

COMBINATION THERAPY OF TROPHIC ULCERS

M. A. Dudchenko, B. F. Lysenko, A. L. Chelishvili

Ukrainian medical stomatological academy, 1st GKB, Poltava.

A. V. Katlinskiy

Sechenov MMA, Moscow

R. R. Ataulakhanov

NII – Gamaleya Scientific Research Institute Of Epidemiology And Microbiology, Moscow

This work is a study into the possibility of increasing the efficacy of combination therapy of trophic ulcers and postoperative wounds of lower limbs with the aid of a topical immuno-modulator.

44 patients from 30 to 81 years (30 women, 14 men) with chronic trophic ulcers of the lower limbs participated in the study. Trophic ulcers develop because of disturbance of the blood circulation in the lower limbs due to thrombophlebitis (inflammation of veins) or diabetic angiopathy. In the majority of patients, the thrombophlebitis arose as the complication of varicose disease. Diagnosis of varicose disease, post-thrombophlebitic syndrome (PTFS)" was identified to 41 patients. At the beginning of the study, the signs of acute thrombophlebitis against the background PTFS was found in 9 people, the signs of the erysipelatous inflammation of the skin (due to *Streptococcus pyogenes*) - in 5 people. 1 patient had a trophic ulcer combined with osteomyelitis of tibia, two - with the incipient gangrene of toes. In the anamnesis (medical history) of three patients there was a phlebectomy, and 1 patient had therapy for sclerosing of the varicose expansion of veins.

The overwhelming majority of the investigated patients had 1 trophic ulcer but two patients had 2 ulcers. In the majority of the cases they were located on the anterior, internal or external surface of shin, 2 patients with diabetic angiopathy had ulcerous process localised on the toe. The sizes of trophic ulcers varied from 0.5 x0.5 cm to 3.0 x4.5 cm. The crater of ulcer was filled with fibrinous masses in 30 patients, fibrinopurulent - in 6 of patients, with the pyonecrotic fragments of tissue - in 5 patients. In three cases at the moment of patient arrival the ulcer appeared clean, without the fibrinous, purulent or necrotic masses.

5 patients with necrotic-bullous form of erysipelas on the skin of shin had the signs of acute inflammation, bubbles with serous-purulent contents. 2 other patients had the signs of the incipient gangrene: the I and III toes of right foot were cyanotic (black in colour).

Treatment

All 44 patients underwent the following treatment:

- Bed rest with the elevated position of sick limbs for eliminating hemostasis and lymphostasis;
- The thorough cleansing of the skin around the ulcer;
- The creation of the current of tissue fluid from the ulcer into the bandage in the beginning of treatment. For this purpose were used the bandages with the hypertonic solution NaCl in combination with the alcoholic solution of

chlorophilipt, which ensured purification of ulcer, improvement of nourishment of the living tissues at the bottom and on the walls of ulcer;

- The activation of the regenerative abilities of organism after the purification of the crater of ulcer.

All patients with PTFS received the general and local treatment. General components of treatment were infusion (reopolyglucin 200 ml + trental 5 ml + the ascorbic acid 5 ml, during 5 days), eskuzan 15 drops 3 times per day in a 24 hour period, aspirin 0,5 g - 1 time per day in a 24 hour period; troxevazin 2 capsules 3 times per day in a 24 hour period during 15 days or diovenor 600 mg 1 time per day in a 24 hour period during 30 days. In addition to the treatment described above the patients with the signs of acute thrombophlebitis obtained the injections of the solution of heparin 5000 Units 4 times per day in a 24 hour period during 6 days.

Local treatment during the first couple of days (from 1 to 4 days) comprised of the following - chlorofillipt of alcohol in combination with the hypertonic solution and dressing were done each day. After the purification of ulcer the bandages were laid with the ointment of Gepon (Treatment Group) or solkoseril (Control Group, 10 people). The 3 patients who had ulcer without fibrinous, purulent or necrotic elements. In these patients the treatment began immediately with the ointment of Gepon - the immuno-modulator, which possesses the ability to increase the efficacy of immune protection, and also has direct antiviral effect.

Ointment was made directly in the drugstore GKB № 1 and had the following composition (mass ratio): Gepon 0,006; lanoline 10,0; oil olive 10,0; water for injections 10,0. Finished ointment stored with +4°C, could be used during 10 days. Ointment was applied as thin layer to the surface of trophic ulcer; bandage with the ointment of Gepon changed in a day. Treatment was conducted during 10 days (5 dressings).

The treatment of the uncomplicated trophic ulcers

By the 3rd day of treatment of local treatment with Gepon, all patients were observed to be healing and already had an explosion of growth of granulating tissue in the crater of ulcer. By 8-10 days of treatment with Gepon, the formation of scar from the connective tissue had occurred.

The control group of 10 patients had the same general therapy, but local treatment the with an ointment of solkoseril was applied after the purification of ulcer. The healing of ulcers took 5 - 15 days longer in the patients of the Control Group compared to the Treatment Group using the application of ointment of Gepon. One Control Group patient suffered the worsening the ulcer in the course of treatment with the ointment of solkoseril, and erysipelatus inflammation of the skin developed (necrotic- bullous form). This patient was assigned surgical treatment, in addition to general treatment with antibiotics and biseptol, and for the local treatment she was switched to the ointment of Gepon instead of solkoseril.

Treatment of the ulcerous defects of the skin after necrectomy apropos of the necrotic-bullous form of erysipelas

Patients with the necrotic-bullous form of erysipelas in addition to infusion therapy, had injections of cefazolin on 1g per sq m 3 times per day in a 24 hour period during 7 days, and also biseptol 480 mg 3 times per day in a 24 hour period during 10 days. Conservative treatment was combined with surgical intervention - necrectomy. Bubbles were exposed, the necrotized tissues were removed, and the open wound was processed by the solution of potassium permanganate. The further opened large defects of the skin after necrectomy were treated with Gepon as trophic ulcers. All patients had good results of treatment. By 3-4 days after the beginning of the application of ointment with Gepon, it was observed the expressed increase in the granulating tissue with the subsequent formation of connective-tissue scar within a short time after.

Treatment of the postoperative wounds of lower limbs in the patients with diabetic angiopathy.

Conservative treatment of patients with diabetic angiopathy supplemented with the adequate doses of insulin (p/k). Lincomycin 600-mg p/m 2 times per day in a 24-hour period during 14 days was used as the antibiotic. With the onset of gangrene of the finger, the conservative treatment were combined with adequate surgical intervention - amputation or restricted excision of the necrotized elements. In the postoperative period the wound and fistula were lavaged by the solution of Gepon (0,002 g in 10 ml of physiological solution), and also bandaged with the ointment of Gepon, as described above. The results of treatment testify about the significant activation of an increase in the granulating tissue and the accelerated healing of post-operative wound under the effect of Gepon.

It was obvious that the application of Gepon stimulated an active increase in the granulating tissue in clinical cases described above. Usually the patients with diabetic angiopathy have an almost inactive capillary beds, and during the surgical manipulations when blood is released, it is only from the subcutaneous vessels while internal tissues are practically exsanguinated (devoid of blood), and have a pink colour. In such patients an increase in granulative tissue either is usually not noted completely or develops very weakly, post-operative wounds chronically do not heal and trophic ulcers persist. Application of Gepon allowed attaining the accelerated healing of postoperative wounds and non-healing ulcers in patients with diabetic angiopathy.

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Clinical example

The patient L. O., 52 years (IB № 5039).

The entering diagnosis: varicose disease, post-trombophlebitic syndrome, and trophic ulcer of right shin.

Full Diagnosis: varicose disease, post-trombophlebitic syndrome, and the trophic ulcer of right shin. Erysipelatous inflammation of right shin (necrotic- bullous form).

Complaints on entering study: pain in the region of the right shin, which are amplified with walking, the presence of trophic ulcer on the anterior surface of lower of third right shin.

Anamnesis morbi: she considered herself as a sick person for 20 years, when the varicose expansions of the veins of right shin were appeared for the first time. Repeatedly she was treated by an angiosurgeon at home, she rejected full surgical treatment. Trophic ulcer appeared approximately one month ago, the attempts to be treated independently did not bring the alleviation, and she was admitted to the surgical section of 1-GKB.

Anamnesis vitae: she did not remember about her juvenile diseases. She denied the presence of Botkin's disease, tuberculosis, the presence of venereal diseases in herself and nearest relatives. Allergological anamnesis is not aggravated.

Status praesens objectivus: the general state of patient is satisfactory, consciousness clear, position in the bed active. Patient is of the increased nourishment, osteomuscular system without the pathology. Skin and the visible mucous of usual colour. Regional lymph nodes are not increased, mobile, painless. In the lungs the respiration is vesicular, respiration rate 16 in 1 min. The tones of heart are rhythmical, pulse 68 in 1 min, blood pressure 130/80 mm. Tongue is moist, pink, stomach is soft, painless, the liver

- on the edge of costal edge, spleen does not palpate, the symptom of "tapping" is negative from both sides.

Locus morbi: right lower limb is edematic, the shin is cyanotic colour, and it is painful with the palpation. On the anterior surface of lower third of shin there is the trophic ulcer 2x2 cm, edges are hyperemized, in the crater there is a fibrinous secretions. Analysis: the blood on RW - negative; the biochemical analysis of the blood - protein 54 g/liter, the creatinine 76 mmol/l, urea 5,5 mmole/liter, residual nitrogen 25 mmole/liter, diastasis 20 g, bilirubin 16 - 4 - 12 mmol/liter, glucose 3,2 mmole/liter; coagulogramma - prothrombin 85%, fibrinogen of 3,2 mmol/liter, the time of recalcification 90 s; the total analysis of the blood: 3 - 5,5 billion. /ml, L - 6,4 million /ml, N - 115 g/l, coloured indicator - 0,92, ESR - 25 mm/h; the total analysis of urine - standard.

Treatment: the solution of heparin 5000 units p/c every 6 h, aspirins 0,25 g 1 time a day; locally trophic ulcer was processed by the alcoholic solution of chlorofillipt, the surface of the ulcer was lubricated 2 times a day by the ointment of troxevazin, on the night - by ointment of solkoseril. The general state of patient considerably deteriorated during the 5 days of treatment, the temperature of body was increased to 39,5C. The skins of right lower limb are acutely hyperemized, hypertrophied, painful. The diagnosis is established: the erysipelatos inflammation of right lower limb.

The local surgical treatment: the bubbles dissected, the necrotic elements of tissues removed. The baths with potassium permanganate, the infusion therapy (reopolyglucin 200 ml + trental 5 ml + the ascorbic acid 5 ml p/v drop, during 5 days), eskuzan 15 drops 3 times per day in a 24 hour period, aspirin 0,5g 1 time per day in a 24 hour period, troksevazin 2 capsules 3 times per day in a 24 hour period during 15 days or diovenor 600 mg 1 time per day in a 24 hour period during 30 days were assigned.

Correction of the treatment: Cefazolin 1g 2 times per day in a 24 hour period, biseptol 480mg 3 times per day in a 24 hour period. In two days, in the region of the afflicted limb, the bubbles with the serous fluid appeared, under which subsequently were formed the sections of the necrosis of derma (necrotic-bullous form of erysipelas). In view of the absence of positive effect from the preceding therapy, *the application of Gepon was added to the treatment.*

Locus morbi at the beginning of therapy with Gepon: over the anterior surface of the right shin there are 3 ulcerous defects of the skins 10x10 cm, the wound are filled with fibrous- purulent discharge. After the sanitation of wound surface by the solution of Rivanol, the bandages with Gepon were applied. The change of bandages was conducted ever day. After the second dressing, there was already a significant increase in the appearance of granulating tissue, (only 5 dressings during 10 days) wound was cleaned. The operation of autodermoplasty was carried out by the stamp graft method (15 stamp grafts). Gepon in the form of ointment continued to use on the entire post-operative surface. With the application of Gepon "were take" all the 15 stamps, the scar was formed within the shortest period of time.

Clinical example

The patient L. N., 78 years (IB № 6784).

The entering diagnosis: obliterating atherosclerosis of the vessels of lower limbs. Diabetes mellitus.

Full diagnosis: diabetes mellitus of the III degree. Diabetic angiopathy of lower limbs. Incipient gangrene of the III toe (ungual phalanx) of right foot.

Complaints with the entering: constant pains in the lower limbs, especially into region of the III toe of right foot, general weakness, and malaise.

Anamnesis morbi: she considered herself ill for approximately 20 years, when diabetes mellitus was discovered for the first time. Repeatedly she was treated in the endocrinological and surgical hospitals. The latest aggravation began 3 weeks ago, when the above complaints appeared. Attempts at the independent treatment proved to be futile, she was admitted to the Surgical Separation 1st GKB.

Anamnesis vitae: appendectomy in 1950. She denied presence of Botkin's disease, tuberculosis, and venereal diseases in herself and nearest relatives. Allergological anamnesis is not aggravated. She observes the prolongedly elapsing suppurations with any insignificant traumata.

Status praesense objectivus: the general state of average severity, consciousness is clear, position in the bed active. Patient is of usual nourishment, osteomuscular system without the pathology. Regional lymph nodes are not increased, mobile, painless. In the lungs - vesicular respiration, respiratory rate 16 in 1 min. The tones of heart are rhythmical, is slightly muted, pulse 68 in 1 min, blood pressure 130/90 mm. Tongue is slightly dryish, the stomach of correct form, participates in the report of respiration,

with painless palpation. The symptoms of the stimulation of peritoneum are negative. The liver on the edge of costal edge, spleen does not palpate. The symptom of "tapping" is negative from both sides.

Locus morbi: skins of both lower limbs are pale and dry. On the feet the skin is cool by feel. Skin of III toes of right foot in the region of the unguis phalanx is cyanotic- black colour. Motions in the finger are preserved. Analyses: RW - negative. The total analysis of the blood: E - 4,2 billion/ml, L - 9,2 million/ml, Hb - 105 g/l, coloured indicator - 0,95, ESR- 17 mm/h. Biochemistry of the blood: glucose (with the entering) of 18,5 mmole/liter, glucose (after correction) of 5,4 mmole/liter; bilirubin 20,3-5,8 - 14,5 mkmol/l, ALT - 0,43 mmol/l, AST - 0,3 mmol/l. The total analysis of urine - standard. Coagulogram: prothrombin index 90%, fibrinogen of 8,8 mkmol/l, the time of recalcification 100 s.

Treatment: the injection of insulin (p/c) 28 units in the morning, 16 units in the evening, the solution of Lincomycin 600 mg p/m 3 times per day in a 24 hour period during 14 days. Infusion therapy (reopoliglukin 200 ml + trental 5 ml + actovegin 5 ml p/v drop, 5 times every other day).

The local treatment - Lincomycin was injected into the III toe of right foot under the tourniquet. At night after the injection the "pulling" pains appeared in region of the III finger. In the morning in the region of the necrosis of the skin the oval section with a length of about 2,5 cm was made. The necrotic elements was cut all over in the region of the section of unguis phalanx, sequester was removed, rubber graduate was set, aseptic bandage was superimposed. From the following day the bandages were **applied with the ointment of Gepon**, dressing was carried out in every other day 5 times. During the dressings necrotic elements were removed to the "living" tissue. The treatment made it possible to avoid finger amputation. The subsequent treatment passed successfully according to the type of the treatment of osseous panaritium. There was rapid purification of wound, energetic increase in the granulating tissue and formation of scar from the connective tissue were noted.

Clinical example

Patient B. L. A., 65 years (IB № of 4571).

Entering diagnosis: diabetic angiopathy of the vessels of lower limbs, the incipient gangrene of 1 toes of right foot.

Full diagnosis: diabetes mellitus of the II type of average severity in the stage of decompensation. Diabetic angiopathy of lower limbs. Incipient gangrene of the I toe of right foot. Diabetic nephropathy 1st degree.

Complaints with the entering: constant pains in the region of right foot, the black colour of skin of the I toes of right foot, general weakness and malaise.

Anamnesis morbi: considered herself as a sick patient for approximately for 20 years, when diabetes mellitus was identified for the first time. Repeatedly she was treated in the endocrinological section of the hospital. Complaints above appeared about 2 weeks ago. Independent treatment was attempted but without the result. She was admitted into the Surgical Section of 1st GKB.

Anamnesis vitae: she does not remember juvenile diseases. She denies Botkin's disease, tuberculosis, and venereal diseases in herself and nearest relatives. Allergological anamnesis is not aggravated. She periodically notes pains in the region of heart. She has increased blood pressure.

Status praesens objectivus: the general state is satisfactory, consciousness clear, position in the bed active. Patient is increased nourishment. Skins are pale. The osteomuscular system is without the pathology. Regional lymph nodes are not enlarged. They are mobile, painless. In the lungs - vesicular respiration, respiratory rate 16 per 1 min. The tones of heart are muted, rhythmical, pulse 82 impacts in 1 min, AD of 140/80 mm. Stomach is soft, with the palpation is painless. The liver is on the edge of costal edge. Spleen does not palpate. The symptom of "tapping" from both sides is negative.

Locus morbi: both of shins and foot are cool to touch. Pulsation on A.dorsalis pedis is considerably weakened. The I toe of right foot is cyanotic-black colour in the region of the unguis and average phalanges, motion in the finger are preserved.

Analyses: RW - negative; E - 3,2 billion. /ml, L - 13,5 million. /ml; N - 104 g/l, coloured indicator - 0,97; ESR - 56 mm/h; prothrombin - 100%, fibrinogen -4,8 mkmol/l, the time of recalcification 90 s; glucose of the blood 12,5 mmole/liter; the total analysis of urine - L to entire field of vision.

Reovasografia - the general blood flow of right shin is reduced, left shin sufficient. The tone of vessels is increased. Venous draining is hindered, it is more to the right.

Treatment: operation - amputation of the I toe of right foot with head of I mesopodial bone.

Regime II, diet 9. Injections of insulin (p/c) 26 units in the morning, 16 units in the evening. Injections of the solution of Lincomycin 600 mg p/m 3 times per day in a 24 hour period during 14 days.

Local treatment: dressing with the alcoholic solution of chlorofillipt, application of ointment with Levomicol.

Locus morbi at the moment of the beginning of treatment with Gepon: postoperative wound in region of the I toe of right foot is 3 cm in the diameter. There is a fistula motion with purulent discharge to the stump of mesopodial bone.

Treatment with pharmaceutical Gepon included in washings of fistula motion and post-operative wound using a solution of Gepon (0,002 g in 10 ml of physiological solution). The procedures using Gepon were repeated every other day, 5 procedures during 10 days. On the 6th day of treatment with Gepon the sequestrum was extracted from the fistula motion. To the 10th day the wound was clean and decreased in the diameter to 1.5 cm. The lips of the wound were coupled by adhesive tape according to the type of the directing sutures. Treatment continued with the ointment of Gepon. By the 14th day granulating tissue appeared, but the sequester of the stump of mesopodial bone continued to be secreted from the fistula motion. By 30th day the wound had healed.