

MEDICINE AND PHYSICAL CULTURE IN EDUCATION

URINARY SYSTEM TUBERCULOSIS IN SAMARA REGION

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Key words: tuberculosis, urinary system, complications, stomach and bowels problems.

The article contains statistic analysis of 350 patients records treated for urinary system tuberculosis in Samara TB Hospital from 2002 till 2006. Several clinical patterns of urinary system tuberculosis treatment have been worked out, information on average age of patients and average disease span has been collected. The results show that indexes of urograms and hemograms dont let diagnose urinary system tuberculosis. Creating specialised extrapulmonary tuberculosis treatment centre is a key point in terms of nephrotuberculosis diagnostics.

Tuberculosis is a global problem nowadays. Extrapulmonary tuberculosis is a challenge in physiology in Russia. According to A.E. Garbuz not enough attention is paid to the problems of extrapulmonary tuberculosis in our country. Almost half of the patients (43,8 -53,1) suffering urogenital system tuberculosis have some destructive alloeoisis (F.A. Batyrov, V.A. Chomenko, L.N.Shmakova). E.M. Parmon highlights the issue of nephrotuberculosis pathomorphism. 10 -15 years ago micobacteria were found with 75-84% patients suffering urinary system tuberculosis. The index decreased at 44% by 2001(E.V. Kulchavenya). Difficulties with diagnostics, unawareness in pathologic factors, tardy diagnostics - all these cause actuality of extrapulmonary tuberculosis issue.

The survey was carried out on the basis of information provided by Samara TB Hospital №1 with its 350 patients' anamnesis. Women made 202 and men made 148 cases. The age category varied from 25 to 71- year-olds.

The standards for examination of urological patients were implied, liver functioning ability was studied, all treated had electrocardiography and had their lungs X-rayed. Not all the patients had Creatinine tests so this index was not taken into consideration in the research. All the 350 patients were examined by neuropathist, ophthalmologist and E.N.T. Specialist. The amount of mycobacteria in urine was checked via bacterioscopic and bacteriologic methods. All the patients had excretive nephrography. The researchers analysed main disease complica-

tions, coexistent diseases of tuberculosis and non-tuberculosis aetiology, surgical procedures.

The statistic analysis was carried on with following statistic methods:

1. basic statistic characteristic computation
2. correlation analysis
3. calculation for Pearson correlation and cheking its statistical significance
4. regression analysis
5. checking statistical hypotheses.

The basic symptoms of urine system tuberculosis are general discomfort, body temperature increase, arterial hypertension. From 350 individuals 75 (21,46%) suffered arterial hypertension. 95 people complained about general discomfort (27,12%), 34 patients (9,71%) ran subfebrile temperature.

Urine system tuberculosis signs are divided into subjective (pain and urinary discomfort) and subjective ones (urine deviation).

101 (28,83%) patients had dull aches in the kidneys area. Frequent painful urination was a problem for 77 (22,0%). 64 (18,27) people had physical symptoms, 140 (40,0%) suffered erythrocytura. Mycobacteria in urine tests was founded with 146 patients (41,71%).

1 patient (0,28%) had paranephric apostem, his body temperature level reached 40C, he had fever, weakness, headaches, strong aches in the lumbar region.

Inveterate nephrism (IN - that is an irreversible disfunction of kidneys' function) was registered with 72 (20,55%). To diagnose IN

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it was necessary to state the fact of inveterate urine system tuberculosis. 72 patients had IN of renal aetiology, none had postrenal aetiology (blocking urinary system). Everyone had neurologic symptoms such as confused consciousness and drowsiness. All had blood hypertension, systolic maximum made 240 mm mc, diastolic maximum index made 130 mm mc.

All patients suffered gastroenteric disorders (anorexia, nausea) and metabolic disorders (fatigue, sleeping problems).

1 patient (1,38%) had anaemia, all patients had cardiovascular and nervomuscular disorders (emotional lability), 5 (6,94%) patients had gastroenteric disorders (ulcer, colitis, hepatitis). 1 patient (1,38%) had kidney osteodystrophy.

35 people (10,0%) had typical pyelonephritis as a coexistent disease. Their body temperature got to 38C, they had rigor, weakness, apathy, drowsiness, dull aches in kidneys area, headaches, burning while urinating, etc.

20 sick (5,74%) suffered urinary bladder tuberculosis, they had steady dull aches in pubic region (they increased while urinating), painful urinating.

2 patients (0,57%) had renal duct constriction.

2 patients (0,57%) had postprimary lithiasis resulted in renal colics.

1 patient (1,38%) had urosepsis. His condition was stated as a grave one, he suffered from adynamia, tough rigor, vomit, his skin was

1 patient (1,38%) had shoulder-joint affect of tuberculosis aetiology as a concomitant disease.

2 patients (0,57%) had brain fever of tuberculosis aetiology as a concomitant disease.

22 (6,28) patients had diabetis as a coexistence disease.

8 people were alcoholics, one 50-year-old man was both drugaddict and alcoholic.

Table 1 shows average anamnestic indexes for people suffering from nephrotuberculosis.

According to the table, patients' average age was 59,97+ 14,70. Average disease span was 9,14 + 8,39 years.

Table 2 demonstrates average laboratory indexes for people suffering from nephrotuberculosis.

Table 2 shows laboratory indexes with hemograms, urograms.

10 -15 years ago mycobacteria was found in the tests of 75-84% of people with nephrotuberculosis. By 2001 this index went down at 44%. Our research shows that 146 patients (41,71%) had mycobacteria in urine tests. Elimination of bacilli percentage coincides with the percentage performed by E.V. Kulchavenya.

The majority of the patients (35-60%) had problems related with late diagnostics. Kidney tuberculosis is a smoldering disease which symptoms are like the ones of recidivating pyelonephritis. Patients are treated by theurapeusts,

Table 1

Indexes	$\bar{X} \pm \sigma$
Age	53,97±14,70
Disease span, in years	9,14±8,39

icteritous, had sponginess of cnemis, hepatomegally, blood pressure index was 90/60, pulse was 130 beats a minute. The body temperature got up to 38C and more.

2 patients (0,57%) had postprimary kidney amyloidosis. They suffered from weakness, headaches, swells.

294 people (84,25%) had no coexistent diseases of tuberculosis aetiology.

41 persons (11,76%) had various types of tuberculosis at an infiltration stage as coexistent diseases.

10 patients (2,8%) suffered from coexistent spondylitis.

2 patients (0,57%) had elbow-joint affect of tuberculosis aetiology as a concomitant disease.

neurologists and urologists without any tuberculosis tests. According to the research only 18,1% of the sick had their diagnosis a year after they had had it. All the rest cases were diagnosed in 2-5 or 6-10 years after the clinical implication of the disease (R.K. Yagfarova, G.A. Kurashkin, A.V. Byspen, O.N. Zuban).

E.V. Kulchavenya provides the following clinical and laboratory characteristics of patients with urine system tuberculosis: dysiric presentation (57,1%), kidney area aches (58,9%), erythruria (30,4%), kidney colics (16,1%). Our data is the following : dysiric presentation - 77 patients (22,0%), renal aches - 101 patients (28,83%), erythruria - 140 (40%). 35(10%) patients had typical pyelonephritis as a con-

Table 2

Indexes	$\bar{X} \pm \sigma$
General analysis - specific density	1,012,99±5,62
General analysis - protide	0,04±0,13
General analysis - erythrocyte	6,13±17,10
General analysis- leucocyte	8,66±22,70
Nechiporenko urine test - leucocyte 10^6 /л	9,56±24,54
Nechiporenko urine test - erythrocyte $\cdot 10^6$ /л	3,59±15,46
Zimnitsky urine test -day diuresis, ml	956,62±333,78
Zimnitsky urine test - night diuresis, ml	625,47±223,05
Zimnitsky urine test - specific density	1,008,29±4,43
General blood analysis -Hb, g/l	125,42±19,16
General blood analysis - erythrocyte $\cdot 10^{12}$ /l	4,77±16,74
General blood analysis - COЭ, m/c	15,82±13,04
General blood analysis - leucocyte $\cdot 10^9$ /l	6,04±2,39
General blood analysis - палочкоядерные leucocyte, %	3,88±3,37
General blood analysis - сегментоядерные leucocyte, %	64,36±3,58
General blood analysis - monocyte, %	3,28±1,85
General blood analysis - eosinophyle, %	1,92±1,64
General blood analysis -lymphocyte, %	26,42±5,24
Blood biochemistry -bilirubin, mkm/l	9,52±5,15
Blood biochemistry -thymol test, ЕД	1,30±0,98
Blood biochemistry - sublymathe test, мл	1,92±0,64
Blood biochemistry - ALT, mkm/l	0,91±0,76
Blood biochemistry -BUN mm/l	8,03±6,69
Blood biochemistry- glucose mm/l	4,31±0,72

comitant disease. 146 (41,71%) had mycobacteria in the tests. 2 patients (0,57%) had postprimary lithiasis with renal colics. This data differs from the one by E.V. Kulchavenya.

20 patients (5,74) had urinary bladder tuberculosis.

72 (20,55%) had inveterate nephriзм as a complication disease.

Thus, some pieces of information coincide with the ones from other medical sources, others do not.

Extrapulmonary tuberculosis specific density in developed countries varies from j (Australia, Switzerland, Germany) to 1/3 (USA) and S (Canada). In the Russian Federation in the frameworks of total number of people affected it makes 6,2% and 12,1% correspondingly.

Recently the number of people with polyorganic types has increased.

According to A.E. Garbuz total amount of people infected in Russia makes 100 -150 thousand. The increase of specific density of the number of extrapulmonary tuberculosis patients who suffer from other organs' simultaneous affect testifies the amiss of extrapulmonary tuberculosis diagnosis. The amiss is explained with the common difficulty in diagnosing this type of tuberculosis. In Saint-Petersburg Institute of

Phtisiopulmonology different types of diagnostics are used. Among them are serological methods, excretive urography, static and dynamic renal scanning, radioisotropic renography (R.K. Yagfarova, E.I. Potapenko, R.I. Shenderova, O.A. Yakunova, O.L. Korolenok, M.O. Kusursus, E.A. Sushkova). The research proved that 72 (20,55%) patients had inveterate nephriзм as a complication. All patients had neurologic symptoms. Gastroenteric disorders and metabolic ones were typical for all the patients as well.

1 individual had hematologic complications. Also 1 had renal osteodystrophy.

The analysis of the results achieved let us make a conclusion that a professional clinic possessing skilled professional specialists, modern diacrisis equipment is a crucial need for Samara region nowadays.

Let us consider a clinical case of extrapulmonary tuberculosis anamnesis to illustrate the need for the centre.

V.M.N., 71 years old (was born on September 18, 1931) got a patient in the Samara TB Hospital on July 21, 2003 (patient record №578), Russian, retired, invalid group 2.

Diagnosis of the polyclinic: urine system tuberculosis VA, MBT (+), VN (BUN - 26,4 mM/l).

Anamnesis: Has been suffering from coral calculus since 1964. Had an operation on the left kidney in 1975. In May 2003 mycobacteria were found in her urine test so she got to the hospital.

Biography: She was born in the countryside, in Samara region. Had normal life conditions. Finished school.

Sickness record : has been suffering from urolithiasis since 1964. In 1975 had coral calculus removed from her left kidney. Had appendectomy in 1954.

The results of the extrinsic examination: Satisfactory condition, clear consciousness, active. A lot of pigment stains on the skin. No osteoarticular pathology. Visible mucus membrane is pale, light pink. Peripheral lymphatic lumps cant be identified.

Nervous and respiratory systems have no pathology.

Circulation organs: no heart pathology diagnosed. Cardial dullness limits are right on the right edge of the brisket and on the bottom edge of the third rib on the top side. Heart tones are rhythmical, dull. Pulse is 70/min, tough with the right rhythm. Blood pressure is 210/120.

Digestive apparatus: The tongue is wet, with a light white accretion. Liver doesnt stand out from the costal arch edge. Urination is painless. Kidney cant be identified while palpating.

Additional data: Amyctic indexation in blood tests. BUN amount is high - 16,5 mm/l. Leucocytes made 5-7, erythrocyte - 1-3, epithelial cells - 1 -2, urine is cloudy.

Urine seeding from August 22 2003. Tuberculosis mycobacteria more than 20 colonies.

Panoramic X-ray and excretive urograms from August 6, 2003: kidneys are bigger than the norm, the right one is descent, disfunction of the left kidney, renal duct is ectetic. Urinary bladder is of a feminine type, with even edges.

Embedding: coral calculus in both kidneys with the left kidney disfunction and right kidney misfunction. Inveterate pyelonephritis in decompensated stage. Postprimary anaemia.

Treatment was aimed at decreasing BUN in blood. Tuberculosis treatment was to be carried out after uine seeding result.

The patient left the hospital willfully on August 22, 2003, rejecting chemotherapy.

The last urine test result was 18,6 mm/l, on August 18, 2003.

Her further treatment was in the city TB dispensary №2. The patient was treated in TB sanatorium "Lesnoe" in 2004. At the beginning of 2005 in the city TB dispensary №2 MBT+ were found in urine seeding tests and the patient was sent to Nephrologic Department of City TB Hospital №1.

The results of the extrinsic examination: critical condition, adynamic, conscious. Skin and visible mucus membrane are pale, skin is dry. The smell of BUN can be felt from her mouth. A lot of melanomalike elaborations. Peripheral lymphatic lumps cant be identified.

Circulation organs: Cardial dullness limits are right on the right edge of the brisket and on the bottom edge of the third rib on the top side. Heart tones are rhythmical, dull. Pulse is 70/min, tough with the right rhythm. Blood pressure is 210/120.

Digestive apparatus: The tongue is wet, with a light white accretion.

Urine system organs: Painless urination. R-graphy thoracic cage pril 19, 2005: in the top part on the right there is a balllike focus size 3,0 - 3,5 cm.

Embedding: infiltrative tuberculosis of the upper part of the right lung. Urine system tuberculosis. Anaemia.

Treatment prescribed.

Again the patient left the hospital on August 4, 2005.

On 23 May, 2006 the patient V.M.N., 71 years old (was born on September 18, 1931) got a patient in the Samara TB Hospital on July 21, 2003 (patient record №578), Russian, retired, invalid group 2. Diagnosis of the polyclinic: cavernous tuberculosis of the right kidney.

Complaints of the patient: total weakness.

Circulation organs: heart with no pathology, cardial dullness rhythms are in norm, heart tones are dull, heart rhythm is typical, pulse is 78, blood pressure is 145/80.

Urine system organs: renal area is with no pathology, Pasternatsky symptom is positive on the right side (+).

Urogram from June 6, 2006.

Clinical diagnosis:

a) general: urine system tuberculosis, kidneys cavernous tuberculosis 2A. MBT (+);

b) concomitant diagnosis: inveterate kidney failure; urolithiasis;

c) complications: local top lungs parts tuberculosis.

A therapeutic course was carried out.

The last application of V.M.N., 71 years old (was born on September 18, 1931) Russian, retired, invalid group 2 was in March 5, 2007 (patient record №199/16).

Complaints about total weakness, the patient is adynamic, is hardly able to reply to the questions.

The results of the extrinsic examination: grave condition, clear consciousness, but slow reactions, respiratory embarrasment, hemorrhagic spots all over the body.

Respiratory system: with lungs auscultation harsh respiration was observed.

Circulation organs: cardial dullness rhythms are in norm, heart tones are dull, heart rhythm is typical, pulse is 100, blood pressure is 100/60.

Digestive apparatus: The tongue is dry, with dark black accretion.

Urine system organs: Pasternatsky symptom is negative.

Diagnosis: Urine system tuberculosis, nephrosclerosis. Aesotemic uraemia. Hypostatic pneumonia. Postprimary aenemia.

The treatment didnt lead to recovery. On March 7, 2007 the patient died of asystolia of heart.

Paragnosis:

a) general: urine system tuberculosis, kidneys cavernous tuberculosis

b) concomitant diagnosis: inverterate ineptitude of brain deferents, cerebro sclerosis.

Embedding: since 33 the patient had been suffering from inverterate pyelonephritis and

nephriism. In 1975 had an operation on kidneys. Urine system tuberculosis was diagnosed too late (in May 2003). The patient had a polyorganic pathology.

Such patients should be treated by doctors of different profiles.

Thorough monitoring for each case of inverterate pyelonephritis and other urine system pathologies should be provided.

Nowadays there is no such a well-equipped extrapulmonary tuberculosis clinic in Samara region. This fact keeps under the possibility of brief diagnostics, adequate estimation of implying the means of extrapulmonary tuberculosis treatment. So, our research makes evident the necessity for such a hospital in Samara region.

Our conclusions are the following:

Patients average age is 59,97+ 14,70;

Average disease span is 9,14 + 8,39 years;

Average indexes of urograms and hemo grams dont allow to diagnose nephrotuberculosis on time;

An average disease span is 9,14 + 8,39 years

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