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© Verhun A.R., Krasnyi M.R., Verhun O.M.,Makahonov I.O., Ivanykovych T.O., 2023

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PRESSURE ULCERS (BEDSORES, DECUBITUS ULCERS): STRATEGY OF COMPLEX TREATMENT IN A PALLIATIVE CARE DEPARTMENT, AUTHOR'S VIEWS FROM THE STANDPOINT OF CLINICAL EXPERIENCE

Verhun A.R., Krasnyi M.R., Verhun O.M.,Makahonov I.O., Ivanykovych T.O.
Danylo Halytsky Lviv National Medical University, Lviv, Ukraine

Introduction. Weakened, immobile, bedridden patients who occupy a passive position in bed often develop local changes of dystrophic and ulcerative-necrotic changes, decubitus ulcers, which are determined by trophycal disturbances of the skin and underlying tissues. Significant risk factors include diabetes mellitus, conditions after cerebrovascular diseases, Parkinson's disease and other neurological pathologies, and exhaustion in patients with insufficient or inadequate care. Modern scientific research is mainly aimed at developing strategies and methods for the treatment of pressure ulcers that have already formed, which is a local purulent-necrotic process. There is no clear consensus on the criteria for readiness of bedsores (which affects the outcome of surgery) for surgical treatment, which ultimately determines the length of the hospital care of palliative patients.
Objective. To investigate the possibilities and optimize the complex management (surgical treatment, etc.) of decubitus ulcers (pressure ulcers) especially stage III-IV in some rehabilitation medical centres, in particular in the palliative care department.
Materials and methods. Some cases of decubitus ulcers (pressure ulcers, especially stage III-IV) from palliative care department are being investigated. The total sample of the retro- and prospective analysis included the results of the complex treatment of 412 patients aged 40-93 years: 174 males and 238 females with soft tissue pressure ulcers.
Results and discussion. Stage I and II pressure ulcers were treated conservatively. In the presence of purulent complications, complex surgical sanation was performed. Clinical plans and treatment included adequate nutritional support, decompression of the area, and sanation of pressure ulcers with antiseptics, including surgical intervention if necessary, adequate local and systemic infection control, and correction of background comorbidities. Based on author's clinical classification and the DOMINATE strategy, we created a simplified strategy, pathogenetically based, and adapted for the treatment of pressure ulcers in a palliative care department with an adequate sequence of care and complex therapy. Under visual and tactile control, purulent area were diagnosed, opened, and revised intraoperative in stages with precise stepwise necro-, and in 7% of patients – with sequestro necrectomy; the formed cavity was washed with a solution of hydrogen peroxide, chlorhexidine, and aqueous povidone-iodine solution, which also achieved complete evacuation of pus and the necrotic detritus. If necessary, we applied counter-perforations. Some purulent cavities were drained with rubber drains, filled with hydrophilic liniment, and swabs soaked in povidone-iodine. The main wound was filled with sterile gauze swabs with hydrophilic liniment. If it was impossible to simultaneously remove necrotic masses from the standpoint of monitoring the patient's general condition or additional/repeated necrosis formation, we used strategies of complex treatment according to standard clinical protocols, tactics of repeated, programmed resanitations/renecrectomies, and

antibacterial therapy. Our proposed clinical classification criteria and adapted NODITE clinical strategy are simple and easy to use. Significant reduction of pain, signs of purulent necrotic inflammation, and effective secondary prevention of complications constitute a set of criteria for effectiveness and economic feasibility, which, in our opinion, determines the possibility of introducing into clinical practice. Using the NODITE strategy, we found complete healing of complicated pressure ulcers within 45-60 days in half of the patients in the main group, while in the control group; this figure was only 35.7%. It has been shown that adequate local restriction and sanation of the problem area and the use of special anti-decubitus mattresses in palliative care departments contribute to the regression of the pathological process, granulation and marginal wound epithelialization.

Conclusion. The strategy for the prevention, care and treatment of complicated bedsores includes N (Nutrition) – adequate nutritional support; O (Offloading) – offloading, decompression – external pressure reduction on the bedsores area by the use of special care products and orthopedic devices, which contributes to the proliferative phase of the wound process; D (Debridement) – opening, removal of pus and necrosis from the wound with precise step-by-step necro- and (if necessary) sequestro necrectomy, with drainage of purulent cavity; I (Infection) – the most appropriate combination of general antibiotic therapy and topical application of antiseptics and antibiotics; T (Tissue management) – creating an appropriate environment in the wound, care, and stimulation of marginal epithelisation; E (Education) – providing appropriate care, monitoring the dynamics of the pressure ulcer wound process and correcting local venous and/or lymphatic stasis.

Key words: Purulent-necrotic pathology, pressure ulcers (bedsores, decubitus ulcers), classification criteria, features of prevention, strategies of complex treatment.

Introduction

As is well known, the main causes of bedsores – decubitus ulcers (DecU) are ischemia and neurotrophic changes in tissues caused by their chronic compression, inadequate nutrition and care, urinary and fecal incontinence, metabolic disorders, atrophy of soft tissue, increased pressure on protruding parts [1-4, 12-15, 31]; limited activity and/or immobility of patients (constant pressure on the same body parts); general and local microcirculatory disorders due to the underlying disease, etc. [8-10]. Weakened, immobile, bedridden patients in a passive position in bed often develop localized dystrophic and ulcerative-necrotic changes caused by trophic disorders of the skin and underlying tissues [1, 11, 14, 31]. Significant risk factors for DecU are the presence of diabetes mellitus, other cerebrovascular pathology, Parkinson's disease and other neurological pathologies; exhaustion in patients with insufficient or inadequate care [10, 12, 29-31]. At the same time, as the duration of compression or external pressure on the tissues decreases, minimal parabiotic changes occur in the latter without any consequences [13, 27, 28]. The main factors contributing to the formation of DecU are continuous pressure, shear forces, pathological soft tissue moisture, skin contact with physiological secretions with subsequent maceration against a background of prolonged forced positioning of the patient and their physical inactivity [1-3, 12-15, 17, 20]. Patients with uncomplicated superficial DecU receiving therapeutic treatment do not require surgical treatment but the presence of skin changes should mobilize of the medical to prevent the progression of the process and the occurrence of purulent complications [9-11, 13, 27, 28]. It is necessary to assess the patient's health status, paying particular attention to identifying or excluding various external and internal risk factors. The most important thing in bedsores preventing and the progression of ulceration is to identify the risk of developing this

complication. Many scales and classification have been proposed for this purpose, including those of Norton (1962), Waterlow (1985), Braden (1987), Medley (1991), etc. In 2017, we also proposed an optimized clinical DecU classification [5-9, 20-23] and formulated risk factors for some complications that require repeated necrectomy (Fig. 1) and sequestro necrectomy [2, 4-7, 13, 24, 28]. The originality of the method in the Ukraine Patent is confirmed [27-29].

Figure 1 Stage IV pressure ulcer of the sacroiliac region with extensive soft tissue necrosis (intraoperative photography) in patient M., 88 years old. Necrotomy was performed, the stage of removal of most of the necrosis (primary sanation and necrectomy)

The presence of pressure ulcers can determine the development of inflammatory, some purulent and necrotic complications, which have a specific and are difficult to treat with complex surgical sanation [10-14, 16, 17, 22-24]. Prevention and treatment of uncomplicated and complicated DecU are some basic issues in palliative care, requiring careful study in the context of creating and further development of medical care (services) algorithms [5, 8, 10, 11, 13]. Unfortunately, modern scientific research is mainly aimed at developing new methods of treating pressure ulcers that have already complication [10, 11, 21-23]. The main role of treatment at this stage is to protect the wound from repeated infection and further exposure to damaging factors [3, 5, 7, 10-13, 26, 27]. In addition to specific preventive measures, it is necessary to treat any concomitant diseases and syndromes that contribute to the formation of DecU of various localizations (diabetes mellitus, occlusive arterial diseases, etc.), to provide adequate pain relief, and to correct the water and electrolyte balance [2, 12-14, 24]. There is no clear consensus on the criteria for readiness of bedsores (which affects the outcome of surgery) for surgical treatment, which ultimately determines the hospital length of the palliative patients [7-12, 22-25]. Considering this, we have planned this study to the possibilities and optimize the complex management (surgical treatment, etc.) of some bedsores (decubitus ulcers, pressure ulcers) especially stage

III-IV in some rehabilitation medical centers, in particular in the palliative care department.

Materials and methods

The total sample of the retro- and prospective analysis included the results of complex treatment of 412 patients aged 40-93 years: 174 males and 238 females who were treated inpatient over a 10-year period in the palliative care unit of the municipal non-profit enterprise "Lviv Territorial Medical Union No.2, Planned Complex Treatment, Rehabilitation and Palliative Care", a separated department "4th Hospital", the clinical cases of the disease was characterized by the formation of soft tissue DecU. Stage I and II pressure ulcers were treated conservatively. 128 patients (31.07% of the sample) aged 72-87 years were treated: 82 men and 46 women with stage I and II pressure ulcer with maceration, wetting, desquamation of the epidermis, and formation of superficial ulcers, who were treated in the palliative care unit with decompression measures, the use of antiseptic sanation [1-5, 8-13, 23-27], silica-(zeolite), streptocide-, and antibiotic-containing powders [4, 5, 6, 12-14, 21-23] and a standard treatment regimen according to generally accepted guidelines, clinical strategies, and local protocols [6, 8, 10-13, 19-22]. Stage III and IV bedsores with complication were complex surgical treated in the palliative care unit / department (strategy with repeated necrectomy and complex local sanation in main group and primary standard treatment in control group) with secondary decompression measures according to generally clinical strategies [2-5, 10-13, 20-23]. The results of the treatment were statistically analyzed. The safety assessment included registration and analysis of side effects. The Bioethics Committee of Danylo Halytsky Lviv National Medical University found no violations of clinical and ethical standards.

Results and discussion

Complex surgical sanation has been performed in complicated stage III-IV soft tissue DecU [5, 7-9]. The structure of the main background pathology was dominated by cardiovascular diseases (coronary artery disease, atherosclerosis, heart rhythm disorders, and hypertension) – in 39.29% of cases, neurological pathology (condition after cerebrovascular accident, demyelinating diseases, neuritis, and neuropathy) – in 37.5% of patients, obesity of III-IV degree – in 12.5% of cases of a local subsample. Chronic obstructive pulmonary disease was diagnosed in 7.14% of the subsample, and type II diabetes mellitus in 2.68% of the other patients. We consider it axiomatic that dry skin should be moisturized and wet skin should be dried [2-5, 7-12, 16, 18-22, 27-29]. The skin should be irrigated with saline solution; alcoholic agents such as some alcohol-containing solutions, camphor alcohol, etc. and lotions are used in patients with oily skin [7, 12-15, 21-24, 26]. On the basis of the author's morphologically based modification, we classify some bedsores into stages I-IV (variants “a” or “b”), Stage I, superficial (epidermal) damage (Ia, stable / permanent hyperemia of a limited skin area (erythema), most often over the protruding bone, and Ib, superficial epidermis desquamation with formation of vesicles with serous-hemorrhagic contents, maceration, local foci of epidermal desquamation), Stage II, loss of skin thickness with the formation of a decubitus ulcer (IIa, the ulcer bottom with signs of granulation and/or crusting and IIb, the ulcer bottom with pronounced fibrinous layers), Stage III, complete loss of skin thickness with the formation of soft tissue necrosis with necrotic subcutaneous fat, necrotic detritus can be seen in the wound, but bone, tendons or muscles are not visible or palpable, during probing or finger or instrumental / tupfer revision (IIIa, formation of limited coagulation (dry) necrosis and IIIb, formation of limited-colliquative (wet) necrosis without acute symptomatic abscess), Stage IV, deep tissue damage (Fig. 2), visually differentiated elements of necrotic tissue and/or muscle and/or connective tissue structures with suppuration, dissection, abscess; often there are "swims", "pockets" and "tunnels" filled with pus, necrosis and necrotic detritus [2-5, 7-11, 20, 28,

29]; tissue damage is deep, muscles and/or tendons and bones can be seen (or felt by probing or finger inspection); focal "conglomerate" necrosis is characterised by the presence of pus discharged along or under the lesions (IVa, abscess (phlegmon) formation in the bottom wounds and/or walls of the DecU without (or with) purulent flooding and IVb, spread of the process to adjacent (neighbouring) connective tissue structures with the formation of putrefactive myositis, necrotic fasciitis or / with perichondritis, periostitis, osteomyelitis, etc.) [4-8, 17-22].

Figure 2 Stage IVb bedsores, soft tissue necrosis of the left iliac region with involvement of the underlying structures and fascia. Anaerobic ichorous putrefactive phlegmon, fasciitis, periostitis

Care plans and complex treatment of pressure ulcers based on the TIME, DOMINATE and NODITE strategies include adequate nutritional support, orthopedic decompression of problem areas [6, 8, 17], sanation of the pressure ulcer with antiseptics (including surgery if necessary), adequate local and systemic control of infection, correction of background comorbidities. Adequate care and treatment of patients with chronic wounds and, in particular, pressure ulcers is possible only with the use of complex strategies and algorithms. The TIME (Tissue management) strategy is actively used, including necrectomy, care, control of infection, creation of an appropriate moist environment in the wound, stimulation of granulations and marginal epithelialization [6, 17, 18]. A new step in the treatment of chronic purulent wounds is the DOMINATE strategy, which can be considered a clinical protocol [1-5, 16-18]. This strategy involves the removal of non-viable tissue from the wound in the presence of colliquative (wet) necrosis or demarcated dry necrosis areas [8-11, 21-23, 29-31]. During necrectomy, cells in necrobiosis are also removed; reducing the wound infection, trypsin, chymotrypsin, and collagenase powders are widely used [4-7]. For the effective treatment of this category of patients, the most appropriate combination of treatment is general antibiotic therapy and local application of antiseptics and topical

antibiotics [7, 23, 28-30]. The use of orthopedic decompression devices to reduce the "chronic" pressure on the tissues in the area of the pressure ulcer reduces the likelihood of necrobiosis progression compared with patients who do not use decompression devices. The correct choice of adsorbent bandage [2, 5-7, 9, 13, 18-21] allows you to control the exudation process, prevent the breakdown of collagen structures, optimize the granulation process and neovascularization in the proliferative phase [16-19, 22, 24-26]. Adequate nutrition, vitamins C, A, E, K, and chemical elements such as zinc, copper, etc. are great importance in the management of patients with chronic wounds / bedsores. For successful healing, it is necessary to improve blood supply and ensure tissue oxygenation, some anticoagulants, antiaggregants, and vasodilators are used. However, these strategies do not fully correspond to the limited possibilities of DecU treatment in palliative care department and the necessary sequence of application of the main stages of complex treatment for uncomplicated and complicated soft tissue injuries [9-11, 24, 26, 27]. Based on the DOMINATE strategy [10-14], we have developed the NODITE strategy [27-29], which is pathogenetically based and adapted to the treatment of pressure ulcers with appropriate implementation of the principles of care and therapy. N (Nutrition), adequate nutritional support with sufficient proteins, amino acids, carbohydrates, and fats. In addition, fluid loss occurs during the hydration phase of the wound process. If the patient has no signs of heart or kidney failure, he or she needs about 30 ml/kg/day of fluid. Multivitamin complexes and necessary trace elements complexes play an additional important role in wound healing. This part of the strategy also includes the use of parenteral nutrition and anabolic steroids (if indicated). O (Offloading), offloading, decompression. In this stage, the external pressure on the problem soft tissues and DecU, etc. is reduced by the use of special care products and orthopedic devices. The changes that occur are characteristic of the proliferative phase of the wound process – cell regeneration and healing of the destroyed tissue [2, 11-14]. The fact of offloading also ensures marginal epithelialization of the wound. D (Debridement), removal of nonviable tissue from the wound in the presence of colliquative (wet) necrosis or limited (demarcated) areas of dry necrosis in the wound reduces the number of bacteria and the intensity of their growth respectively reduces the perifocal inflammatory process [2, 5-8, 11, 13-15]. It also includes the opening and drainage of purulent effusions with precise step-by-step necro- and, if necessary, sequestro necrectomy. At the same time, simultaneously during necrectomy, cells in the state of necro- and parabiosis are also removed. I (infection), effective antibacterial / antibiotic treatment of these patients [25-28, 30, 31]. It includes the topical use of antiseptics and antibiotic-containing liniments and, if necessary (if indicated), systemic antibiotic therapy, both empirical, clinically based, and antibiotic therapy according to the results of bacteriological examination (culture of wound discharge with antibioticogram) [4, 10-12, 27, 28]. T (Tissue management), creating an appropriate environment in the DecU, wound care and stimulation of marginal epithelialization. Tissue management measures also include mechanical effects, stepwise removal of bacterial and fibrinous layers containing pathogenic microorganisms and small areas of necrosis; the use of wet and dry bandages, sessions of therapeutic ultrasound exposure to wounds, laser therapy, autolytic therapy, gel, and absorbent bandages [2, 6, 10, 11, 13-15, 20-23], which have an osmotic effect. Local enzyme therapy in the form of trypsin, chymotrypsin, collagenase powder; hyperbaric oxygenation, negative pressure wound therapy, aspiration drainage, cell therapy, “artificial skin”, early auto dermoplasty, etc. are widely used [9-12, 27-30]. E (Educations) – provides adequate care, monitoring of the dynamics of the wound process of pressure ulcers, and correction of local venous or lymphatic stasis. Physiotherapy courses are pre-

scribed for this category of patients. The use of non-steroidal anti-inflammatory therapy, systemic enzyme therapy with serratiopeptidase, vasodilators, lymphovenotonics, most often Detralex or Diovenor 600, or Cyclo3 fort, is also indicated [7-9, 24-27]. We performed a complex treatment of sacroiliac DecU with the local antiseptics combination in 35% of patients aged 52-88 years who were receiving care and inpatient treatment in palliative care unit or department in Lviv. The average age of the patients was 71 years. The cause of stage II-III pressure ulcers of the sacroiliac region was prolonged forced body position in combination with physical inactivity [7, 8, 11, 18, 20] in 16% of patients after cerebral circulatory disorders of the ischemic type, in 12% of patients with incurable oncological pathology, in the remaining 4% after an unoperated femoral neck fracture (derotation bandage was applied), in patients with some polyarthritis and 1% of patients with multiple sclerosis. Ischemic disease and grade II-III hypertension were diagnosed in all cases. Local hyperemia, epidermal desquamation, and maceration with suppurative wounds were noted in 16% of patients, coagulation necrosis in 79%, and colliquative necrosis with purulent discharge in 51% of the subsample, and purulent effusion in 15% patients. Adequate surgical interventions were performed in all cases of colliquative necrosis and suppuration [18-22]. The absence of granulations, pathological exudation from the DecU, redness of the skin in the wound area, the presence of non-viable loci, and an unpleasant odor (foul-smelling purulent discharge) indicate critical pathogenic colonization of the bedsores and at the same time the need for combined treatment with general antibiotic therapy and topical use of antiseptics and antibiotics [8, 9-12, 17-20] including ofloxacin liniment, bacitracin zinc with neomycin sulfate, etc. In 22% of the subsample of patients, a staged simplified NODITE strategy adapted for use in palliative care units (department) was used. The area of colliquative (wet) necrosis in DecU was precisely surgically removed by excision en block within healthy and / or necrobiotic tissue with the removal of pus and necrotic detritus [7, 16-20] (Fig. 3). Under visual and tactile control, purulent leaks were diagnosed, opened, and sanitized intraoperatively in stages with precise step-by-step necro-, and in 7% of patients – sequestro necrectomy, the formed cavity was washed with a solution of hydrogen peroxide, chlorhexidine, and an aqueous solution of the antiseptic povidone-iodine, which also achieved complete evacuation of pus and the remains of necrotic detritus. If necessary, counterparts were applied. Purulent effusions were drained with hydrophilic liniment, with rubber, latex or polyethylene outlets and tampons moistened with povidone-iodine solution, etc. [27-30]. The main wound was filled with sterile gauze tampons with hydrophilic liniment. In the postoperative period, while continuing the complex systemic therapy and correcting the co-morbid pathology, the cavity was washed daily with an antiseptic solution and the tampons were replaced with an antiseptic combination. If it was impossible to remove of necrotic masses at once from the standpoint of Damage control of the patient's general condition or additional/repeated necrosis formation [4, 6-8, 12, 21-23], the tactics of repeated, programmed DecU renecrectomies were used [28-30]. Drainage was removed for 3-5 days, after which local application of ointment bandages was performed until the wound / bedsores was completely cleaned and granulated [4, 8, 11-13].

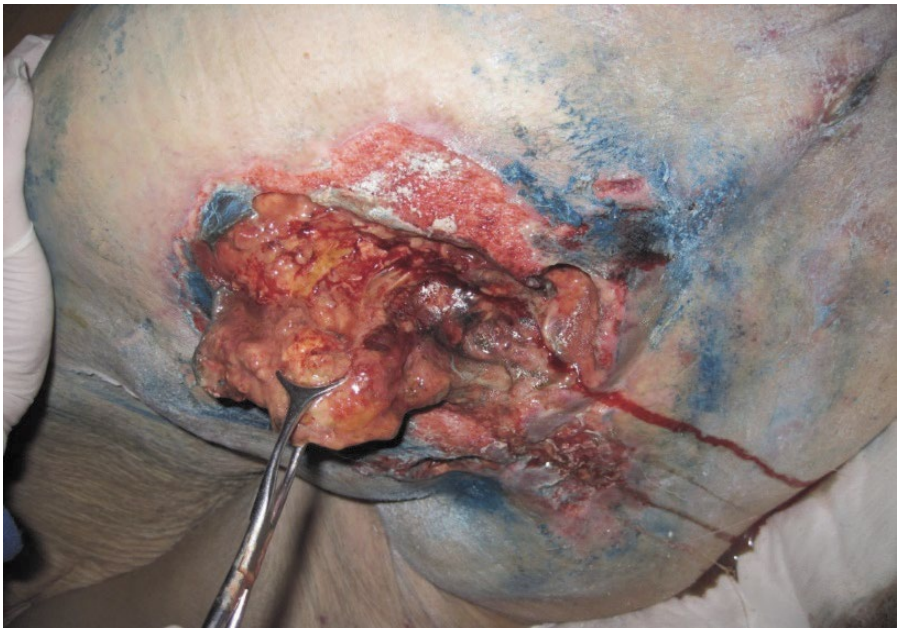

Figure 3 Stage IV sacroiliac decubitus with colliquative soft tissue necrosis. Putrefactive phlegmon, epifasciitis, perifasciitis. The necrectomy stage with opening of the main purulent focus

Antiseptics mix for intra-bandaging use and wound insertion was prepared by combining 25 ml of povidone-iodine solution, 25 ml of chlorhexidine solution, 10 ml of 30% dimexide solution, 6 ml of 10% lidocaine, emulsified before bandaging and used for drainage with impregnation of sterile gauze tampons, which were used to tamp purulent leaks and applied to the wound defect (pressure ulcer). The absence of local compressive changes progression, a reduction (shortening) in the time of wound exudation and granulation, and the early appearance of DecU marginal epithelization (2=30.25) were also confirmed. In patients with cytological examination on days 3, 5, and 12 after necrectomy, the total leukocytes number in smears consistently decreased, macrophages and fibroblasts were confirmed (appeared). A significant decrease in perifocal edema and infiltration, acceleration clearing of the bedsores wound from necrotic detritus, adequate granulation on day 10-12 after the start of treatment with the proposed combination of antiseptics (Fig. 4), signs of marginal epithelialization were observed, and the wound healing rate in these patients was higher on average by 5 day compared to the groups of patients who received standard protocols and strategies of complex treatment ($p \leq 0.01$, $\chi^2=32.01$). With the use of ointment dressings, granulation was observed on 5.4±0.2 days in stage III pressure ulcer and 6.5±0.1 days in stage IV bedsores [8, 12-14, 29] ($\chi^2=27.44$)

Figure 4 Stage IV pressure ulcer with colliquative soft tissue necrosis in patient P., 73 years old, condition after surgical sanation (15 days after the primary intervention), some positive local wound changes, and total granulation

Taking into account the peculiarities of the pathogenesis, morphogenesis, and clinical course of DecU with colliquative soft tissue necrosis and purulent complications that affect the course of healing, the use of not only antibiotic therapy but also removal of necrosis, adequate drainage, and local treatment led to a significant reduction in the signs of purulent necrotic inflammation and an improvement in the rate of wound healing from 3.4 ± 0.39% to 4.2 ± 0.23% (χ^2 = 32.01). The changes that occur are characteristic of the proliferative phase of the wound process – healing of the destroyed matrix, and cell regeneration [15, 18-21]. The criterion for the effectiveness of care was the formation of a granulating wound surface with minimal exudation, which we observed in all clinical observations, or (and) with the presence of marginal epithelialization and (or) local crust formation (χ^2=25.21, p≤0.05). Signs of purulent necrotic inflammation and effective secondary prevention of complications constitute a set of criteria for effectiveness and economic feasibility, which, in our opinion, determines some clinical possibility in the palliative practice [14]. Some methods of auto dermoplasty are of choice in case of a large skin defect, predicted significant changes in the surrounding tissues (bedsores ulcer), and close location of bone formations. It should be noted that the use of decompression orthopedic devices to reduce "chronic" constant pressure in the area of the DecU provides a positive effect in 60% of patients, halves the likelihood of necrobiosis progression, compared to patients who do not use unloading (decompression) devices. Using the NODITE strategy, we found that half of the patients in the main group had complete healing of com-

plicated pressure ulcers within 45-60 days, compared to 35.7% in the control group (χ^2=31.14, p≤0.05). Adequate necrotomy, local decompression of the problem area and the use of special anti-decubitus mattresses contribute to the regression of the pathological wound process and marginal epithelialization.

Conclusions

Successful prevention and treatment of decubitus ulcers (bedsores) in a palliative care department (unit) are possible, appropriate, and reasonable. We have modified the DOMINATE sequence taking into account the clinical features of pressure ulcers, created a pathogenetically sound and adapted for treatment original scheme (NODITE strategy) with an adequate sequence of care and complex therapy. It is necessary to take into account the peculiarities of the wound process in the formation of purulent pressure ulcers, the composition of the microflora, which affects the course of healing and requires not only antibiotic therapy but also the use of topical antiseptics, the need to correct background and comorbid pathology. Methods and strategies for the treatment of bedsores with soft tissue necrosis and purulent complications are based on the DOMINATE strategy and include a clinically sound sequence of care measures, systemic and local therapy; precision necrectomy with revision of leaks, and combined drainage with tamponade of the surgical wound. The strategy for the prevention, care, and treatment of decubitus ulcers includes N (Nutrition), adequate nutritional support; O (Offloading), offloading, decompression – reduction of external pressure on the pressure ulcer by the use of special care products and orthopedic devices, which contributes to the proliferative phase of the wound process; D (Debridement), removal of non-viable tissue from the wound, opening, and drainage of purulent effusion with precise step-by-step necro- and, if necessary, sequestro necrectomy; I (infection), the most appropriate combination of general antibiotic therapy and topical application of antiseptics and antibiotics; T (tissue management), creating an appropriate environment in the wound, care, and stimulation of marginal epithelialization; E (education), providing appropriate care, monitoring the dynamics of the bedsores wound process and correcting local venous and/or lymphatic stasis. Our proposed NODITE strategy (simplified palliative modification of the DOMINATE strategy) for the complex treatment of pressure ulcers is based on clinical criteria, is simple and easy to use; a significant reduction in pain, signs of purulent necrotic inflammation and effective secondary prevention of complications constitute a set of criteria for effectiveness and economic feasibility, which, in our opinion, determines the possibility of its implementation in the clinical practice of some palliative care unit.

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РЕЗЮМЕ

КОМПРЕСІЙНІ ВИРАЗКИ (ПРОЛЕЖНІ, ДЕКУБІТАЛЬНІ ВИРАЗКИ): СТРАТЕГІЯ КОМПЛЕКСНОГО ЛІКУВАННЯ У ВІДДІЛЕННІ ПАЛІАТИВНОЇ ДОПОМОГИ, АВТОРСЬКІ ПОГЛЯДИ З ПОЗИЦІЙ КЛІНІЧНОГО ДОСВІДУ

Вергун А.Р., Красний М.Р., Вергун О.М., Макагонов І.О., Іваникович Т.О.
Львівський національний медичний університет імені Данила Галицького, м. Львів, Україна

Вступ. У ослаблених, малорухомих та лежачих хворих, які перебувають у пасивному вимушеному положенні в ліжку, часто виникають місцеві зміни дистрофічних і виразково-некротичних змін, пролежнів, які визначаються трофічними порушеннями шкіри і підлеглих

тканин. Суттєвими факторами ризику є цукровий діабет, цереброваскулярна патологія, хвороба Паркінсона та інша неврологічна патологія, виснаження хворих з недостатнім або неадекватним доглядом. Сучасні наукові дослідження в основному спрямовані на розробку стратегії та методів лікування вже сформованих пролежнів, які є місцевим гнійно-некротичним процесом. Немає чіткого консенсусу щодо критеріїв готовності пролежнів (що впливає на результат операції) до хірургічного лікування, що в кінцевому підсумку визначає тривалість стаціонарного лікування паліативного хворого.

Мета роботи. Дослідити можливості та оптимізувати комплексне лікування (хірургічне лікування та ін.) компресійних (декубітальних) виразок, особливо III-IV стадії у реабілітаційних медичних центрах, зокрема у відділенні паліативної допомоги.

Матеріали і методи. Досліджено і проаналізовано випадки декубітальних (компресійних) виразок, особливо III-IV стадій у відділенні паліативної допомоги. Загальна вибірка ретро- та проспективного аналізу включала результати комплексного лікування 412 пацієнтів віком 40-93 років: 174 чоловіків та 238 жінок з пролежнями м'яких тканин.

Результати та обговорення. Пролежні I і II стадії лікували консервативно. При наявності гнійних ускладнень була проведена комплексна хірургічна санація. Клінічні плани та лікування включали адекватну нутритивну підтримку, декомпресію області, санацію пролежнів антисептиками, включаючи за необхідності хірургічне втручання, адекватний місцевий та системний інфекційний контроль та корекцію фонових супутніх захворювань. На основі авторської клінічної класифікації та стратегії DOMINATE ми створили спрощену стратегію, патогенетично обґрунтовану та адаптовану для лікування пролежнів у відділенні паліативної допомоги з адекватною послідовністю надання допомоги та комплексної терапії. Під візуальним і тактильним контролем інтраопераційно діагностували, розкривали та ревізували гнійну ділянку з чіткою поетапною некро-, а у 7% хворих – із секвестрнекректомією; утворену порожнину промивали розчином перекису водню, хлоргексидину та водним розчином повідон-йоду, чим також досягали повної евакуації гною та некротичного детриту. При необхідності застосовували контрапертури. Гнійні порожнини дренували гумовими дренажами, заповненими гідрофільним лініментом, і тампонами, змоченими повідон-йодом. Основну рану заповнювали стерильними марлевими тампонами з гідрофільним лініментом. У випадках неможливості одночасного видалення некротичних утворень з точки зору моніторингу загального стану пацієнта або утворення додаткового/повторного некрозу застосовували комплексне лікування за стандартними клінічними протоколами, тактику повторних програмних санацій/ренекректомій та антибактеріальну терапію. Запропоновані нами клінічні критерії класифікації та адаптована клінічна стратегія NODITE є простими та зручними у використанні. Значне зменшення болю, ознак гнійно-некротичного запалення та ефективна вторинна профілактика ускладнень є критеріями ефективності та економічної доцільності, які, на нашу думку, детермінують можливість впровадження в клінічну практику. За стратегією NODITE у половини пацієнтів основної групи ми виявили повне загоєння ускладнених пролежнів протягом 45-60 днів, тоді як у контрольній групі цей показник становив лише 35,7%. Показано, що адекватне локальне обмеження, санація проблемної зони та використання спеціальних протипролежневих матраців у відділеннях паліативної допомоги сприяють регресу патологічного процесу, грануляції та крайовій епітелізації рани.

Висновок. Запропонована на основі клінічного досвіду стратегія щодо вторинної профілактики та лікування ускладнених пролежнів включає N (Nutrition) – адекватну нутритивну підтримку; O (Offloading) – розвантаження, декомпресію – зменшення зовнішнього

тиску на ділянку пролежнів за допомогою спеціальних засобів догляду та ортопедичних пристроїв, що сприяє проліферативній фазі ранового процесу; D (Debridement) – розсічення, видалення некрозів та гною з рани, тобто поетапну некро- та (при необхідності) секвестрнекректомію з дренуванням гнійної порожнини; I (Infection) – найбільш доцільну комбінацію загальної антибіотикотерапії та місцевого застосування антисептиків і антибіотиків; T (Tissue management) – створення відповідного середовища в рані, догляд та стимуляцію крайової епітелізації; E (Education) – надання відповідного догляду, спостереження за динамікою пролежнево-раневого процесу та корекцію місцевого венозного та/або лімфатичного стазу.
Ключові слова. Гнійно-некротична патологія, компресійні виразки (пролежні, декубітальні виразки), критерії класифікації, особливості профілактики, тактика комплексного лікування.

АВТОРСЬКА ДОВІДКА

Вергун Андрій Романович
Доктор медичних наук, доцент кафедри сімейної медицини, старший інспектор наукового відділу, лікар-хірург вищої категорії
Львівський національний медичний університет імені Данила Галицького
Адреса: 79010, Україна, м. Львів, вул. Пекарська, 69
Тел.: +38 (050) 7473340
E-mail: plagiamail@meta.ua

Verhun Andrii
Doctor of medical sciences, associate professor of the department of family medicine, senior inspector of the scientific department, surgeon of the highest category
Danylo Halytsky Lviv National Medical University
Address: 79010 Lviv, 69 Pekarska str.
Tel.: +38 (050) 7473340
E-mail: plagiamail@meta.ua

Красний Михайло Романович
Кандидат медичних наук, асистент кафедри ендокринології
Львівський національний медичний університет імені Данила Галицького
Адреса: 79010, Україна, м. Львів, вул. Пекарська, 69
Тел.: +38 (096) 2243434
E-mail: office@meduniv.lviv.ua

Krasnyi Mykhailo
Candidate of Medical Sciences, assistant of the Department of Endocrinology
Danylo Halytsky Lviv National Medical University,
Address: 79010 Lviv, 69 Pekarska str.
Tel.: +38 (096) 2243434
E-mail: plagiamail@meta.ua

Вергун Оксана Михайлівна
Кандидатка медичних наук, доцентка кафедри терапії №1, медичної діагностики та гематології і трансфузіології ФПДО, лікарка-терапевтка вищої категорії
Львівський національний медичний університет імені Данила Галицького
Адреса: 79010, Україна, м. Львів, вул. Пекарська, 69
Тел.: +38 (050) 5340627
E-mail: vergunkafedra@gmail.com
Verhun Oksana
Candidate of medical sciences, Associate Professor of the Department of Therapy №1, Medical Diagnostics, Hematology and Transfusiology FPGE
Danylo Halytsky Lviv National Medical University
Address: 79010 Lviv, 69 Pekarska str.
Tel.: +38 (050) 5340627
E-mail: vergunkafedra@gmail.com

Макагонов Ігор Олександрович
Кандидат медичних наук, доцент кафедри сімейної медицини
Львівський національний медичний університет імені Данила Галицького
Адреса: 79010, Україна, м. Львів, вул. Пекарська, 69
Тел.: +38 (096) 4538281
E-mail: igormakagonov@gmail.com
Makahonov Ihor
Candidate of Medical Sciences, Associate Professor of the Department of Family Medicine
Danylo Halytsky Lviv National Medical University
Address: 79010 Lviv, 69 Pekarska str.
Tel.: +38 (096) 2243434
E-mail: igormakagonov@gmail.com

Іваникович Тарас Олегович
Студент 1-ї групи 3-го курсу медичного факультету № 1
Львівський національний медичний університет імені Данила Галицького
Адреса: 79010, Україна, м. Львів, вул. Пекарська, 69
Тел.: +38 (094) 8640807
E-mail: tarasivanykovych@gmail.com
Ivanykovych Taras
Student of the 1st group of the 3rd year of the Medical Faculty No. 1
Address: 79010 Lviv, 69 Pekarska str.
Tel.: +38 (094) 8640807
E-mail: tarasivanykovych@gmail.com

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