAP according to prescription 69 and to radial nerve according to prescription 68.

Affected nerves of the cruppers and the thigh are treated by irradiating BAP related to nerves located in these areas of the body (prescriptions 71-78).

Prescription 78 is for treatment of lumbago, prescription 70 for sciatic nerve inflammation, 65 and 74 for femoral nerve paralysis and paresis and prescription 66 for the same conditions of the tibial nerve.

The effectiveness of zonal QT of nerve paresis and paralysis is always significantly increased when it is combined with conventional treatments such as massage, light, heat and warming compresses.

Myositis

Myositis is commonly seen in sport horses. Its cause may be a muscle trauma related to a bruise, pressure or laceration. The prognosis of acute serous and most of purulent forms of myositis is most often favorable.

A mandatory part of myositis treatment is incision and draining of purulent exudate. Fibrinous and parenchymatous myositis is also known, where conventional treatment is ineffective and horses lose economic value.

The therapy is effective when drugs are combined with QT that is delivered to the most painful areas using the contact scanning technique. For relief of pain, contact scanning treatment is carried out during initial 2-3 days at the frequency 4096 Hz for 5 minutes and more, depending on the size of an affected area. On subsequent 4-5 days, 4, 64 or 512 Hz frequency is used with a 5 min exposure of a palm-sized area of the body.

Pain is usually reversed after two-three treatment sessions, but therapy should be continued to 8-10 sessions. Good results are obtained in the presence of muscle inflammation, including of a rheumatic etiology, using prescriptions 59-64 for treatment of biologically active points.

Optimal results of QT have been seen when a combination of drugs and quantum therapy was used alternately.

Bone fractures

Bone fractures occur in horses during races, hurdle jumping, abrupt halts at the trot, clumsy casting down and wrong immobilization of horses and hoof strikes by other horses.

The prognosis of incomplete bone fractures and bone fissures is cautious and of complete fractures unfavorable. Treatment of fractures in especially valuable mares and studs from which good offspring can be obtained can prove cost effective.

QT of projection areas of long bone fractures yields good results. When retaining or carcass dressings are used, an opening should be left in them for the the emitter of RIKTA-MV.

The 4096 Hz frequency is used during first 2-3 days for 5 minutes for pain relief and 64 Hz or 512 Hz later until the removal of the retaining dressing. After the

dressings is removed, QT is continued for 5 days using a contact technique and the same regimens for reduction of edema. The course of therapy is 7-10 sessions. Animals usually recover 5-6 days sooner as compared to conventional therapy.

General stimulating quantum acupuncture is used for bone fractures and severe injuries by applying it to BAP according to prescriptions 54-58. This BAP is located in the recess between spines of the last lumbar of the first sacral vertebra on the dorsomedial line. Exposure is 1-2 minutes and frequency 4 Hz or 64 Hz.

Muscular spasm (seizures)

Muscular spasm commonly affects horses with excessive excitability. Spasms occur after drinking the cold water or eating frozen feeds, sharp standing up or lying down, a sudden stop during a fast gallop or sharp movements during sport contests. Seizures present with sudden lameness and marked stiffness of anterior or posterior parts of legs. Seizures usually continue 5-15 minutes.

Quantum therapy alone or combination of it with drug treatment can be used for management of spasms and is applied zonally or as acupuncture. The prognosis of this condition is most commonly good.

Quantum treatment of a spastic muscle is carried out using a skin scanning technique. The treatment regimen is similar to that used for neuritis.

When acupuncture techniques are used, BAP are treated as indicated in prescriptions 79-94. Regimen: frequency, 4 Hz, 64 Hz, 512 Hz; exposure, 1 min. One or two treatments are conducted until seizures resolve.

Tendinitis, tendovaginitis

Tendinitis, or tendon inflammation, most commonly affects forelegs of cart-horses, racers or mount horses.

Tendons of the profound digital flexor are affected in 18% of cases and of its accessory head in 73% of cases. The rate of superficial digital tendinitis is 9% and of the accessory caput only 0.7 p%. Inflammation of the profound digital flexor tendon and of the accessory tendon caput in cart-horses is more common than in pacers and mount horse that more often show inflammation of the superficial digital flexor tendon and of the intercostal medial muscle. This is explained by different strain during hard work and rapid trot on the hard uneven or soft ground. Tendinitis is also caused by hurdle-clearing, forcible release of an impacted leg, curbing of horses on pastures, poor cleaning of hooves and wrong shoeing.

Tendinitis is commonly aseptic and less frequently purulent. Its course can be acute and chronic. Chronic tendinitis often destroys the fibrous tissue.

Tendovaginitis is inflammation of tendon sheaths of carpal, metacarpal, tarsal and metatarsal joints. Aseptic tendovaginitis is more common and purulent rarer in horses.

Aseptic tendovaginitis is associated with lameness and painful swelling of tendon sheaths. Lameness is absent in chronic tendovaginitis and swelling is

painless. Etiological factors of aseptic tendovaginitis are close to mechanical injuries similar to those causing tendinitis. Purulent tendovaginitis commonly occurs because of injury of tendon sheaths or by hematogenic and lymphatic ways.

Quantum therapy of acute tendinitis or tendovaginitis can be begun 1-2 days after other the onset of the disease and be combined with cold compresses. An affected tendon is treated by contact scanning.

Regimen: frequency, 4 or 64 Hz or 512 Hz; exposure, 5 min. The course of therapy includes 8-10 daily sessions. It is desirable to change the radiation frequency every day in an intermittent mode. In the presence of pain, 4096 frequency is used, which has a maximal analgesic effect. Clinical recovery usually occurs after 5-6 treatment sessions. The prognosis of acute tendinitis or tendovaginitis is favorable in most cases. Combination of quantum and drug therapy is effective in 96 to 100% of cases.

Prognosis of chronic tendinitis or tendovaginitis varies from ambiguous to good and depends on a location of inflammation, a tactic of therapy and quality of care for affected horses.

After 3-4 treatment sessions, an exacerbation can occur, presenting as an increased amount of exudate, but this should be seen as a sign of recovery. Quantum therapy should be continued until clinical symptoms resolve; the time of treatment of every area is decreased to 2 minutes.

Quantum therapy of purulent tendovaginitis is used after surgical draining of a pus focus. Non-contact scanning technique and regimens similar to those adopted for treatment of acute aseptic tendinitis and tendovaginitis are used. The success rate increases by 10-15% when quantum and drug therapy are combined.

The efficacy of quantum therapy is also higher when it is adjuncted by recommended medical and physiotherapeutic methods such as hydrotherapy, cold and warm compresses, and dosaged exercise. It is not recommendable to carry out other electrophysical treatment on the day of quantum therapy.

Synovitis and bursitis

Synovitis is aseptic inflammation of the joint bursa often seen in horses. It is determined by constitutional predisposition to this disease. There is acute and chronic synovitis. According to the character of exudate, synovitis is categorized into serous and serous-fibrinous. Aseptic synovitis is caused mostly by mechanical injuries of joint bursas, for example by the use of young horses for hard work on bad-kept roads or in mountain or marshy terrain.

The prognosis of conventionally treated horses with synovitis is usually good: leg function is saved.

The prognosis of chronic synovitis is cautious or ambiguous: legs retain function, but workability of horses decreases.

Quantum therapy of synovitis enhances the success rate by 15-20%.

Acute and chronic synovitis is treated by the contact scanning technique using 64 or 512 Hz during 3-5 minutes. After the use of cold procedures for 1-2 days, quantum therapy combined with conventional treatment allows reaching 100%

success rate and shortening the course of therapy by 5-7 days as compared to other therapies.

Synovitis can be successfully treated with quantum acupuncture of BAP according to arthritis prescriptions and using the same regimens.

Bursitis is inflammation of the bursal mucosa. The horse has more than 80 bursas, the main of which are shown in Fig. 1.

The bursas are located mostly at sites of the greatest friction of muscles or tendons against resistant dense tissues, acting as moderately elastic buffer pads. Bursitis is qualified into chronic, congenital, acquired or reactive. In the vicinity of joints, the bursas have communications with the synovial cavity and are called synovial. The bursas are structurally similar to tendon sheaths. Some bursas have partitions that divide them into several isolated cells. They are called multicameral.

Bursitis can be aseptic and infectious-toxic; according to the quality of exudate, they fall into serous, serous-fibrinous and purulent. Progress of bursitis can be acute and chronic.

Horse bursitis occurs mostly in neck and mane areas, and in elbow, tarsal, shoulder, carpal, hip and knee joints.

Aseptic bursitis is produced by mechanical injury of the bursal area, excessive muscle contractions during strain, especially during sharp wheeling around or stopping the horse at the trot. Rheumatic and metastatic bursitis is occasionally seen.

Fig.1. Locations of bursas in the body of the horse

Bursas (B):

- 1 - subcutaneous over 5th-7th spines of withers;
- 2 - subcutaneous on the lateral surface of the ulner tuber;
- 3 - subcutaneous over the lateral ligamentous tuber of the proximal radial bone;
- 4 - subcutaneous on the lateral surface of the distal radial bone over the tendon of the common digital extensor;
- 5 - subcutaneous over the metacarpal bone;
- 6 - subcutaneous over the lateral ligamentous tuber of the distal radial bone;
- 7 - subcutaneous over the lateral surface of the pastern joint;
- 8 - subcutaneous volar surface of the carpal joint;
- 9 - subcutaneous over first spines of the sacral bone;
- 10 - subcutaneous over the upper and lower lumbar joint;
- 11 - subcutaneous of the hip joint;
- 12 - subcutaneous over the calcaneal joint;
- 13 - subcutaneous in the lateral area of the tibia;
- 14 - subcutaneous over the fourth tarsal bone;
- 15 - subcutaneous in the medial ankle;
- 16 - occipital-atlantal;
- 17 - supraspinal of the 2nd cervical vertebra;

18 - profound of withers.

The prognosis of aseptic bursitis is commonly good and of purulent bursitis cautious.

Quantum therapy alone is effective only for acute bursitis.

The contact labile technique of bursitis treatment is used and the contact stable one when its area is small. Quantum therapy is begun after 2-3 days of hypothermic procedures using 64-512 Hz frequencies for 3-5 minutes, depending of the size of a bursa. The best results are achieved when QT is combined with conventional therapy of bursitis, speeding up the recovery of the animal. Purulent bursitis is treated surgically and then contact or non-contact scanning (at a minimal distance from the body surface) is added using regimens of treatment of open wounds. Antibiotic and other antiseptic treatment hastens recovery from purulent bursitis.

Periostitis

Periostitis is periosteal inflammation associated with the formation of exostoses on bone surfaces. Periostitis is a rather common disease in horses. In most cases it affects the dorsal surface of the proximal pastern, but it also can occur on the plantar surface.

Periostitis can be acute, subacute and chronic, and, according to the quality of inflammation, serous, purulent, fibrinous and ossifying.

Etiological factors of periostitis are mechanical injuries of the periosteum, wounds and purulent processes in joints, bones and surrounding soft tissues. The prognosis of acute serous periostitis is always good and of ossifying cautious. In the presence of persistent lameness, it is ambiguous or unfavorable; the horse is unlikely to die, but its working capacity is reduced and it has to be discarded from use.

There is reported evidence of quantum therapy of periostitis that was in 9.1% of all locomotor disorders in horses.

The regimen of quantum therapy of periostitis: frequency, 512 Hz; power, 16 W; exposure, 5 min (Photo 2). The course of therapy was 10 daily sessions. The success rate was 91.7%, which allowed the withdrawal of potent drugs and prevention of their side effects. No BAP acupuncture therapy for this disease has been developed.

Photo 2. Periostitis

6.3. Respiratory diseases

Indications:

- * upper respiratory tract inflammation
- * bronchitis, pneumonia, bronchial pneumonia

Respiratory tract diseases in horses are characterized by inflammation of the mucosa of the nasal cavity (rhinitis), pharynx (pharyngitis), the larynx (laryngitis), trachea (tracheitis) and bronchi (bronchitis). Inflammation can simultaneously involve several respiratory tract segments, for example, after inhalation of irritant gases, abrupt change of the temperature of the inhaled air, overheating or overcooling that are associated with favorable conditions for invasion of pathogenic microorganisms. Some infectious diseases of horses produce secondary respiratory tract inflammation.

Upper respiratory diseases can be acute and less frequently chronic. According to its quality, inflammation is catarrhal, catarrhal inflammatory, crupous and diphtheric.

Therapy of horses with rhinitis, laryngitis, tracheitis and bronchitis must be aimed at abolition of causative factors and enhancement of non-specific resistance of the organism.

Combination of topical quantum therapy and quantum acupuncture is effective for rhinitis, laryngitis, tracheitis and bronchitis, as it has immuno- and enzyme stimulating, bacteriostatic and bactericidal effects.

Quantum therapy is delivered by the contact stable or scanning technique to projections of the larynx and trachea and, in the presence of rhinitis, to lateral surfaces of the nose.

Regimens: frequency, 4-64 or 512 Hz during 2 to 5 minutes of a daily treatment session. The course of therapy is 5-10 sessions. The prognosis of acute inflammation is commonly favorable and of chronic cases cautious or unfavorable, especially in bronchitis.

Quantum acupuncture therapy of upper respiratory tract diseases is delivered to biologically active points.

According to prescription 6, BAP are treated in the presence of rhinitis, of to prescription 4 in laryngitis, 7 in tracheitis and prescription 1 in bronchitis.

Contact stable treatment of BAP uses pulse frequency 4-6-512 Hz applied to each point for 1 minute. The treatment is carried out every day or at a one-day interval. The course of therapy is 5-10 sessions.

Daily alternation of radiation frequencies is practiced for increasing the efficacy of quantum therapy. Three first BAP of the above prescriptions are main and are treated daily, and others on an alternate-day basis, but all points may be treated daily for increasing the effectiveness. However, one procedure a day should not exceed 30 minutes.

Pneumonia is lung inflammation. As compared to other respiratory tract diseases, it is the most common. Nonspecific pneumonia occurs most frequently and usually has several etiologies. Pneumonia can be serous, catarrhal, serous-catarrhal, catarrhal-purulent, purulent and fibrinous.

Depending on their character, pneumonias are categorized into focal and lobar; rapid progress of inflammation is characteristic with involvement of the whole lung or lobes. The latter has a slow spread in lung tissues.

The most important etiologic factors in pneumonia are impairment of resistance

of horses because of environmental impacts such as overcooling, humidity, draughts, inhalation of irritant gases (hydroperoxide, ammonia), abrupt change of temperatures, hypothermia and excessive insolation are thought to be secondary causes. These factors impair immunity, while autoinfection is thought to have a secondary role in the onset of nonspecific pneumonia.

Horses are most commonly affected by crupous pneumonia that occurs as fibrinous inflammation.

When beginning the treatment, the veterinarian physician should isolate the animal from the causative environmental factors and use quantum therapy that obviates the use of gamma and beta globulins for enhancing non-specific resistance of the organism.

One of the most effective therapeutic modalities is quantum therapy in combination with conventional drug treatment, zonal supravenuous and acupuncture quantum therapy.

Zonal tissue contact scanning or labile techniques. The emitter of the RIKTA-MB device is placed on the chest where rales are heard. The frequencies 4 or 64 Hz are used for 5-8 minutes, depending on size of treated areas. The course of treatment is 10-12 daily sessions for acute pneumonia and 10-15 treatments for chronic pneumonia. The course of quantum therapy of serous, catarrhal, catarrhal-purulent pneumonia is shorter than that of purulent, fibrinous and hemorrhagic forms.

After clinical recovery the therapy should be continued for at least two-three days, and horses are freed from work and training for 7-10 days.

Prognosis of acute pneumonia is most often favorable and of purulent, fibrinous and hemorrhagic pneumonia ambiguous. Horses most often recover, but their use in work or sport is problematic.

Bronchopneumonia is inflammation of bronchi and lung lobes accompanied by the formation of catarrhal exudate that fills bronchial and alveolar lumina. This disease has a multiple etiological nature and is produced by effects on the organism of several unfavorable factors impairing natural resistance.

Therapy is most effective at an initial stage of the disease. Its results depend on timely abolition of causes of the disease. The prognosis of bronchopneumonia is favourable in most cases.

Apart from medical treatment, quantum methodologies have been developed. Used in combination with drugs, they increase the success rate 10-15% as compared to conventional treatments recommended for bronchopneumonia.

Therapy is carried out using contact-stable or labile techniques of treatment of intercostal spaces where rales are heard. The irradiation frequency is 4 or 64 Hz during 5-10 minutes, depending on the size of an affected area. The total duration of treatment should not be more than 30 minutes day.

The efficacy of zonal quantum therapy can be increased when it is combined with acupuncture of BAP according to prescription 2 and is conducted on the same day in combination or alone. Such alternation allows treating more BAP. Acupuncture uses frequencies 4 or 64 HZ during 1 minute. The course of therapy

of acute bronchopneumonia includes 6-8 sessions and of chronic cases 10-11 sessions.

When therapy is correct and timely, prognosis is favorable and bronchopneumonia resolves in 15-20 days. The prognosis is cautious in neglected cases. Horses should be taken under special control after clinical recovery, and provided good nutrition and husbandry, not be used in work until full recuperation and be engaged in work gradually.

6.4. Digestive tract diseases

Indications:

- * gastritis;
- * gastroenteritis;
- * gastrointestinal tract diseases with colic and enteric pain;
- * enteritis.

Gastritis

Gastritis is inflammation of the stomach mucosa that is common in horses. Catarrhal gastritis is seen more often as compared to other forms of the disease. Hemorrhagic and fibrinous gastritis occurs rarer. Progress of gastritis can be acute and chronic.

Etiological factors of primary gastritis are irregularities of feeding and bad feeds, overfeeding, irregular feeding, abrupt change of ration, food poisoning. Secondary gastritis occurs in the presence of infectious diseases affecting the gastrointestinal tract of horses.

Early therapy combined with improved husbandry leads to favorable outcome in most cases of acute gastritis. The outcome of acute gastritis caused by feeds containing toxic substances is unfavorable. The prognosis of mycotic gastritis is similar.

There is evidence on the use of QT for stomach diseases. The best results are achieved with the acupuncture technique of therapy.

Quantum therapy is carried out using a contact-labile technique on a stomach projection of the skin of the horse that is located left on the upper half of the line connecting the ulnar process and the 18th thoracic vertebra.

The treatment regimen is 4 to 64 Hz, exposure for 3-5 minutes.

In acute gastritis, the treatment session is repeated in 4-6 hours. The course of therapy is 6-8 sessions. Better results are achieved by combining quantum and drug therapy.

Areas of skin tenderness (Head zones) in many cases are located at biologically active points and are physiologically related with digestive organs. Quantum therapy of digestive tract diseases is applied to these areas (Fig. 2).

Fig. 2. Head zone used for quantum therapy of digestive tract diseases: 1 -

myotonic reflex, 2 - olecranon reflex, 3 - anterior reflect of the solar plexus; 4 - posterior reflex of the solar plexus; 5 - anterior mesenteric plexus; 6 - renal-aortal plexus, 7 posterior mesenteric plexus; 8 - dorsal gastric point, 9 - lumbar plexus; 10 - lumbar reflex; 11 - sacral reflex, 12 - conjunctival reflex.

We recommend treating stomach diseases in horses in an area located between the 5th and 10th ribs one or two palmbreadths from the site of attachment of ribs to rib cartilages on the left side, and in an area located on the posterior side of the withers between the 2nd and 3rd spines in the presence of acute stomach dilation.

Apart from zonal quantum therapy, acupuncture techniques have been developed for therapy of horses with gastritis in which BAP are treated according to prescription 8. Regimen of BAP treatment: frequency, 64-512 Hz; exposure, 1 minute for each point. The cause of therapy: 8-10 treatment sessions, one a day. A treatment session is repeated in 4-6 hours in acute cases.

Gastroenteritis

Gastroenteritis is an inflammatory process in the stomach and intestine involving the mucosa and often affecting lower layers of the gastrointestinal tract.

Gastroenteritis is categorized into catarrhal, hemorrhagic, fibrinous-croupous, diphtheric and purulent forms.

Gastroenteritis affects all animals, but it is most common in horses. Causes of it are bad feeds and bad water. Horses are especially sensitive to feeds infested by mold and soil, sand or salt in the gastrointestinal tract. Hemorrhagic gastritis in horses often occurs because of fatigue and eating leaves of white acacia, needs of fur trees and of poisoning.

Gastroenteritis in horses is often complicated by thrombosis and embolism of intestinal arteries, chymo- and coprosthesis.

The prognosis depends on causes of the disease, and the horse can die in two-three days. In other cases, the prognosis is favorable if conventional therapy is begun early in combination with quantum therapy.

Quantum therapy of horses with gastroenteritis is carried out using a contact scanning technique applied to zones and projections of digestive organs on the skin of the abdominal area.

In the left iliac area of the abdomen in its upper lumbar segment the stomach, spleen, left portion of the liver, loops of the colon are located, and in its central part loops of small intestines. The umbilical region is the left lower position of the colon (Fig.3).

Fig.3. Horse intestine

(Left side; lungs not shown; a part of the intestine and diaphragm not shown; the abdomen is "incised"):

1 - stomach; 2 - spleen; 3 - left hepatic lobe; 4 - jejunum loops; 5 - left and right positions of the colon sinistral ventral and dorsal colon; 6 - left kidney; 7 - colon tenue loop; 8 - left uterine horn; 9 - anus; 10 - vulvar slit; 11 - bladder; 12 - lower abdomen; part of pelvic and femoral bones are not shown.

In the iliac dextral region of the abdomen in its upper lumbar region the duodenum and the right loons of liver are located, and in the lower umbilical region the right lower colon and the cecum (Fig.4).

Fig. 4. Horse intestine (right side; lungs now shown, the abdominal wall is a cross-section; part of the diaphragm and hip joints are not demonstrated);

1 - duodenum;
2 - right lower position of the colon;
3 - cecum;
4 - right kidney;
5 - right liver lobe.

Treatment regiments: 4-64 Hz; exposure, 3-5 minutes on each side. In acute cases, the treatment is repeated in 4-6 hours.

The efficacy of treatment is enhanced when quantum therapy is combined with conventional therapy. It is recommendable to treat Head zones (Fig.2.) with a contact scanning techniques using regimens used in zonal quantum therapy and treatment of BAP according to prescriptions 8-16. The treatment of horses with diseases of the stomach, duodenum, pancreas and spleen should be applied to areas located in the lower chest, right and left, between the 5th and 10th ribs. Areas between the 11th and 13th ribs are treated in the presence of small intestinal diseases.

Regimens of BAP treatment: frequency, 64 Hz or 512 Hz; exposure, 1-2 minutes on each point. The course of therapy: 8-10 treatment sessions. Therapy is repeated in 4-6 hours in acute cases.

Two-three treatments are enough for intestinal peristalsis to restore and paresis to be reversed.

The effectiveness of quantum stimulation of intestinal motility in horses is up to 98 %. Intestinal motility is improved in 14.6% of horses after the first treatment session in 50% of after the second and in 34% after the third session. Intestinal motility usually returns to normal.

Two-three sessions make unnecessary further medical stimulating therapy.

The treatment is most effective at an early stage of ileus before the onset of deep degenerative changes in the gastrointestinal tract.

Gastrointestinal tract diseases associated with colic and pain

Enteralgia in horses is treated with a special rectal active emitter and externally with a contact-scanning technique in areas of projections of abdominal

organs.

Regimen: frequency, 4 to 64 Hz; exposure, 3-to 5 minutes. The treatment is repeated in 4-6 hours. General methods of drug treatment are not contraindicated. It is also recommended to treat Head zones of horses (Fig. 32), as well as biologically active points according to prescriptions 10, 11, 12, 16.

Areas located in the lower chest right and left between 5th and 10th ribs should be treated in the presence of the stomach, duodenum, pancreas, liver and spleen. Areas between the 11th and 13th ribs are treated in horses with diseases of the small intestine; cecum and ventral position of the colon, small intestinal diseases are treated in left areas and cecal ones in right areas. An area between the 13th and 15th ribs is treated in the presence of the ventral position of the colon with its pelvic convolution and stomach-like dilation, as well as transrectally, directing the emitter on the convolution.

Apart from the mentioned zones, BAP located on the posterior slope of withers are treated between the 2nd and 3rd spines of thoracic vertebrae (not shown in the figure), as well as points indicated in prescription 13.

Regimen of BAP treatment: frequency, 64 Hz or 512 Hz; exposure, 1-2 minutes each point. The course of therapy is 8-10 sessions. The treatment is repeated in 4-6 hours in acute cases.

Two-three treatment sessions are enough in most cases for intestinal motility to return to normal. Intestinal paresis as a rule resolves in 92% of cases.

The treatment is most effective at an early stage before the onset of ileus and degenerative changes in the gastrointestinal tract.

Enteritis

Enteritis, or intestinal inflammation, in horses is treated using quantum acupuncture of BAP according to prescriptions 9 and 12.

Regimen: frequency, 4 Hz or 64 Hz; exposure, 10-15 minutes. The course of therapy is continued until recovery, but it should not include more than 15 treatment sessions.

Usual digestive disorders in horses are treated as enteritis. Quantum acupuncture is applied to BAP according to prescriptions 14 and 16.

In the presence of coprostasis, BAP are treated according to prescription 11 and colic according to prescription 10.

6.5. Urinary tract diseases

Indications:

- * nephritis, pyelonephritis;
- * urocystitis.

Nephritis, pyelonephritis

Nephritis is kidney inflammation with several etiologies. It can be produced by

effects on the renal parenchyma of infectious and allergic antigens, irritating metabolic products of fir-needles trees, birch leaves of alder, spoiled feeds, poisonous substances or by overcooling.

Nephritis can be acute and chronic. Acute nephritis can last for 1-2 weeks and end in recovery, but more often it transforms into a chronic form that lasts for years. The prognosis in this case is unfavorable, working ability of horses' decreases and the animals have to be culled.

Pyelonephritis is inflammation of renal pelvis which is often purulent and involving kidney tissues. This disease is produced by the pathogenic microflora infiltrating by hematogenic, lymphogenic and descending ways from purulent foci in the urinary and genital tract.

Predisposing factors of pyelonephritis are hypothermia, kidney trauma, abscesses outside the urinary tract, micturition disorders and impeded urine outflow.

The prognosis is commonly unfavorable, especially in chronic pyelonephritis. Clinically recovering horses often lose working ability.

Quantum treatment of horses with nephritis and pyelonephritis is conducted with cutaneous scanning technique in lumbar projections of kidneys. These are located in horses left of the 18th rib to 3rd.4th transverse vertebral processes and right of the 17th rib to the 2nd transverse processes of lumbar vertebrae.

Regimen: frequency, 4 or 64 Hz; exposure, 5-10 minutes. Therapy is conducted every day or at a one day interval. The course of therapy is continued until recovery, but not more than 15 treatment sessions.

Urinary tract diseases in horse are treated transrectally, directing the emitter to kidney, ureters and the urinary bladder.

Regimen: frequency, 4 Hz or 64 Hz; exposure, 2-5 minutes, depending on inflammation severity.

Apart from zonal and transrectal treatment of the nephritis, there is a technique of BAP acupuncture according to prescription 37; prescription 36 – for kidney diseases with accompanying anuria.

Considering the severity of consequences of urinary tract diseases, conventional antibacterial treatment should be used in all these cases for the rapid recovery of the animal.

Urocystitis is superficial or deep inflammation of the urinary bladder mucosa. It can be acute and chronic. According to the pattern of inflammation, urocystitis is categorized into catarrhal, purulent, diphtheric and phlegmonous.

Inflammation occurs as a result of microflora invasion of the bladder, kidneys, genitalia, as well as by lymphogenic way.

Prognosis of mild catarrhal urocystitis is favourable and of chronic purulent urocystitis cautious, as inflammation can lead to micturition disorders, which will cause bladder rupture and the death of the animal.

The efficacy of medical treatment of urocystitis can be enhanced 15-20% by transrectal quantum therapy in which the emitter is directed to the bladder.

Regimen: 4 or 64 Hz; exposure 3-5 minutes daily. The course of therapy is 8-10 days. Improvement of the condition of the horse is seen after 3-4 treatments. Micturition disorders sometimes resolve with expulsion of stones or sands owing to relaxing effects of the RIKTA-MV device on smooth muscles of the urinary tract and bladder.

Apart from transrectal treatment of the urinary bladder, there is a technique of BAP acupuncture according to prescription 38 using pulse repetition frequencies 64 or 512 Hz and exposure 1 minute. The course of therapy includes 8-10 daily sessions.

6.6. Skin diseases

Indications:

- * eczema;
- * dermatitis of various origins.

Eczema

Eczema is inflammation of superficial skin layers occurring with itching rash. Eczema of the first phalanx or PUT is often seen. The disease can have acute, subacute and chronic recurring progress.

Eczema is induced by exogenous and endogenous factors, and can be localized or generalized, moist or dry.

External factor causing eczema is mechanical, chemical, thermal and microbial exposures. Internal factors are neurosis, functional thyroid and ovarian disorders, gastritis, neuritis, etc.

Acute eczema usually lasts for 10-15 days, subacute for 20-30 days and chronic for 1-2 months or longer.

Prognosis of acute eczema is favorable, of sub acute cautious and of chronic ambiguous.

Dermatitis of various origins

Dermatitis is skin inflammation. This disease affects horses more often than other animals. In most of cases dermatitis is located in the area of the first phalanx (PUT). Dermatitis can have traumatic, drug-related, thermal, chemical, parasitic, toxic and infection origin.

The prognosis of acute and chronic forms of the disease, when small skin area is involved, is most often favorable. In the presence of skin fissures, it is ambiguous or unfavorable. The prognosis of neglected toxic chronic dermatitis is cautious or ambiguous.

These prognoses have been ascertained with the use of conventional medical treatment and combined management including QT, the efficacy of which reaches 95-100% depending on a form of dermatitis and the time of beginning therapy.

Quantum therapy of eczema and dermatitis is carried out using a non-contact scanning technique (distance of the emitter from the skin 0.5-1 cm), frequency of

64 or 512 Hz and exposure of 5-10 minutes depending of size of the affected area. The treatment time is calculated as 5 minutes per area of the human palm. The course of therapy is 10-15 daily sessions. Improvement is seen as early as after 3-5 treatment sessions.

The efficacy of QT of dermatitis is enhanced if it is delivered after careful cleansing of dermatitis sites from earlier used applications of fat ointment.

Quantum acupuncture for horse dermatitis has not been developed and awaits decisions.

6.7. Obstetric-gynecologic diseases

Indications:

- * uterine atonia;
- * infertility;
- * vulvitis, vestibulitis, vaginitis;
- * uterine and vaginal prolapse;
- * ovarian dysfunction;
- * retained placenta;
- * mastitis;
- * vulva edema;
- * postpartum udder edema;
- * postpartum paresis;
- * salpyngitis;
- * stimulation of heat and fertilization;
- * labor stimulation;
- * uterine subinvolution and atonia;
- * cervicitis;
- * endometritis.

Quantum therapy of uterine atonia in horses is carried out transrectally. The rectum is manually cleaned of feces, a thin transparent glove covered by a thin film of vaseline is put on the emitter, and the emitter is manually inserted into the rectum, putting it in tight contact with the uterus.

Regimen: frequency, 64 Hz or 512 Hz; exposure during initial three sessions, 2 minutes and later 1 minute, one time a day. The course of therapy includes 305 sessions. The success rate is about 100%.

Quantum acupuncture is delivered cutaneously to BAP indicated in prescription 24.

Drug therapy can be used for speeding up the recovery of animals.

Infertility

A main cause of **infertility** is improper nutrition and upkeep of animals, as well as uterine and adnexal diseases.

Numerous literatures reports indicate that quantum therapy is highly effective

for infertility.

Quantum therapy of horses is carried out transiently with a special transrectal emitter.

The technique of inserting the emitter and the treatment regimen are similar to those used for uterine atonia.

Quantum acupuncture can be also used according to prescription 25. Exposure of each BAP is 1 minute. The course of therapy is 10-12 sessions conducted daily or at a one-day interval.

Experimental and clinical studies show that the success rate of QT in infertility is 87%. Extensive material has been obtained indicating that heat is induced and fertilization occurs in 10-15% of horses after 3-5 quantum treatment sessions. Moreover, 3-4 transrectal treatments of horses with latent endometritis, which is a cause of infertility, induce abundant vaginal exudate in 73.3% of cases, which is a sign of endometritis exacerbation. Resolution of inflammation is seen by the 5th-7th treatment session.

Vulvitis, vestibulitis, vaginitis

Therapy of these diseases in large animals is carried out intravaginally and transrectally using special emitters, as well as cutaneously or by contact treatment of the vulva.

Quantum treatment of BAP is available (prescription 17).

Regimens of rectal and vaginal treatment: frequency, 4 Hz, 64 Hz or 512 Hz; exposure, 1-2 minutes. Treatments are delivered daily or at a one day interval.

Acupuncture regimens: frequency, 512 Hz; exposure, 1 min per point.

Combination of internal and acupunctural modalities increases the effectiveness of therapy.

Vaginal and uterine prolapse

Quantum therapy of these conditions is allowed only after reducing of the vagina or uterus. The transrectal technique is used for treatment of horses. Regimen: frequency, 4 Hz or 64 Hz; exposure, 5-10 minutes. It is also necessary to treat edematous sites of the vulva and sutures if they were used for fixation of the uterus. Treatment regimens are used as in therapy of vulva edema.

Acupuncture of BAP can be used in horses according to prescription 18. Regimen: frequency, 64 Hz or 512 Hz; exposure, 1 minute for each point. Combining the two methods of treatment is effective: zonal QT is used on one day and quantum acupuncture on the second day.

Ovarian dysfunction

Dysfunction of ovaries, an important reproductive organ, can be caused by the presence of corpus luteum, ovarian follicular cysts, and salpingitis and by improper feeding and upkeep.

Quantum therapy alone can be used for ovarian dysfunction, but results are better when it is combined with drug treatment.

Therapy of large animals is carried out transrectally, aiming the emitter to ovarian projections.

Regimen: frequency, 4 Hz or 64 Hz; exposure, 2-3 minutes. The course of therapy includes 8-10 sessions that are delivered daily or at a one-day interval.

Acupuncture treatment of ovarian dysfunction in horses is conducted with a cutaneous stable technique, applying it to BAP according to prescription 27.

Better results are obtained by combining QT with hormones recommended for treatment of ovarian disease.

Retained placenta

Transrectal treatment of the uterus is used. Regimen: frequency, 4Hz or 64 Hz; exposure, 5 minutes. If the placenta remains retained after the first treatment session, the procedure is repeated in 4-6 hours using the same regimen. Frequencies can be alternated during the treatment. Quantum acupuncture of BAP of horses can be carried out using prescription 19: frequency, 64 Hz or 512 Hz; exposure, 1 minute, Course of therapy includes 2-3 sessions within 24 hours.

Quantum contact scanning treatment of the sacral area left and right of the dorsal line at a distance of four finger breadths is used for prevention of detained placenta, moving the emitter cranial or caudad during 5-8 minutes at frequencies of 64 or 512 Hz. The success rate is 96.6%.

Mastitis

Mastitis is most commonly seen on koumiss-producing farms when machine-milking is used. Equine mastitis is treated by irradiating affected sites: central quarters of the udder and nipple bases with a contact scanning or stable techniques. Regimen: frequency, 64 Hz or 512 Hz; exposure, 3 minutes during first 2-3 sessions and then 1-2 minutes until the end of therapy. The course of therapy is 5-10 sessions delivered daily or at a one day interval.

The effectiveness of this treatment is enhanced when it is combined with medical treatment,.

In the presence of a purulent process, QT using RIKTA-MV should be combined with antibacterial drugs.

We have obtained good results with quantum acupuncture of farm animals with mastitis.

Quantum therapy was delivered according to prescription 20 to areas of BAP in horses.

Regimen: frequency, 64 Hz or 512 Hz; exposure, 1 minute per point. A recommendable course of therapy is 8-10 sessions conducted daily or at a one day interval. Alternate frequencies can be used: 64 Hz at the first procedure, 512 Hz at the second and so on until the completion of therapy. The therapeutic efficacy can be increased by combining QT with drug treatment (Photo 3).

Photo 3. Mastitis

Vulvar edema

Quantum therapy of large animals with this disease is carried out using contact, non-contact and labile techniques at an edematous area.

Regimen: frequency, 64 Hz; exposure, 2-3 minutes depending of the size of the edematous area.

Regimen: frequency, 512 Hz; exposure, 1 minute per point.

Course of therapy: 5-6 sessions, daily or at a one day interval. The success rate: 98%.

Postpartum udder edema

Postpartum edema of the mammary gland is treated by a contact scanning technique. Regimen: frequency, 64 Hz or 512 Hz; exposure, 5 minutes.

This therapy is highly effective in all animals.

Postpartum paresis

Postpartum paresis is treated by quantum acupuncture of BAP according to prescription 31. Regimen: frequency, 64 Hz or 512 Hz; exposure, 1-2 minutes. All BAP of prescription 31 are simultaneously treated during one session; it is also recommended to carry out symptomatic QT by transrectal insertion of the emitter for simultaneous treatment of the large intestine and the urinary bladder, combining the treatment of the hungry pit left and right.

The efficacy of therapy is significantly enhanced when quantum and medical therapy are combined.

Salpingitis

Salpingitis is severe inflammation of oviducts that in most cases results in their obliteration. However, early detection and therapy of this disease can yield good results.

An experienced veterinary gynecologist can rectally determine the condition of oviducts. When they are affected, they are felt as painful solid structures resembling thin elastic rubber tubes.

Transrectal quantum treatment of the uterine and adnexal areas with a special active rectal tip is used in horses with salpingitis.

Regimen: 4 Hz or 64 Hz; exposure, 3-5 minutes. It is recommended to alternate frequencies at a one minute interval. Exposure can be increased on deliberation of a veterinarian specialist. The course of therapy: 3-8 sessions.

Treatment procedures are delivered daily or at a one day interval.

We recommend for treatment of salpingitis acupuncture of BAP that represent oviducts and ovaries on the body surface of horses according to prescription 21.

Regimen: frequency, 64 H or 512 Hz; exposure, 1 minute per point. It is useful to change frequencies from a session to a session: 4 Hz at the first session, 512 Hz at the second, 64 Hz at the third and so on. The course of therapy is 10-15 daily sessions.

Quantum therapy of salpingitis should be combined with antibiotics.

Stimulation of heat and fertilization

The most common gynecological diseases include ovarian hypofunction related to disorders of generative and hormonal function of animals.

Until recently therapy of this disease employed only drugs and has not been always effective and sometimes was even harmful.

Both zonal quantum therapy and quantum acupuncture are applicable for stimulation of physiological function of ovaries.

Internal genital organs of horses (the uterus and ovaries) are treated transrectally using 64 H or 512 Hz frequencies during 2-4 minutes one time a day. The course of therapy is continued for 6-8 days. Therapy should be begun at 10-15 days after delivery.

Quantum therapy not only has follicle-stimulating effects, but also prevents gynecological inflammatory diseases. Cases of induction of heat in horses after 2-7 sessions of quantum therapy are known.

Quantum acupuncture for heat stimulation is conducted by treating BAP according to prescription 29. Regimen: 64 Hz or 512 Hz; exposure 1 minute per point. The course of therapy: 8-10 sessions.

The therapy is stopped at the onset of heat. According to our evidence, the success rate of quantum therapy is 85.4%.

Quantum stimulation should not be combined with hormonal therapy, as this can lead to the ovarian hypofunction syndrome.

Quantum acupuncture of BAP according to prescription 33 uses the same regimen that as for stimulation of fertilization. In these cases treatment sessions are carried out 15-20 minutes before artificial insemination for induction of ovulation.

Labor stimulation

Labor is stimulated by transrectal treatment of the cervix and the uterine body. Regimen: frequency, 64 Hz or 512 Hz; exposure, 5 minutes.

This methodology can be combined with quantum acupuncture of biologically active points according to prescription 30. Regimen: frequency, 64 Hz or 512 Hz; exposure, 1 minute per point.

Having a myotonic effect, QT relieves pain and thus normalizes labor. If no effect is obtained after the first treatment session, stimulation can be repeated in 1-2 hours.

Uterine subinvolution and atonia

Uterine subinvolution in large animals is treated by two techniques: through a vaginal access using a vaginal emitter and transrectally using a rectal emitter.

Regimen: frequency, 64 Hz; exposure, 5 minutes. The course of therapy: 4-6 sessions.

When the acupuncture technique is used, BAP of horses are treated according to prescriptions 22 and 24. Regimen: frequency, 4 Hz or 64 Hz; exposure, 1 minute. Four to six treatment sessions are carried out daily.

Abundant discharge of lochia is seen after initial 2-4 procedures.

Quantum therapy is also used preventively. Regimens are the same as for treatment of uterine subinvolution. However, therapy is begun at 7-10 days following delivery.

Cervicitis

Cervicitis in large animals is treated with a special vaginal tip inserted into the vagina.

When a rectal technique is used, the emitter is placed on the projection of the uterine cervix. Regimen: frequency, 64 Hz; exposure 2 minutes, one time a day. The course of therapy is 6-8 sessions.

Quantum acupuncture of BAP is carried out using prescription 17. Regimen: frequency, 64 Hz or 512 Hz; exposure, 1 minute. The course of therapy includes 6-8 procedures.

Endometritis

Endometritis is inflammation of the uterine mucosa occurring in horses in the postpartum period and is seen rarer than in cows. Transrectal and intravaginal methods of treatment of horses with endometritis are used.

The transrectal method is more effective, as it provides the best access to the uterus through the rectal wall.

Regimens: frequency, 64 Hz or 512 Hz; exposure, 2 minutes during initial 2-3 treatment sessions and 1 minute until the completion of therapy. The course of therapy is 6-8 sessions conducted daily or at a one-day interval. Horses with endometritis show massive exudation from the vulva after 2-3 quantum therapy sessions, which indicates a positive result and resumption of uterine contractility. The success rate of the transrectal treatment is 86.4 to 97.6%.

When the intravaginal treatment is used, the emitter is placed into a sterile polyethylene disposable packet and inserted into the vagina such that the operational surface of the emitter is directed toward the body of the uterus.

Two intravaginal methodologies of endometritis therapy are recommended (Kazeyev). The first uses frequency 512 Hz and exposure 1 minute at a one day interval. The success rate is 91.5%.

Photo 4. Transvaginal method of quantum therapy

The second regimen is an alternation of frequencies - 64 Hz to 64 on the day, 4 Hz on the second and 512 Hz on the third day. Treatment sessions are successively repeated in the same order until the end of the course. The success rate is 91.6%.

Quantum acupuncture therapy of BAP in horses is used according to prescription 23.

Regimen: frequency, 64 Hz or 512 Hz; exposure, one minute per point. Therapy is continued until recovery, but not longer than 10-15 sessions. Treatment is delivered daily or at a one day interval. Frequencies may be changed: 64 Hz on day one, 512 Hz on day two, and so on.

It is recommendable to combine the two techniques using them on an alternate basis: zonal QT on one day and quantum acupuncture of biologically active points using a special external (cutaneous) emitter on the next.

6.8 Andrological diseases

Indications:

- * impotency of studs;
- * orchitis;
- * impaired quality of sperm

Impotency of studs

Quantum therapy is applied to an area of location of testes in the scrotum for **impotency** of studs. Regimen: frequency, 64 Hz or 512 Hz; exposure, 1-2 minutes on each side. The course of therapy is continued for 5-7 days using a contact or non-contact scanning technique.

The therapy improves potency of an affected animal and the quality of sperm, as quantum treatment enhances the hormonal status of the genital system of males.

Orchitis

Orchitis is inflammation of testes that occurs in farms animals and all pet animals. Quantum therapy is carried out by scanning the affected testis. Exposure is increased two times when orchitis is bilateral. In the presence of chronic orchitis, 512 Hz or 4096 Hz frequency and the same exposure are used. Therapy is continued until recovery, but not longer than 15 sessions conducted daily or at a one day interval. Frequencies should be alternated during the course of therapy.

Clinical results are better if QT is combined with drug and physical therapy such as ultra-high frequency therapy, ozokerite and paraffin applications, as well as penicillin-novocaine lumbar blockade. It is not recommended to use QT and UHF therapy on one day. Other mentioned procedures can be used on one day.

Treatment of BAP in horses with orchitis has been described (prescription 34).

If abscesses occur, they must be opened before beginning therapy.

Therapy can be effective in cases of acute serous orchitis, but organ function does not restore in other forms of inflammation.

Improvement of sperm quality

When artificial insemination is used, fresh ejaculate should be treated distantly for 3-5 minutes at 4 H frequency; exposure is not longer than 1 minute. Sperm quality is evaluated after the first treatment and, if it is necessary, sperm is repeatedly treatm at 4 Hz for 1 minute.

6.9 Enhancement of reproductive function of studs

A low quality of sperm is an acute problem is horse breeding.

Treatment using RIKTA-MV is delivered to the scrotal testicular areas on both sides for 1 minute daily by a scanning technique at 64 Hz or 512 Hz.

Improvement of the quality of sperm and potency is seen at 1.5-2 months after quantum therapy. Effects of QT keep for 1-1.5 months, and the course of therapy should be repeated.

Quantum therapy ensures practically 100% fertilization rate.

7. BIOLOGICAL STIMULATION OF SPORT HORSES

When horses are prepared for an important race or a many-day contest and during strainful training, quantum stimulation is carried out by three methods: transcutaneous treatment of blood, cutaneous (contact) scanning of muscles and treatment of BAP.

7.1. Transcutaneous treatment of blood

The emitter of the RIKTA-MV device is placed on the projection of the jugular vein and fixed with an elastic band (Photo 5).

Stimulation is carried out at a one day interval, alternating it on the left and right sides of the neck.

Parameters: frequency, 4096 Hz; exposure, 25-30 minutes. The course of stimulation: three sessions. The last stimulation is conducted one hour before a contest.

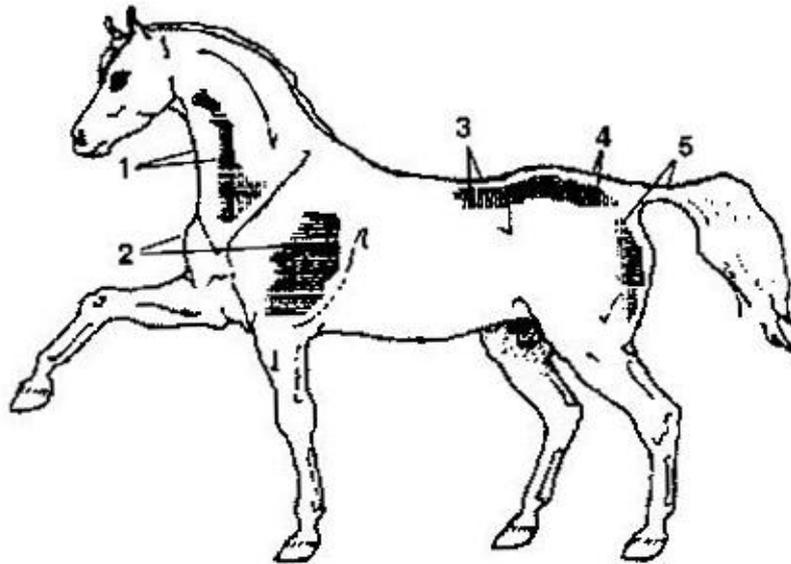
Photo 5. Supravenous treatment of blood

7.2. Cutaneous (contact) quantum treatment of muscles in horses

Muscle groups that are exposed to most of strain during exercise are treated during preparation of horses for contests or during contests. The emitter of RIKTA-MV is alternately applied to main body areas using a contact scanning technique (Fig. 5).

Fig.5. Topography of quantum treatment of horses





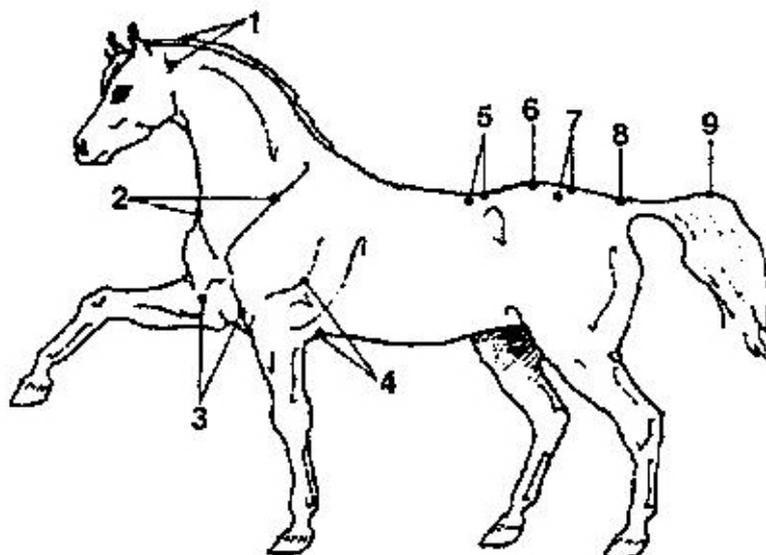
The following areas of the body are treated:

1. Neck area - median and lower brachiocephalic muscle, on left and right.
2. Scapular area - triceps, the retrospinal muscle and the tensor of the broad shoulder fascia, on left and right.
3. Lumbar area - broad and long muscles of the back, on left and right.
4. Dorsal area of the cruppers - superficial and gluteal muscles, on left and right.
5. Posterior thigh surface - semitendinous and semimembranous muscles.

Regimen: frequency, 64 Hz or 512 Hz; exposure, 3 minute on each area on left and right.

7.3. Treatment of biologically active points (BAP)

Of the total of 162 points described in the acupuncture atlas of Westermayer (1976), BAP that are responsible for functioning of the most actively working muscles and joints have been selected by us for treatment. We have treated only 9 points for biological stimulation and rehabilitation of sport horses before and after contests. Points in Fig.6 were given numbers by the authors (parenthesized are Westermayer numbers of points).



Stimulation regimens: frequency, 64 Hz or 512 Hz; exposure, 1 minute per point. The course of stimulation: 3 treatments at a 24 hour interval.

The last stimulation should be carried out 30-40 minutes before exercise and 1.-1.5 hours after it, when the horse rehabilitates after intensive work.

It should be noted that horses that received quantum treatment won prizes more often as compared to horses that were not stimulated and rehabilitated using this methodology.

7.4. Topography of biologically active points for stimulation of horses

Active points located on the dorsomedial line of the body are not paired. All other BAP that are located laterally from the medial line are paired.

Fig. 6. Biologically active points of horses.

1. Neck - location: four fingers below the ear line and 3 fingers below the mane line (subatlantal reflexogenic area) (No.54);
2. Neck - location: on the border between the median and upper third of the shoulder blade (No. 81);
3. Foreleg - location: on the anterior shoulder surface before the shoulder joint in a pit between the anterior shoulder tuber and the chest on the lower ulner tuber (No. 86);
4. Foreleg - location: in a pit near the posterior ventral edge of the shoulder blade, in the space between the 2nd-3rd ribs at the level of the shoulder joint (No. 85);
5. Lumboabdominal- location: one palmbreadth from the dorsomedial line of the body between 3rd and 4th transverse processes of lumbar vertebra of the first sacral vertebra (No. 38);
6. Lumboabdominal - location: on the dorsomedial line between spines of the last lumbar and the first sacral vertebra (No. 25);
7. Lumbosacral - location: one palmbreadth on the dorsomedial line of the body between the iliac bone and the transverse process of the 5th-6th lumbar vertebra (No.36);
8. Tail - location: on the dorsomedial line in a pit between the 1st and 2nd caudal vertebra (No. 24);
9. Tail - location: at the center of the tail end (No. 144).

8. SUMMARY

These guidelines are intended for veterinary specialists who begin practicing quantum therapy in horse breeding and work in horse breeding on farms, hippodromes and other organizations, and are aimed to assist them in rapid learning the highly effective methods of treatment and prevention of equine diseases and rehabilitation.

These methodologies allow speeding up the therapy process and, in some cases, cure of refractory diseases.

The methodologies for treatment of reproductive organs in horses presented in the guidelines are only the beginning of the adoption of QT in Russia's horse breeding which, with its horse herd of 1.7 million head, has the first place in Europe and one of leading positions in the world.

It should be stated that the regimens of quantum therapy described in this manual are not hardbound and unchangeable. Veterinarians in practice have room for finding more effective modalities for some or other nosologic entities.

There is sufficient experimental and clinical evidence indicating that low-energy laser radiation is a safe therapy. It cannot adversely affect the progress of inflammatory disease or the health status of the animal when the recommended regimens are used, because a feature of quantum therapy is its combining several physical factors: pulsed laser radiation, continuous infrared radiation, and the stationary magnetic field that are close to effects of natural radiation of the Sun and the magnetic field of Earth. Offspring of animals that receive QT is healthier, better gains weight and shows a lower morbidity rate. However, a higher therapeutic efficacy of quantum radiation is seen in some animals and lower one in others in the presence of one and the same disease. This may be related to individual features of animals or the presence of intercurrent helminthic diseases.

Combination of QT with drug treatment consolidates the effectiveness of the latter, owing to which the management of reproductive tract inflammation proves more effective in an overwhelming majority of horses as compared to conventional drug therapy alone.

It should be taken into account that better results are seen when transrectal and acupunctural methods of therapy are used in combination. This is explained by the fact that acupuncture treatment using the presented regimens and locations of "organ-dependent" BAP stimulates defense reactions of affected organs. As a result, clinical symptoms resolve, the duration of treatment is shortened and recovery occurs faster, which is important for horse-breeding farms in economic terms.

Clinical evidence shows that abundant release of exudate from the inflammatory site occurs after 3-4 QT sessions in the presence of inflammatory diseases. This is a favorable sign of the beginning recovery of the animal. This should be borne in mind, and therapy must never be stopped until there are clinical signs of complete recovery.

Quantum therapy is used alone in most cases, but it can be adjuncted in complex clinical situations by drug treatment or physical procedures (massage,

hydrotherapy). However, QT should not be combined with electrophysical procedures on one day.

It should be stressed that QT is not a panacea, but one of the most important physical, ecologically clean treatment methods that have not been available so far.

We are sure that veterinarian physicians adopting QT in their practice will very quickly make sure of its effectiveness and will reach success in their work.

We are also sure that quantum methodologies in veterinary medicine will take an important place in therapy of horses and other farm animals. Let these guidelines be a new starting ground in your noble work.

ATLAS OF BIOLOGICALLY ACTIVE POINTS

For the rapid search of biologically active points, areas of their locations are indicated along with their numbers.

The head - (H); the neck area - (N), the chest - (C), the foreleg (FL), the lumboabdominal area - (LA), the hindleg - (HL), the udder - (U), the tail - (T).

1.1. Locations of biologically active points on the body of horses

1. LA - on the ventromedial line at the center of the navel
2. LA - on the ventromedial line, two palmbreadths from the navel
3. C - on the ventromedial line, two palmbreadths caudad from the xyphoid process
4. C - on the ventromedial line, one palmbreadth caudad from the xyphoid process
5. C - on the ventromedial line, at the base of the xyphoid process
6. C - on the ventromedial line, one palmbreadth cradiad from the xyphoid process, at the center of the navel
7. FL - about two fingerbreadths above the presternum, on the ventrosagittal line
8. FL - at the level of the lower edge of the shoulder bone caput, on the ventrosagittal line
9. N - on the border of the neck and chest area on the ventrosagittal line
10. H - on the medial line of the head, at the center between nostrils
11. H - on the medial line of the head, on the border between the nose and head hair.
12. H - on the sagittal line of the head at the level of the medial corner of the eye
13. H - on the sagittal line of the head, at the level of the lateral corner of the eye.
14. H - two-three fingerbreadths, orad from the occipital ridge, on the sagittal line.
15. H - on the sagittal line, at the point of its intersection with the line connecting ear roots.
16. C - on the dorsomedial line in the depression between the 1st and 2nd spines of thoracic vetebra
17. C - on the dorsomedial line in the depression between the 3rd and 4th c spines of thoracic vertebra
18. C - on the dorsomedial line in the depression between the 5th and 5th c spines of thoracic vertebra
19. C - on the dorsomedial line in the depression between the 6th and 7th thoracic vertebra
20. C - on the dorsomedial line in the depression between the the 8th and 9th

- spines of thoracic vertebra
21. C - on the dorsomedial line in the depression between spines of the 16th and 17th thoracic vertebra.
 22. C - on the dorsomedial line in the depression between 17th and 18th spines of thoracic vertebra
 23. LA on the dorsomedial line in the depression between spines of the last thoracic and the first lumbar vertebra
 24. LA - on the dorsomedial loine in the depression between the 1st and 2nd lumbar vertebra.
 25. LA - on the dorsomedial line in the depression between the spines of the last lumbar and 1st sacral vertebra (Photo 6).

Photo 6. Main general stimulating BAP 25

26. (S) - on the dorsomedial line un the depression between the 2nd and 3rd sacral vertebra
27. T - on the dorsomedial line in the depression between the 1st and 2nd caudal vertebra
28. T - on the dorsomedial line in the depression between the 2nd and 3rd caudal vertebra
29. T - on the dorsomedial line in the recess between the 3rd and 4th caudal vertebra
30. T - at the tail end, in the center of the last vertebra
31. H - bilaterally, at the end of the alal cartilage.
32. H - bilaterally, in the corner of the mouth, 2 cm above and caudad of it.
33. H - bilaterally, on the upper lip, 0.5 cm from the sagittal line of the head, 2 cm dorsocaudad from BAP 11
34. H - bilaterally, 2 fingers dorsad from the upper nostril edge.
35. H - bilaterally, 2 fingers dorsad above BAP 34
36. H - on the caudal side of auricle tips on the auricular vein.
37. H - bilaterally, 4 fingers below the ear base and 3 fingers from the mane line
38. H - bilaterally, on the line of the lateral corner of the eye, a fingerbreadth to the nose from BAP 38
39. H - bilaterally, on the line of the external corner of the eye, 2.5 cm beneath it
40. H - bilaterally, at the point of intersection of the line from the corner of the mouth to the anterior edge of the masticator muscle
41. H - bilaterally, 4 fingers caudad from the anterior border of the masticator muscle, on the line drawn from the corner of the mouth
42. H - bilaterally, behind the maxillary joint, 3 fingers beneath BAP 43
43. H - bilaterally, above the maxillary joint in the recess of the maxillary bone
44. N - bilaterally, one fingerbreadth beneath the jugular vein bifurcation, between its upper and medial thirds
45. C - bilaterally, on the medial line of the scapula, between the spine of the 1st

- vertebra and the anterior scapular edge
46. C - bilaterally, 2-3 fingerbreadths above the shoulder joint, at the anterior edge of the shoulder blade
 47. N - bilaterally, 5-6 fingers caudad from the ear base at the level of the caudal edge of the atlas ala
 48. N - bilaterally, in the recess between transverse processes of the 1st and 2nd cervical vertebra
 49. N - bilaterally, two fingers beneath the mane line, 1/8 of the line connecting BAP 46 and 39
 50. N - bilaterally, two fingers beneath the mane line, at a distance of 2/8 of the above mentioned line
 51. N - bilaterally, two fingerbreadths below the mane line, at a distance of 3/8 of the line mentioned above.
 52. N - Bilaterally, two fingerbreadths beneath the mane line, at a distance of 4/8 of the line mentioned above
 53. N - bilaterally, two fingerbreadths beneath the mane line, at a distance of 5/8 of the line mentioned above
 54. N - bilaterally, two fingerbreadths beneath the mane line at a distance of 6/8 of the line mentioned above
 55. N bilaterally, two fingerbreadths beneath the mane line at a distance of 7/8 of the line mentioned above
 56. N - bilaterally, two fingerbreadths beneath the mane line and four fingerbreadths of the cranial scapular tuber
 57. FL - bilaterally, on the anterior edge of the shoulder blade at the site of transition to scapular cartilage, four fingers below the mane line
 58. FL - bilaterally, 3 fingers beneath the dorsomedial line and 2 fingers caudad of an imaginary vertical line over the scapular ridge on scapular cartilage
 59. FL - bilaterally, one palmbreadth and two fingerbreadths from the dorsomedial line in the middle of upper scapular cartilage
 60. FL - bilaterally in the recess at the caudal scapular edge, at the point of intersection of the shoulder blade with scapular cartilage.
 61. C - bilaterally, four fingers beneath the withers between transverse processes of the 11th and 12th thoracic vertebra.
 62. C - bilaterally, 6-7 fingers beneath the dorsomedial line between the 13th and 14th ribs.
 63. C - bilaterally, 6-7 fingers beneath the dorsomedial lone, between the 16th and 17th ribs.
 64. LA - bilaterally, one palm from the dorsomedial line between the 1st and 2nd transverse processes of lumbar vertebra.
 65. LA - bilaterally, one palm from the dorsomedial line between the 2nd and 3rd transeverse lumbar processes.
 66. LA - bilaterally, one palm from the dorsomedial line between the 3rd and 4th transverse processes of lumbar vertebra.
 67. LA - bilaterally, one palm from the dorsomedial line between the 4th and 6th transverse processes of lumbar vertebra

68. LA - bilaterally, one palm from the dorsomedial line between the 5th and 6th transverse lumbar vertebral processes.
69. LA - bilaterally, one palm between the cranial edge of the iliac bone and the last transverse process of the lumbar vertebra
70. LA - bilaterally, in the corner formed by the 18th rib and the transverse costal process of the 1st lumbar vertebra
71. LA - bilaterally, two palms and three fingers beneath the dorsomedial line, on a parallel line between the 18th rib and the transverse process of the 1st lumbar vertebra
72. LA - bilaterally, two palms and three fingers beneath the dorsomedial line on a parallel to the last rib at the level between transverse processes of the 1st and 2nd lumbar vertebra (in the center of the hungry fossa)
73. LA - bilaterally, beneath the brachiocephalic joint
74. LA - bilaterally, three palms from the dorsomedial line and one finger caudal at the level of the brachiocephalic joint
75. LA - bilaterally, at the level of the ulnar tuber and half a palmbreadth caudad from BAP 76
76. LA - bilaterally, at the level of the ulna and on a vertical line drawn from the 15th intercostal space, near the rib arch
77. LA - bilaterally, from the ventrosagittal line, one palm dorsad and 2 fingers caudad from the navel
78. C - bilaterally, on the line drawn from the middle of the shoulder blade caudad to the 18th rib, at a distance of two palms and three fingers from the dorsomedial line of the back, between the 4th and 5th ribs
79. C - bilaterally, on the above mentioned line between the 5th and 6th ribs.
80. C - bilaterally, on the above mentioned line between the 7th and 8th ribs.
81. C - bilaterally, on the above mentioned line between the 8th and 9th ribs.
82. C - bilaterally, on the above mentioned line between the 9th and 10th ribs.
83. C - bilaterally, on the above mentioned line between the 10th and 11th ribs
84. C - bilaterally, on the above mentioned line between the 11th and 12th ribs.
85. C - bilaterally, on the above mentioned line between the 12^h and 13th ribs.
86. C - bilaterally, on the above mentioned line between the 13th and 14th ribs.
87. C - bilaterally, on the above mentioned line between the 14th and 15th ribs
88. C - bilaterally, on the above mentioned line between the 15th and 16th ribs
89. C - bilaterally, on the above mentioned line between the 16th and 17th ribs.
90. C - bilaterally, on the above mentioned line between the 17th and 18th ribs
91. C - bilaterally, in the elbow skin fold 2-3 fingers above the elbow tuber line at the level of the 5th intercostal space.
92. C - bilaterally, four palmbreadths from the dorsomedial line in the 6th intercostal space at the level of the brachioscapular joint
93. C - bilaterally, on the line of the elbow tuber caudad beneath BAP 92.
94. C - bilaterally, three palms from the dorsomedial line in the 9th intercostal space at the level of the brachioscapular joint
95. C - bilaterally, three palms and two fingers from the dorsomedial line in the 13th intercostal space at the level of the brachioscapular joint

96. C - bilaterally, in the 6th intercostal space near the base of the rib arch, at the level of the ulnar tuber
97. C - bilaterally, in the 7th intercostal space near the rib arch base at the level of of the elbow tuber.
98. C - bilaterally, in the 8th intercostal space, near the rib arch base at the level o of the ulnar tuber
99. C - bilaterally, in the 14th intercostal space at the rib arch base at the level of the brachial tuber
100. FL - bilaterally, at the anterior edge of the elbow joint in the recesses between elbow bone tubers
101. FL - bilaterally, craniad and beneath the brachial joint in the recess formed by the brachial tuber and the chest, at the level of the lower tuber border
102. FL - caudad, on the line of the shoulder in the lateral recess of the brachial tuber
103. FL - on the medial line of the brachial bone, caudad in the 2nd intercostal space at the site of rib transition to rib cartilage
104. FL - in the recess between the ulnar process and brachial condyles
105. FL - two fingerbreadths beneath and posterior of the ulnar process, medially from the ulna in the 5th intercostals space, near the base of the rib arch
106. FL - laterally, half a palm beneath the ulnar joint in the recess between the ulnar process and the radius
107. FL - four fingers beneath BAP 106 and caudad from the volar side of the radius
108. FL - on the interior surface of the radius, at the site of transition of the medial third of the radius to its distal end
109. FL - two fingers above the medial carpal joint on the lateral side of the distal radius
110. FL - on the medial side of the distal radius near the edge of the carpal joint
111. FL - on the proximal quarter of the carpal bone, on the interior surface beneath the carpal joint
112. FL - laterally, at the proximal quarter of the metacarpal bone beneath the carpal joint
113. FL - on the medial side of the metacarpal bone on the upper border of the metacarpal joint
114. FL - on the lateral side of the metacarpal bone near the upper border of the metacarpal joint, on the lateral digital vein
115. FL - 1 cm laterally from the medial line of the hoof crown at the transition from hair to the hairless surface
116. FL - caudal-lateral part of the metacarpal joint over sesamoid bones
117. FL - in the middle between the concave portion of the posterior hoof surface at the height recess of the hoof joint
118. FL -in the recess behind hoof cartilage at the upper edge of the hock,

medially

119. FL - in the recess behind hoof cartilage at the upper edge of the hock, laterally

120. HL - bilaterally, three fingers from the dorsomedial line in the recess between transverse processes of the 4th and 5th sacral vertebrae.

121. HL - bilaterally, three fingers from the dorsomedial line in the recess between transverse processes of the 3rd and 4th sacral vertebrae.

122. HL - bilaterally, three fingers from the dorsomedial line in the recess between transverse processes of the 2nd and 3rd sacral vertebrae

123 HL - bilaterally, three fingers from the dorsomedial line in the recess between transverse processes of the 1st and 2nd sacral vertebrae

124. HL - on the border of transition from an imaginary vertical line from carpal joint to the line of the back.

125. HL - bilaterally, in the middle of the line drawn between the femur and BAP 27

126. HL - bilaterally, in the middle of the line drawn between BAP 130 and the tail root

127. HL - bilaterally, in the recess behind and beneath the iliac tuber.

128. HL - bilaterally, in the recess above the anterior edge of the hip joint

129. HL - bilaterally, in the recess formed between the greater and third femoral trochanter, in front of the bone ridge.

130. HL - bilaterally, in the recess behind and above the third femoral trochanter

131. HL - bilaterally, in the middle of the line connecting the anterior edge of the greater trochanter with the knee cap.

132. HL - bilaterally, behind the knee joint in the recess of the lateral femoral condyle

133. HL - bilaterally, on the plantar side of the knee joint in the recess between femoral and tibial bones

134. HL - bilaterally, in the recess above the knee cap

135. HL - on the medial hip side, on the hidden vein, five fingers beneath the median point of hip to cruppers transition.

136. HL - on the lower border of the knee cap between the lateral and medial ligaments

137. 4 fingers beneath BAP 138.

138. HL - on the medial side of the medial tibia three fingerbreadths caudad of the long digital flexor cartilage

139. HL - on the medial side of the tibia, on its distal end above the upper edge of the tarsal joint

140. HL - bilaterally, near the tail root on the lateral side, in the near-root recess

141. HL - bilaterally, a palmbreadth from the dorsomedial line, craniad from the tail root, on the caudal border of the sciatic tuber, in the recess between the biceps and semitendinous muscle

142. HL - two palms beneath the dorsomedial line, at the height of the

- sciatic bone in the recess formed by biceps and semitendinous muscles
143. HL - in the first third of the dorsal line connecting BAP 134 and 137
144. HL - in the second (medial) segment of the line connecting BAP 134 and 137
145. HL - in the recess formed by femoral biceps and semitendinous muscles, at the level of the upper border of the knee fold.
146. HL - 5 palms beneath the dorsomedial line in the recess formed by the femoral biceps and the semitendinous muscle at the knee cap level
147. HL - bilaterally, at the level of half-height of the tibia and two fingers caudad from it
148. HL - bilaterally, one finger beneath the upper line of the calcaneal tuber
149. HL - bilaterally, on the proximal epiphysis of the tibia, in the recess near the fibular caput
150. HL - two fingers craniad, above BAP 143, in the recess formed by the internal and external edges of the medial tibia
151. HL - craniad, on the dorsal surface of the concave site of the tarsal joint
152. HL - on the medial surface of the metatarsus, three fingerbreadths proximally from its distal end, on the medial digital vein
153. HL - on the lateral surface of the metatarsus, two fingerbreadths proximally from its distal end, on the lateral digital vein
154. HL - on the anterior coronet edge at transition from hair to hairless surface
155. HL - on the lateral surface of the metacarpal joint in the fissure between sesamoid bones
156. HL - caudad in the middle of the concave part of the hoof, above the frog at the height of the hoof joint
157. HL - in the recess behind hoof cartilage laterally on the upper frog border
158. HL - in the recess behind hoof cartilage, medially on the upper frog border
159. T - on the medial line of the border in the recess between the anus and the tail root
160. T - on the medial line with a highly raised tail, four fingerbreadths from the root of the tail to its lower portion
161. FL - bilaterally, at bases of udder nipples
162. On the sagittal line of the body in the middle of the perineum, between the anus and vulva

Fig.7 Skin locations of biologically active points in horses (lateral view)

1.2. Quantum therapy prescriptions in diseases of horses

Diagnosis and symptoms	No.of prescription	No.of biologically active points
1	2	3
1. Respiratory tract diseases		
Bronchitis	1	82,94,61,10,33,34,52,54,57,79,80
Bronchopneumonia	2	10,33,36,52,53,55,45,56,78,79
Lung hyperemia	3	14,34,35,44
Laryngitis	4	84,49,10,11,35,31
Pneumonia	5	11,34,35,37,21,81,82,83,46,100,10,52,53,78,61,94
Rhinitis	6	34,35,31,11,44,12,13
Tracheitis	7	10,31,35,47,43,44,50,51,52
2. Digestive tract diseases		
Gastritis	8	74,90,83,74,159,1,2,71,88,72
Gastroenteritis	9	1,85,132,133,149,159,74,71,90,95,94
Intestinal colic	10	2,90,81,74,92,25,11,115,149
Coprostasis	11	5,72,3,2,160,159
Intestinal meteorism	12	74,71,90,89,88,85,70,121
Acute intestinal dilation	13	15,149,6,5,4,71,72
Sand in the stomach and intestine	14	90,16,60,61,82,84,71,72,99,76,3,1
Pharyngitis	15	10,11,32,40,41,47,44,46,100,9,84,82,31
Chymostasis	16	71,72,74,99,76,3,2
3.Reproductive tract diseases		
Obstetric		
Vulvitis,vaginitis,vestibulitis	17	23,25,67,29,122,120,140,159,142
Uterine prolapse	18	24,25,57,28,29,30,140,159
Retained placenta	19	65,23,24,55,142,160,161,146,30,25,27,159
Mastitis	20	25,162
Salpingitis	21	16,17,23,24,25,20,63,64,65,66
Uterine subinvolution	22	23,24,25,67,28,45,120,140,30,127,51,159,160
Acute endometritis	23	23,24,25,27,28,45,42,78,100,125,127,161,146,159,36,66
Gynecologic		
Uterine atonia	24	23,25,24,140,159
Infertility	25	27,24,140,124,127,138
Ovarian inflammation	26	22,23,24,25,27,65,69,124
Ovarian dysfunction	27	23,24,22,62,63,143,146,147,159,66
Ovarian cyst	28	23,24,25,69,122,140,159,141,142,143
Persistent corpus luteum	29	23,24,25,26,27,64,30,140,160
Labor stimulation	30	44,23,25,29,30,140,127,159,1,24,120,121,122,123,138
Uterine seizures	31	90,87,85,81,92,93,66,123
Chronic endometritis	32	44,16,23,68,160,24,25,28,140,159,146,149
4. Angrological diseases		
Impotency of studs	33	44,25,29,30,161,160,159,141,30
Orchitis	34	23,29,159,75,134,145,135,138
Penis paralysis	35	120,121,122,123,141
5. Urinary tract diseases		
Urinary tract disorders	36	138,130,75
Nephritis	37	24,21,65,130,23,22,66,71,72,141,75,138

Cystitis	38	46,148,75,138,130,24,65
6. Pain in the area of		
Chest	39	91,105,106
Withers	40	55,54,53,52,51,50,49,48,47,37,13,12
Sacrum	41	2,124,68,161
Legs	42	126,128,129,130,132,133,134,136
Lumbus	43	27,121,122,123,124,68,67,66,65,64
7. Inflammation of foreleg joints		
Carpal	44	103,106,109,110,112,113,114,117,156
Hoof	45	93,110,112,115,118
Ulnar	46	46,78,100,102,103,91,105,107
Scapulobrachial	47	59,57,45,46,78,100,103,91,104,105
Pastern	48	112,113,114,115,116,118,119
8. Inflammation of hindleg joints		
Tarsal	49	133,149,150,151,139,156
Knee	50	146,147,124,127,131,132,134,135,136,137
Hoof	51	154,157,158,156
Pastern	52	155,152,153
Hip	53	142,145,124,128,129,130,131,135,136
9. Joint contusions		
Foreleg coronet	54	107,118,119
Hindleg coronet	55	156,158,154
Tarsal	56	152,153,151,150
Foreleg pastern	57	113,114,115
Hindleg pastern	58	152,153,155
10. Muscle inflammation		
Chest	59	103,104,91
Carpus	60	107,109,108
Ulna	61	107,114,105
Foreleg flexors	62	110,112,113,114,116,117
Hindleg flexors	63	125,150,151,155,156
Neck	64	104,45,46
11. Nerve paralysis		
Femoral	65	141,145,128,129,130
Tibial	66	129,130,131,132,133,136,149,138,150,139
Facial	67	32,40,41,39,42,43
Radial	68	101,102,103,106,107
Prescapular	69	160,59,57,45,46,78,100,104
Sciatic	70	142,143,144,125,124,126,127,12,9,27,122,66,64,147
12. Muscle paralysis		
Muscles of the back	71	59,57,45,46,78,100,101,102,106
Foreleg muscles	72	116,107
Hip muscles	73	142,143,144,145,125,128,130,137
Abdominal muscles	74	36,11,31,32,38,39
Hindleg muscles	75	146,147,155
Cruppers muscles	76	141,131,125
Hoof muscles	77	120,121,122,123,69,68,67
Lumbar muscles	78	66,65,64
13. Foreleg muscle spasm		

Ulna joint	79	107,106,105
Brachial joint	80	106,105,102
Pastern joint	81	107,113,114,116
Foreleg frog	82	115,118,119
14. Hindleg muscle spasm		
Hip	83	142,143,144,145,125,128,130,137
Abdominal	84	36,11,31,32,38,39
Carpal	85	151,152,155
Hindleg hoof	86	157,158
Cruppers	87	141,131,125
Pastern	88	152,153,155
Knee joint	89	136,134,132
Semimembranous	90	142,143,144,145,125,128
Semitendinous	91	46,78,100,101,102,103,126
Lumbar	92	66,65,64
Hindleg flexors	93	150,151,155
Hindleg frog	94	157,158
15. Hoof dermatitis		
Hindlegs	95	146,135,137,138,154,156,157,158
Forelegs	96	93,115,116,117,118,119
16. Infectious diseases		
Influenza	97	84,93,36,42,107,116,30,25
Tetanus	98	95,25,56,55,54,53,52,51,50,49,48,47,37,45,14,32,40,43,42,107
17. Other diseases		
Bleedings fater castration	99	23,21
Nasal bleeding	100	23,22,21
Hindleg edema	101	135,137
Head area edema	102	41,112
Undue fatigue	103	81,25,34,35,33,44,108,30
Heart failure	104	56,169,103,25
Solar stroke	105	92,93,25,44,30

RESULTS OF QUANTUM THERAPY IN HORSE BREEDING

2.1. Biostimulation of performance of sport horses using quantum therapeutic methods

(All-Russia Research Institute of Horse Breeding, Ryazan)

The quantum therapeutic device RIKTA-MV has been used at the All-Russia Research Institute of Horse Breeding, Ryazan, over nine years for prevention of fatigue and rehabilitation of the functional status of studs and sport horses after intensive exercise.

Experiments have been carried out with RIKTA-MV in preparation of sport horses for contests.

Three methodologies of low-energy laser irradiation of horses have been evaluated: supraenous treatment of blood, contact treatment of muscles and treatment of biologically active points (BAP).

Blood parameters depicting the immune status have been examined during strainful periods of Russia's three-day event championships.

Three treatments of BAP with the RIKTA-MV device increased aldolase activity 3 times, which proved 18% higher as compared to control horses. The catalase activity increased 3.27 mg H₂O₂, to 103% of that in the control group. At 45 days following 3 laser treatments of muscles, the activity of these enzymes decreased relatively to pretreatment levels, but the level of aldolase remained 9.2% and catalase 55% higher than in the control group. The aldolase and catalase activity is known to increase with the higher training and to indicate endurance of the organism (Kazeyev et al.).

Studies of protein fractions at 7 days following the treatment of BAP and at 45 days of muscle treatment have shown a tendency of blood albumin to increase in control horses, which indicates activation of reduction-oxidation processes and enhancement of the training level (Kazeyev et al.).

The stimulation of BAP with RIKTA-MV during utmost strain was most prominent and occurred as a change of the heart and respiratory rate, and of erythrocyte and hemoglobin concentrations.

Blood of horses that received quantum stimulation using different methods and after exercise of different intensity showed lower metabolite concentrations as compared to controls (up to 50%) after different measurements.

Intensive training, especially in the contest period, caused a depression of blood gamma-globulins, suggesting a decrease in immunoreactivity of the organism and a higher likelihood of disease.

In treated horses, the gamma-globulin fractions decreased from 24 to 23% and in control horses from 23% to 15%.

Thus, the use of quantum therapy for biologic stimulation of sport horses is a promising methodology. Considering that doping control is permanent

in equine sport, the use of quantum therapy is a proper way of reinforcement, as it is not associated with the introduction of any substances in the organism.

2.2. Quantum treatment of locomotor disorders in horses

(All-Russia Research Institute of Horse Breeding, Ryazan)

Overstrain and exhaustion, work at the limit of capacities of the organism of a sport horse lead to excessive fatigue and the onset of locomotor diseases. This increases the likelihood of severe injuries, shortness the stay in sport and worsens sport performance.

The quantum therapeutic device RIKTA-MV has been used in the treatment of 30 sport horses with locomotor system injuries of different locations, severity and duration.

Quantum therapy was used as contact labile irradiation of an affected site. The efficacy of treatment was assessed individually on the basis of clinical signs, with account for long-term results and relapses.

Two therapeutic protocols were used for injuries.

The first employed two regimens. Initial 2-3 procedures were carried out using 64 Hz frequency, 4 W power and 3-5 minute exposure of each affected area. Further treatment sessions used 4 Hz, 16 W and 1-2 minute exposure. The treatments were carried out daily.

The second protocol was pulse repetition frequency, 512 Hz; power, 16 W; exposure 1-3 minutes. In the presence of acute tendinitis, tendovaginitis and contusion, initial therapy was conducted at an 12 hour interval and then one time a day until the end of the course.

When the first protocol of treating acute locomotor disorders was used, alleviation of tenderness, local temperature and lameness were seen on the 3rd or 4th day following the start of therapy. The condition of animals allowed beginning walks within this period and slight training at the 5th-6th day. Horses were allowed moderate exercise at 10 days following the beginning of therapy. A tendovaginitis relapse was seen in one case after serious jumping exercise.

With the second protocol, normalization of the local temperature and lesser tenderness at palpation were seen at 12-18 hours following the first QT treatment session, but tissue swelling and moderate lameness persisted. Clinical signs of acute tendovaginitis resolved after two-three daily treatments and horses were allowed to walk. Training was resumed three days later (at 5-6 days following trauma).

The therapeutic effect was obtained faster when initial three sessions of QT were conducted two times a day. After five treatment sessions horses could take part in Klin Cup three day event (130 cm hurdle jumping. By the time of the contest, these horses had insignificant effusion in tendon sheath areas, and for this reason resorptive compresses were used after the end of QT courses. No recurrences of locomotor diseases were seen within three

months.

The following parameters were used for treatment of subacute diseases of muscles and tendons of 3-4 week duration: frequency, 512 Hz; power 16 W, exposure, 2-3 minutes per area. Horses had moderate lameness, some tenderness and small fluctuating swellings in affected areas before therapy. They had been previously treated with heat procedures and corticotropic drugs.

One horse with subacute tendovaginitis was given 6 treatments at 48 hour intervals. Effusion at a tendon sheath and lameness disappeared by the end of the therapy course. A pea-sized thickening in the tendon area persisted. No recurrences were seen over two years after the QT course. Before treatment using RIKTA-MV, the horse repeatedly required veterinary care for the tendon disease. Two other horses received four QT courses each that were delivered once daily in combination with warming procedures. Tenderness, fluctuation and lameness disappeared after the third treatment session. One treated stud cleared a 120 cm hurdle and ended the competition without penalties.

Two treatment protocols were used in the presence of chronic locomotor diseases. The use of the first was unsuccessful in most of horses. Only one horse with chronic lumbar myositis showed response, which was alleviation of tenderness after five treatment sessions.

Very good clinical results were obtained in three horses with chronic locomotor diseases when the second QT protocol was used. Serous fluid had been removed from bursas and corticosteroids were used in these animals earlier, unsuccessfully. Lameness disappeared after two QT sessions in one case and after three sessions in other two cases, and further therapy was carried out only for consolidating the effect. Four treated horses showed no relapses during four months.

QT treatment of a horse with atrophy of brachial and cruppers muscles caused by contusion was carried out three times at a 12 hour interval, and the fourth and fifth procedures were delivered at 24 hours. Combined with long slow walks, the therapy resulted in lesser lameness and an increase of muscle tone. Lameness during walking was absent at five days following the beginning of therapy and muscle tone and size were similar to those on the contralateral side. Slight lameness remained at the trot. No further therapy was carried out. This horse successfully performed in Russia's three-day event championship one year later.

This treatment protocol has proved useful in horses with periostitis. Ten treatment sessions allowed avoiding the use of strong irritants and side effects related with it.

The second protocol was effective in three horses with chronic bursitis.

All horses with locomotor diseases treated with the RIKTA-MV device recovered.

Thus, RIKTA-MV is an effective means for therapy of horses with locomotor diseases using 512 Hz, 16 W power and 6 minute exposure one

time a day.

A measure of effectiveness of quantum treatment can be white blood cell percentage.

An optimal treatment regimen for maintaining a high working ability is reflected by a proportion of blood cells making 39-44%. It should be 42-46% during quantum therapy of locomotor injuries and decrease to 38-41% later.

The best regimen of QT of the locomotor system of horses is frequency 512 Hz, power 16 W, exposure 6 minutes used once a day.

2.3. Use of RIKTA-MV in therapy of horses with different diseases

(All-Russia Research Institute of Horse Breeding, Ryazan)

Quantum therapy has strong stimulating effects on circulation and cell membrane metabolism, activates hormonal, immune and all self-regulation systems of the organism of the animal.

These diverse effects determine its use for numerous diseases. Treatments for mastitis, endometritis and respiratory diseases have been developed on the basis of the guidelines for use of the quantum device RIKTA-MV.

A retropharyngeal abscess in a two-year-old mare was initially treated conservatively (a dioxidine solution with antibiotics was injected into the cavity) and the laser was used using a scheme of infiltration treatment (five days, 512 Hz frequency, 4 minutes per one treatment). A surgical operation carried out for enhancing the efficacy of treatment (content of the abscess and overgrown connective tissue were removed), after which quantum therapy of the open wound was conducted. The mare recovered after a week-long course of therapy using RIKTA-MV.

RIKTA-MV therapy of laryngeal edema and gumboil was used in combination with drug and vitamin treatment. Exposure was 4 minutes during the treatment of laryngeal edema and 8 minutes for gumboil.

Hypertrophy of withers is an injury of the skin and subcutaneous fat caused by incorrect saddling and producing a high withers. The time of treatment of this condition with RIKTA-MV is 1-4 minutes in combination with emollient antiseptic ointments.

Conclusions

The use of the quantum device RIKTA-MV in therapy of horses with different diseases significantly improves its effectiveness and shortens the recovery time. One of main advantages of this physiotherapeutic method is a possibility of using the device in field conditions. Mobility and simplicity of using the newest devices is very important in daily veterinary practice, as it is difficult to use in animal husbandry methods that take a lot of time and efforts of personnel.

2.4. Effects of quantum therapy using the RIKTA-MV device on reproductive function of studs

(All-Russia Research Institute of Horse Breeding, Ryazan;
Department of Veterinary Medicine of the Russian Agriculture Ministry,
Moscow)

The problem of poor quality of sperm is an acute and permanent problem in horse breeding.

A study of the quantum therapy methodology using RIKTA-MV has been carried out with the goal of evaluating the sperm quality improvement.

Three studs of an experimental stable of the Ryazan Research Institute of Horse Breeding were used in the study conducted from December 2001 to April 2002.

Treatment with RIKTA-MV was applied to locations of testes in the scrotum bilaterally for 1 minute daily during 8-10 sessions using a contact scanning technique and 64 Hz frequency.

After the end of irradiation, sperm was sampled on an artificial vagina during four months, and the quality of sperm was evaluated with consideration for the activity of sex reflexes.

Stud Nartsis showed a long preparation for copulation before the treatment, continuing 10-15 minutes from its being led into the mating ring to ejaculation. The stud made 3-4 unsuccessful mountings during that time. The quality of sperm of Nartsis was normal, motility of sperm cells scored not lower than 4, and their viability was not less than 120 hours.

The stud was engaged the experiment for activation of sex reflexes.

No changes were seen during 5 weeks after quantum treatment. At the 6th week, the stud became more active without any additional treatment. It discharged semen after the second mounting, and the time to effective copulation was 2-3 minutes.

Sperm cell motility improved 10-12 % in that period, from 4.2 to 5.2, and viability remained at a previous level. This improvement was seen during one month.

The stud later got lymphadenitis; it was sluggish at copulation during 3 weeks and the quality of semen decreased to 4. The sex response and the quality of semen gradually returned to pretreatment levels after recovery.

Stud Chutky showed prominent sex reflexes and was very active at copulation - it discharged semen rapidly, during one copulation and took about 1 minute for ejaculation, but the quality of semen was poor - sperm cell motility scored about 1.5 and viability was 48 hours. This stud was taken in the experiment for improvement of the semen quality. Sperm cell motility increased to 2-2.5 or by 13-17 % at 6 weeks following the beginning of the laser treatment of testes. Semen viability did not change. The improvement of sperm cell motility was seen during 3 months.

Stud Garant went into mating very reluctantly before the treatment and had a poor quality of semen: motility scored 1. It made 4-5 useless

mountings and only the 5th or 6th resulted in ejaculation; the stud prepared for every jump for 3-5 minutes. The time from to effective copulation was 15-20 minutes.

Seven sessions of quantum therapy using 512 Hz frequency for 0.5 minute did not produce any effect. Exposure was increased to 1 minute for each testis. On the next day after the prolonged treatment, the stud mounted a mare within 2 minutes. Two more such treatments were carried out. After this course of quantum therapy, Garant discharged semen into a mare and on an artificial vagina within 2-3 minutes. However, sex reflexes of this stud began to lose briskness in 1.5 months, it again reactive to a mare slowly, prepared for copulation for 7-10 minutes and made empty jumps. The semen quality improved in 40-45 days following the start of quantum therapy. Sperm cell motility increased to 2.2, or by 12%, and viability from 24 hours to 72 hours. This improvement lasted for 3 months. The semen quality somewhat deteriorated by the end of the study: motility decreased to 1.5 and viability to 60-48 hours.

It should be stated that all studs took part in the mating campaign in June-July 2002 and all fertilized mares.

Conclusions

The quantum treatment of testes using 512 Hz frequency and 0.5 minute exposure improved potency and the semen quality at 1-1.5 months. The protraction of treatment sessions to 1 minute per each testis with the same frequency sped up activation of sex reflexes.

METHODS OF QUANTUM THERAPY CONTROL

3.1. Computer thermography as a method of control of quantum therapy

Distant infrared computer thermal imaging is a safe and objective method of following up the functional state of the organism (Photo 7).

Photo 7. Distant computer thermography of the horse using IRTIS device

Like the heart rate, arterial rate, arterial blood pressure and the respiratory rate, the body temperature instantly responds to all changes in the state of the organism. Thus the temperature is an integral characteristic of organ and system function.

Computer thermography allows early detection of diseases occurring with blood flow impairment or inflammation, as well as control of the treatment process (Photo 8).

Photo 8. Thermographic picture of leg injury

Modern thermal imaging devices allow registering temperature changes on the surface of the human or animal body with a precision of 0.02 degrees (Photo 9).

Photo 9. Thermographic picture of bursitis

After computer processing, results of the study are presented as a color image and temperature values in some or another area.

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