Institute of Quantum Medicine
ZAO MILTA-PKP GIT
Department of Urology and
Nephrology Surgery
Russian University of Friendship of People

QUANTUM THERAPY OF
NONSPECIFIC INFLAMMATORY
RENAL, URINARY AND GENITAL
TRACT DISEASES IN MEN USING
RIKTA DEVICE

Guidelines for Physicians

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INTRODUCTION

The rate of inflammatory renal and urinary tract diseases is one of the highest in the adult population. Renal and urinary infection is more common in women because of the urogenital tract anatomy. The rate of cystitis is especially high. Its progress is often latent and results in ascending pyelonephritis. Pyelonephritis typically occurs in men at an advanced age in the presence of intravesical obstruction, and has a more severe progress leading to chronic renal failure. Renal and urinary tract infection may coexist with other urinary diseases or occur as a complication of urologic surgery.

Prostatitis has a leading place in the pattern of urinary tract diseases in the past 20-30 years. One of every three men older that 30 has been reported to have prostatitis, often clinically inapparent and causing sexual, copulative and reproductive dysfunctions.

In addition, about 15 percent of men have a history of testicular or epididymal inflammation at a young age. If therapy of acute epididymoorchitis is inadequate, this condition can result in testicular and epididymal dystrophy or sclerosis and infertility.

It is known that about 30 per cent of patients of urology clinics suffer urolithiasis. New prospects have opened with the adoption of shock wave lithotripsy. However, this methodology is fraught with complications like renal colic related to ureteral occlusion by a fragment of a destroyed concretion or with an attack of acute pyelonephritis which may require surgery. Therefore, the high rates of nonspecific inflammatory renal, urinary and genital tract diseases, and their severe clinical progress leading to disability warrant new therapeutic methodologies.
One of these is low-energy quantum therapy using the RIKTA device, an intervention helping to achieve a more rapid and effective restoration of microcirculation, alleviation of inflammatory edema, stimulation of cell-mediated immunity, higher susceptibility of causative organisms to antibacterial drugs and functional recovery of an affected organ.

NONSPECIFIC INFLAMMATORY RENAL, URINARY AND GENITAL TRACT DISEASES IN MEN

Nonspecific inflammatory urinary tract diseases have the second highest rate after upper respiratory tract infections. The rate of infectious-inflammatory conditions in urologic practice is very high (up to 80 percent). They occur as isolated entities (pyelonephritis, cystitis, prostatitis, epididymoorchitis), intercurrent diseases or complications of surgery.

Most of authors conclude that urinary infection and associated urinary tract diseases are most common in women, and their rates are growing.

Pyelonephritis is a severe disease which can result not only in the loss of the vital organ but prove life-threatening. Its severity is confirmed by high rates of urosepsis, bacteremic shock and kidney shrinkage with renal failure. This makes acute pyelonephritis a crucial problem which requires a careful study of ethiopathogenetic mechanisms and improvement of therapeutic interventions using the latest achievements of medicine and technology.

Cystitis is common among women of reproductive age. Infection usually ascends in the urethra. In addition, the high incidence of cystitis in women is related to the urinary tract anatomy: a short urethra, closeness of the vagina and the anus to the external urethral opening, the specific epithelial structure of the vesical triangle, urethra and vagina, and the high incidence of genital tract inflammation. These factors facilitate the spread of the vegetating microscopic flora into one of urogenital tract organs.

Prostatitis has had a dominant place in the pattern of male urinary tract diseases in the past 20-30 years. Statistical evidence suggests that one of every three men aged over 30 years has chronic prostatitis, with clinically inapparent
forms prevailing. Prostatitis often causes sexual and reproductive dysfunctions that are not only a medical but a major social problem.

One of the most common urinary tract diseases in men is acute epididymal inflammation (epididymitis) which occurs alone or in combination with acute orchis inflammation, orchitis. More than 25 percent of men have a history of epididymoorchitis at a young or middle age. Acute epididymoorchitis can progress to chronic and result in testicular sclerosis and dystrophy, impairment of epididymal patency, reproductive dysfunctions and infertility.

Traditional therapies of renal, urinary and genital tract diseases in men do not always satisfy clinicians. Inadequate efficacy of antibacterial drugs is related to prominent edema and functional impairment of the affected organ. This prompts the search for new, state-of-art interventions.

The advent of optical quantum generators (lasers) has opened up a new area of medicine - low-energy quantum therapy. It has fitted well into traditional and homeopathic methodologies, including those used in urologic practice. At present, most of physicians agree that semiconductor pulsed infrared lasers have the best biologic efficacy (8, 10, 16). One of these devices is RIKTA which combines in it infrared laser radiation with 0.8 to 0.9 nm wavelengths, diode-emitted infrared, red and green optic-spectrum light and the static magnetic field with 25 mTl induction. Available studies have shown that this multifactorial quantum therapy has beneficial synergistic effects and activates metabolic processes (3, 16, 18). Quantum therapy is most effective in combination with a range of other interventions, including drug treatment (2, 6, 10). Clinical and morphologic evidence suggests that inflammation is an expectable satellite of proliferative changes; therefore, quantum therapy appears an adequate and pathogenetically relevant intervention for these conditions.

Laser treatment of the inflamed renal, prostatic, bladder, epididymal and testicular tissue causes change in the energy activity of cell membranes, stimulates the nuclear apparatus of the DNA-RNA-protein system, biosynthesis processes, major enzyme systems, redox processes, tissue oxygen saturation and production of high-energy substances (ATP), and enhances the energy potential of cells. Improvement of permeability of vascular wall cell membranes and oxygen saturation is associated with more intensive lymph and blood circulation. The ultimate result is improvement of function of an affected organ (the kidney, prostate and others).

At present, the urolithiasis rate is 3-5 percent and it is tending to increase. Conservative methods of concretion expulsion from the upper urinary tract have a substantial place in the management of urolithiasis. New technical possibilities of distant shock wave lithotripsy have been reported to allow complete stone destruction in 90-95 percent of patients (17, 18).

However, a major problem is evacuation of stone fragments from different segments of the ureter. Sizes of the fragments usually are not larger than than 2-3 cm, but their passage takes weeks or even months. The current methods of the conservative, medical and physiotherapeutic management of concretions or debris are not invariably effective. For this reason, use of quantum therapy with its antiedematous and pain-relieving effects and the ability to increase ureteral wall contractility is appropriate in the management of these patients.
A PATHOGENETIC RATIONALE FOR QUANTUM THERAPY OF MEN WITH INFLAMMATORY RENAL, URINARY AND GENITAL TRACT DISEASES

Experimental studies have been conducted at the urology department of the Moscow University of Friendship of People to examine effects of the RIKTA device on major organisms causing pyelonephritis. Museum Pseudomonas aeruginosa serotype ATCC-27853, Proteus mirabilis serotype C-185, Escherichia coli serotype O-11, Staphylococcus aureus of P-209 series, as well as Escherichia coli and Pseudomonas aeruginosa strains from urine of patients with acute pyelonephritis were used.

RIKTA was found to have moderate bactericidal effects on E. coli, staphylococcus and Proteus cultures. This treatment caused prominent biochemical changes of E. coli and Proteus: the organisms stopped to degrade sugars and urea after irradiation with RIKTA.

A study in rabbits has been carried out to explore effects of quantum therapy on renal inflammation. Acute pyelonephritis was induced by a culture of plasma coagulating Staphylococcus aureus of P-209 series. Ninety animals were divided into controls (n=30), rabbits whose kidney projection areas were irradiated with the RIKTA device without use of its static magnetic field (n=30) and a group treated with RIKTA in combination with 35 mT static magnetic field (n=30). The rabbits were slaughtered and autopsied at 3 days following the onset of acute pyelonephritis and the start of daily quantum treatments.

Histologic examination of renal biopsy specimens at 24 hours following the first external irradiation showed lymphocytes and solitary granulocytes in the intertubular interstitial tissue and in glomeruli. After two treatments, abundant lymphocyte infiltrations were found in the medullary stroma. A significant reduction of lymphocyte infiltration was seen after the fourth treatment, and the formation of a granulation wall around the inflammatory site and its subsequent replacement by a tender scar tissue after 5-8 treatments. Initial laboratory tests revealed leukocytes, erythrocytes and bacteria in urine, but their counts significantly decreased after the third treatment and returned to normal after 5-6 treatments.

Pretreatment blood tests showed abnormally low hemoglobin and hematocrit levels and excess leukocyte counts, but these values normalized by the end of quantum therapy. Untreated animals displayed a progressive decline in hemoglobin and hematocrit, an increase in leukocyte counts and prominent bacteriuria and leukocyturia. All of the controls died at 7-8 days following the infection onset; their kidneys and other organs showed purulent destructive lesions that were interpreted as morphologic evidence of sepsis.

Evaluation of microbial susceptibility to antibacterial drugs showed that 46.7 percent of 612 strains of Escherichia coli isolated from rabbits with acute pyelonephritis were resistant before treatment using the RIKTA device; therapy reduced the resistance rate to 15.5 percent. Susceptibility of 450 Proteus strains to antibacterials increased from pre-treatment 49.8 percent to 81.8 percent. RIKTA therapy decreased resistance of 324 Pseudomonas strains from 51.8 to 18.5 percent.

Experimental evidence of effects of the RIKTA device on renal inflammation indicated that this therapy influences primarily the immune system, which was seen as the lymphocyte infiltration response to kidney infection. Therapy improved erythrocyte transport function, with resultant intensification of redox processes at the inflammatory...
A PATHOGENETIC RATIONALE FOR QUANTUM THERAPY OF UROLITHIASIS

One of major clinical events in urolithiasis is renal colic caused by an occlusion of the ureter by a concretion. Because of continuing glomerular filtration, pelvic intratubular pressure rises and effectiveness of filtration pressure declines. Nevertheless, the filtration process is retained due to changes in renal hemodynamics (afferent arteriole dilation produced by a higher rate of prostaglandin E2 release by the kidney causing an increase in the renal blood flow and in hydrostatic pressure) (12, 14). The pressure growth is related to diuresis and elasticity of walls of the calyceal-pelvic system. Pelvic pressure begins to decrease at 4-5 hours following obstruction and returns to initial values at 24 hours. This occurs because of a lower glomerular filtration, a higher tubular fluid reabsorption and distention of the pelvis and the ureter above an occluded site (12, 14). The decline in glomerular filtration in this period is related to a renal blood flow decrease resulting from constriction of afferent arterioles. Mechanisms of these disorders remain inadequately elucidated, but it is plausible that they are produced by renal hemodynamic abnormalities and secondary ischemic events. Impairment of glomerular filtration and reabsorption in the presence of an acute ureteral obstruction is reversible within initial 24-36 hours, but renal function declines if the occlusion persists longer. Explanations are a decrease in numbers of functional nephrons, persistent tubular reabsorption defects, change in sensitivity to hormonal regulators of electrolyte homeostasis and other factors (1, 3, 4, 17, 18). An upper urinary tract occlusion lasting for more than 1-2 weeks is associated with nephron destruction and progressive atrophy of the renal parenchyma because of prolonged blood flow flow impairment.
Functional renal disorders occur earlier than changes in the ureteral wall. As urine accumulates in the ureter above a stone occlusion site during an increase in ureteral pressure, the ureter opening does not fully close as it constricts. Therefore, ureteral pressure which builds up during constriction is transferred to the renal pelvis, affecting the kidney structure and function. This suggests that the closer to the kidney the occlusion is the faster the onset of a decompensatory, obstructive mechanism and of functional and structural damage of the kidney. The contractile activity of the ureter early in occlusion increases with the frequency and strength of each contraction and with wider dilation of the upper urinary tract. Contractions gradually decrease, and the ureter becomes atonic after its excessively fast distention.

Therefore, an acute ureteral occlusion by a concretion produces physiologic dysfunctions of not only the ureter: renal function is affected more, and its disorders rapidly progress and may become irreversible. The response of the kidney and the upper urinary tract at an early phase of occlusion is compensatory and is aimed at injury minimization and concretion elimination. The response is transient and seen within initial hours of occlusion when glomerular filtration is impaired but sufficient. Pressure growth in the urinary tract above an occluded site and an increase in the upper urinary tract contractility occur at this phase, forcing the stone to move along the ureter.

If the occlusion does not resolve, renal secretory function, pelvic and ureteral contractility are affected, and pelvic and ureteral pressure drops above the occluded site. Further on, the renal blood flow significantly decreases and the likelihood of renal inflammation and subsequent dystrophy increases. The upper urinary tract loses contractile function and the ability to participate in reversal of the occlusion.

With regard for these processes in the kidney and the upper urinary tract, where there is a stone occlusion or a scratch lesion left by lithotripsy, therapy that could prolong the compensation phase or avert decompensation events should be conducted. Proceeding from the known antiedematous and spasmytotonic actions of low-energy quantum therapy and its ability to improve smooth muscle microcirculation and contractility, we have evaluated effects of the RIKTA device on the contractile function of the wall of isolated segments of dog ureters. The study showed that 1,000 Hz frequency was most effective in increasing ureteral myofibril contractility.

A study of quantum therapy effects on renal tissue in experimental colic has demonstrated a prominent antiedematous effect and a significant alleviation of destructive changes in tubular epithelial cells. A similar response occurred in the contralateral kidneys, suggesting a generalized effect of the RIKTA device on the organism.

Evaluation of ultramicrostructural events in the kidney parenchyma of animals with experimental renal colic has shown beneficial effects of the RIKTA device on the disease process in cortical cells. These were seen as milder intracellular swelling, smaller numbers of "secondary" lysosomes and retention of an intact mitochondrial matrix.

In summary, experimental evidence indicates positive effects of quantum therapy using the RIKTA device on both an organ and the whole body: stabilization of cell membranes and intracellular structures, an increase in ureteral contractility, antiinflammatory effects and appreciable improvement of renal parenchymal microcirculation. This suggests that use
of the RIKTA device is a pathogenetically appropriate addition to the management of patients with nonspecific inflammatory kidney and urinary tract diseases and urolithiasis.

EFFECTS OF RIKTA DEVICE ON IMMUNITY OF PATIENTS WITH ACUTE PYELONEPHRITIS

Evaluation of the immune status of patients with acute pyelonephritis is one of prerequisites for adequate pathogenetic therapy.

Immunity of 142 patients with acute pyelonephritis was examined using a methodology of the Moscow Institute of Immunology which included lymphocyte, leukocyte, T and B cell, T and B helper and suppressor cell counts, serum immunoglobulin A, M and G levels and the neutrophil phagocytic activity. Patients with acute primary pyelonephritis without urodynamic disorders showed impairment of mostly cell-mediated immunity. Thus low levels of IgA were seen in 6 of 60 patients (10 per cent), of IgG in 12 (20 percent) and of both immunoglobulins in 12 patients (20 percent). An excess phagocytic activity of neutrophils was found in 28 patients (46.7 percent). The immunoregulation index (T helper to T suppressor ratio) was above normal in 14 patients (23.3 percent).

The abnormalities were more prominent in patients with acute purulent destructive pyelonephritis who showed a depression of both cell-mediated and systemic immunity.

Deficient T helper and T suppressor counts were seen in 76 of 82 (92.7 percent) patients with acute complicated pyelonephritis, and the immunoregulation index was two times above normal in 52 (63.4 percent).

The lower efficacy of antibacterial treatment of patients with acute pyelonephritis and its immunodepressive effect warrant immunomodulating therapy of this group.

Follow-up evaluation of effects of external kidney irradiation with the RIKTA device on cell-mediated and systemic immunity of patients with acute pyelonephritis has
shown a prominent immunomodulating action of it. Cellular and systemic immunity tests and the immunoregulation index were normal after therapy. T and B lymphocyte counts increased to 83 and 19.6 percent respectively. The neutrophil phagocytosis activity rose from 63 to 83 percent. A marked increase was seen in serum levels of IgA and IgG whose classes include antimicrobial antibodies; IgM levels remained unchanged.

This evidence suggests that therapy using the RIKTA device is a pathogenetically relevant intervention for acute pyelonephritis, especially in the presence of purulent destructive complications and urinary sepsis associated with prominent depression of cell-mediated and systemic immunity. This quantum therapeutic modality has strong immunomodulating effects and restores adequate immunity to microbial aggression, a essential factor in the management of these patients.

MECHANISMS OF QUANTUM THERAPY OF PATIENTS WITH ACUTE PYELONEPHRITIS

To examine mechanisms of RIKTA therapy and patient eligibility for it, we have studied major constituents of homeostasis before and during therapy. Urinary urea and creatinine levels were followed up in 242 patients with acute pyelonephritis. These values were excessive in patients with acute purulent pyelonephritis, an expectable event in the presence of purulent intoxication. Quantum therapy returned serum urea and creatinine levels to normal after 4-6 procedures, to a mean 23 percent. The prominent detoxicating effect of quantum therapy was related to significant improvement of microcirculation in the inflammation-affected parenchyma.

It should be stated that acute pyelonephritis, especially its purulent form, coexists with disorders of blood rheology presenting as a significant increase in platelet and erythrocyte aggregation, lower erythrocyte osmotic resistance and higher blood viscosity. Therapy using the RIKTA device decreased erythrocyte aggregation from 33.8 to 21.3 percent and fibrinogen levels from 921.1 mg% to 408.7 mg%. The rate of these changes was 2.5-fold lower in acute pyelonephritis patients whose management did not include quantum therapy.

Apart from blood rheology, findings of radioisotope renography showed improvement of renal function presenting as reduction of summary clearance deficiency from 29.6 percent to 9.7 percent. Hormonal homeostasis evaluation in the patients with acute pyelonephritis revealed compensatory adrenal overfunction (levels of aldosterone were increased to 159.5 ng/ml, of
cortisol to 239 nmol/l, of adrenaline to 0.11 ng/ml and
of noreadrenaline to 1.29 ng/l).
Results of RIKTA therapy of 242 patients with acute
pyelonephritis were good in 94.7 percent and satisfactory in
5.3 percent. Use of the RIKTA device at early stages of acute
pyelonephritis allowed modifying the later management of
the patients. Laser therapy combining external kidney
irradiation with the RIKTA device, supravenuous
transcutaneous helium-neon laser irradiation and
conventional drug treatment averted renal surgery in 11
patients with acute purulent pyelonephritis and intoxication
(aposthematos pyelonephritis and kidney carbuncles).
Organ-sparing operations (decapsulation, pyelonephrostomy)
were carried out in 65 patients with purulent destructive renal
lesions instead of resection.
Above presented evidence suggests indications for quantum
therapy: external quantum therapy benefits all patients with
acute pyelonephritis by stimulating parenchymal
microcirculation; helium-neon laser treatment is appropriate
in the presence of cell-mediated and systemic immunity
deficiency; combined laser therapy is helpful in purulent
septic diseases with severe intoxication.

QUANTUM THERAPY IN UROLOGY: GENERAL

Multifactorial quantum therapy of kidney, urinary tract and
genital diseases in men using the RIKTA device always
proves useful. Treatment of the inflammatory site improves
microcirculation and erythrocyte transport function, and
palliates edema, resulting in a faster inflammation reversal.
Drug therapy should be added to RIKTA treatment, as laser
therapy prolongs and potentiates effects of drugs. It is
recommendable to prescribe ascorbic acid, 0.3 g a day,
antioxidant multivitamins like Aevit and Decamavit, one
capsule two times a day after meals, and diuretic herbs that
help avert relapses of the primary disease.
A typical quantum therapy regimen includes five to ten
procedures, 5 minutes each. Two treatment sessions a day
may be delivered in especially severe cases of acute
inflammation (in the morning and in the evening). Drug
treatment should be built up during RIKTA therapy of a chronic
disease exacerbation. Pretreatment clinical and laboratory
findings are followed up in the middle of the regimen and
after it.
If necessary, the second regimen may be prescribed, on
rigorous indications, in a month after the first treatment and
the third in three months after the end of the second treatment.
Eight to ten sessions of quantum treatment of chronic renal
and urogenital tract diseases should be carried out twice a
year (in spring and autumn) to prevent their recurrences.
SPECIAL QUANTUM THERAPEUTIC METHODOLOGIES USING RIKTA DEVICE

All special methodologies rely on pulsed laser radiation with a wavelength of 0.89 ± 0.04 mc, pulse power of 5-7 W and pulse duration of 70 to 150 ns.

Acute pyelonephritis

Before starting therapy of acute pyelonephritis using the RIKTA device it should be ascertained that upper urinary tract urine passage is unobstructed. If obstruction occurs, it should be abolished by catheterization of the renal pelvis and the ureter, stent implantation or surgically, by pyelonephrostomy.

Antibacterial therapy of acute pyelonephritis is guided by findings of microbial susceptibility tests and carried out concomitantly with fluid and detoxication therapy with mandatory inclusion of angioprotectors. Therapy using the RIKTA device may be started after the patient’s hospital admission and evaluation.

The treatment is delivered to a patient lying on the unaffected side with a bolster under his or her waist.

The device’s emitter is placed on kidney projections and applied in anterior or posterior axillary lines sequentially and, if the device has two emitters, simultaneously. Exposure of each area is not less than 5 minutes. The 50 Hz frequency is used at the first treatment session and 1 kHz at the second. Our studies have demonstrated analgesic effects of the RIKTA device in 92 percent and neuroleptic effects in 87.5 percent of patients.

The number of treatments is individualized depending on the degree of inflammation reversal. Criteria for therapy completion are normalisation of the clinical condition, urinary and blood biochemical tests, the absence of bacteriuria and normal findings of renal ultrasound examination (a lack of pelvic-calyceal dilation, parenchymal edema, etc.).

Chronic pyelonephritis

This most common disease simulates other conditions and results in chronic renal failure. Three clinical phases of chronic pyelonephritis are

- active inflammation (exacerbation of chronic pyelonephritis);
- latent inflammation;
- remission.

Diagnosis of chronic pyelonephritis is based on the history, clinical and laboratory findings. Characteristic symptoms of the active inflammation phase are severe lower back pain, febrility, the onset of bacteriuria, abnormal blood and urinary tests and deterioration of the general condition. Therapy in fact does not differ from that of acute pyelonephritis and includes antibiotics, seven-ten days each, diuretic herbal teas and antioxidants.

It should be remembered that latent-phase chronic pyelonephritis can transiently deteriorate after three-four sessions of RIKTA treatment. This requires addition of antibacterial drugs, plant diuretics and uroseptics to therapy.

The therapy regimen is similar to that for acute pyelonephritis: two-three 50 Hz treatments and subsequent five-eight treatment sessions using 1 kHz frequency.

Exposure is not less than 5 minutes. The number of sessions is at least ten (usually 12-15). Criteria for therapy completion are results of clinical examination, laboratory and special tests. A repeat regimen may be conducted in a month after initial treatment and the third in three months after the second.
Acute and chronic cystitis

Acute cystitis is common in clinical practice, especially in women. Diagnosis of it is usually easy. Therapy consists of antibacterial drugs and exclusion of spicy and irritant foods from the diet. Addition of the RIKTA device to the early management of acute cystitis yields a prominent effect. The emitter is placed over the pubic area. The pulse frequency is 50 Hz, the number of treatments at least five, and exposure 5 minutes. Micturition usually returns to normal and dysuria resolves after two-three treatment sessions. If acute cystitis coexists with a genital tract inflammatory disease, urinary bladder and adnexal projections are sequentially irradiated at the same frequencies, or a vaginal mount is used to treat the bladder projection. Exposure of each area is not less than 5 minutes and the number of treatment procedures is at least seven.

Chronic cystitis requires a longer therapy which should be complete with conventional antibacterial drugs and bladder instillations of antiseptics (silver drugs, dibunol, synthomycin emulsion etc.). The emitter is placed on the suprapubic projection of the urinary bladder. Exposure is 5 minutes; frequencies of 50 Hz to 1 kHz are used. A total of ten procedures are delivered. In some cases, this regimen may be repeated without using other modes of therapy in 10 days. Its efficacy is assessed by the patient's clinical condition and laboratory tests.

Acute nonspecific epididymitis, orchitis and funiculitis

Acute epididymoorchitis is most commonly seen in young men, usually as a complication of acute prostatitis or urethritis. Severe epididymoorchitis affects funicles and groin lymph nodes, with the onset of funiculitis and inguinal lymphadenitis. Therapy includes use of a suspensory, bed rest and broad-spectrum antibiotics. Quantum therapy may be started at hospital admission or after the patient's seeking medical care. In acute epididymoorchitis, the affected testicle or epididymis is irradiated at 50 Hz or 1 kHz for 5 minutes. Later, the funicle and inguinal lymph nodes are treated using the same regimen. The number of sessions is at least five.

Acute and chronic prostatitis

Prostatitis is most common in years of sexual activity. It is concurrent with inflammation of seminal vesicles and the posterior urethra. Acute prostatitis is caused by the pyogenic flora invading the prostate from blood or in an ascending way from the posterior urethra. The RIKTA device is used in the management of all three morphologic forms of prostatitis - catarrhal, follicular and parenchymatous - from the day of the patient's seeking medical care. Early use of quantum therapy allows avoiding an abscess. The perineum and the suprapubic area may be irradiated by gradually building up frequencies from 50 Hz to 1,000 Hz and exposures from 5 to 10 minutes.

One RIKTA emitter may be placed over the pubis and the other transrectally using a rectal mount; the above frequencies and exposures are used. Quantum therapy is conducted simultaneously with broad-spectrum antibacterial, detoxication and antioxidant therapy. Guides for therapy completion are improvement of the patient's general condition, normal laboratory tests, findings of rectal palpation and transrectal examination of the prostate. In the presence
of severe acute prostatitis, the number of treatment sessions may be increased to 15. Therapy of chronic prostatitis is combined with traditional interventions. Pretreatment examination should include a prostatic secretion test and a secretion culture for isolation of the microflora and susceptibility tests. The RIKTA therapy methodology is the same as in acute prostatitis. The irradiation regimen is chosen according to inflammation activity. During inactive inflammation, the frequency is 50 Hz and exposure 5-10 minutes; in the presence of active inflammation, the frequency is increased from 50 Hz to 1 kHz and the treatment duration to 10 minutes. The regimen includes 10-15 treatments (the number is individualized). In the latent inflammation phase, frequencies of 50 Hz to 1 kHz and 10-minute exposure are used. A total of 8 to 10 daily treatments are delivered. Latent inflammation requires preventive quantum therapy regimens in autumn and spring.

Urolithiasis

Quantum therapy of patients with renal colic is most effective in combination with traditional treatments. This methodology hastens the reversal of the colic and extends intervals between attacks. Such therapy often eliminates concretions without pain. Renal colic is treated by RIKTA scanning of ureter projections below the stone location, in the stone projection or the kidney projection. Each area is treated for 5 minutes using 1 kHz frequency. Treatments are given daily.

Urolithiasis and "stone path" after distant lithotripsy

The broad clinical adoption of renal and ureteral distant lithotripsy has brought out the problem of preventing an ureteral occlusion by small fragments of a destroyed stone and related complications. Therapy of these patients proposed by us combines conventional spasmyotics, uroseptics, herbal diuretics and terpene drugs with the scanning mode of quantum therapy of at least three areas: the ureter projection below the "stone path", the "stone path" projection and two-field irradiation of the affected kidney projection. Each area is treated for 5-10 minutes with 1 kHz pulses. Treatments are continued until "stone path" expulsion from the urinary tract.

Postoperative quantum therapy in urology

To stimulate repair processes and prevent postoperative wound suppuration, therapy using the RIKTA device is delivered by scanning at 50 Hz or 1 kHz for 5 minutes without removing the dressing or clearing the wound of ointments. The number of treatments is 8-12.
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