The Prognostic-analog scale of the estimation of gravity of bedsores in patients in critical medicine.

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Based on the retrospective study of the medical histories of more than 1200 patients, treated in the institute of critical care medicine, was developed the new prognostic-analog scale of the bedsore **characteristic** in patients in critical medicine. 6 most important prognostic criteria were separated, based on which condition of patient with the bedsore was assessed: severity of general condition, local and general factors, which influence the development of area, depth, localization and the nature of bedsore. Each of these criteria was divided in terms of the score system into 5 levels. The new scale helps to determine the general condition, severity and estimate conditions of bedsores not only according to its stages, but also according to the localization, the nature, the depth, the area and the complementary factors of the bedsores facilitating development. This makes it possible to determine the criteria of bedsore readiness for the surgical operation, to refine the sequence of therapeutic tactics program depending on stage, sizes, location of bedsore. Obtained data made it possible to recommend the use of the scale for determining of need and readiness of bedsore for the surgical treatment, and also for the timely correction of treatment and for prognostic purposes.

Key words: bedsore, critical condition, the prognostic-analog scale.

Introduction. The bedsore relates to one of the most common problems, which doctors encounter during prolonged treatment of patients, who are found in critical care conditions in clinics of critical care medicine.

The frequency of the bedsores appearance is 43 cases per 100 000 person. This complication is developed in: 9% of hospitalized patients, 65% of elderly persons with the breaks of thigh, more than 30% of sick intensive care units and 60% of patients with tetraplegia. The bedsores in patients, who are on bed rest and obtaining the treatment at house, reveal with a frequency from 2,6 to 24%, mainly aged persons (up to 70% of patients). According to the data of R.Salcid (1996), the frequency of the bedsores appearance among hospitalized patients in the USA fluctuates on average from 2,7 to 29%, reaching 60% among patients with vertebral-cerebrospinal injury, more than 50% of these patients have bedsores of III - IV degree. With the lingering bedsores can be developed osteomyelitis in 20- 30% of patients and the risk of lethal outcome grows 4-5 times (Staas W., 1982).

Today bedsores are preferred to be treated in conservative manner. The main reason is economical viability. The cost of the treatment of one bedsore case varies from $ 2,000 to $40,000 during the conservative and surgical treatments respectively. Even in the leading world clinics that are occupied with bedsore problem, operations are performed only on 20- 30% of patients and mainly on patients who have the bedsores of IV degree. Operations are preceded by long preparation, which takes from 2-3 months to 1 year. The high percentage of postoperative complications and lethality keeps unchanged. The II and III degree bedsores are treated conservatively.

There are many bedsore classifications known in science. The classification is rational, from the point of clinical application view, if the criteria of etiology, pathogenesis, clinical estimation and estimation of the effectiveness of the methods of treating the patient are combined in. The classification proposed by V. Balich and O. Kogan, which includes 5 stages: surface bedsore, deep bedsore, deep bedsore with the lateral pockets, deep bedsore with osteomyelitis of the subjects of the bones and the bedsore of scar, have widely been used for a long time. There are also used other classifications that mark out several stages of bedsores (Prossure Ulcer Advisoriy Panel, 1989; С.Е. Шафит, 1999; Х.А. Мусалатов и др. 2002).

The most important in prophylaxis of the bedsores formation is the risk identification of bedsore development. There are many estimation scales, which include: the scale of Norton (1962), the scale of Waterlow (1985), the scale of Braden (1987), the scale of Medley (1991) and others. The Braden scale includes the risk factors facilitating the formation of bedsores. During the estimation 6 signs are considered: the sensitivity of skin, the humidity of the skin, the level of physical activity, the mobility of patient, nourishment, friction and worn-out condition. The Norton scale evaluates the danger of the bedsore formation. The scale became the most popular among the medical personnel, because of simplicity and rapidity of estimation of the risk degree. The division of patients with this scale is considering 5 indices, including physical state, consciousness and activity, mobility and the presence of no retention.

However, above mentioned scales evaluate the factors that favor bedsore formation and are directed to their prevention. The deficiency of the mentioned methods is in not considering all special features of pathogenesis and clinic of bedsores and not evaluating its nature that decreases their clinical significance.

The purpose and tasks: The purpose of our study was the development of a new scale, based on joining the special features of pathogenesis and clinic. In accordance to the purpose of a study several tasks have been set:

First: On the basis of the patients inspections, including retrospectives, based on the medical histories.

Second: On determine the most important factors, which influence on development and severity of bedsore flow of estimate as well as on their nature on the marks, in the dependence on their severity.

Materials and methods: The basis of our message is the retrospective study of more than 1200 patients', who are treated in the institute of critical medicine, medical histories. By the means of obtained data generalization, we isolated 6 most important prognostic criteria, with the help of which was produced the estimation of conditions of patients with the bedsore: severity of patient's condition, local and general factors, which influence the bedsore development, area, depth, localization and the bedsore nature. Each of these criteria was divided into 5 level scoring system, from the least (1 mark), to the most important (5 marks). The scale developed by us was implemented in the clinical practice.

Results and discussion: To determine bedsore condition and control over the patient's effective treatment, it was necessary to have objective information and to estimate the degree of trophic changes and disturbances. The new scale helps to determine and to estimate the severity of bedsore not only by stages, but also by the localization, the nature, the depth, the area and the complementary factors, which facilitate the development of bedsores. It makes possible to determine the criteria of patient treatment tactics, readiness of bedsore for the surgical operation, to refine the sequence of the program of therapeutic tactics depending on stage, sizes, location of bedsores and also to avoid their complications.

The Prognostic-analog scale of the estimation of gravity of bedsores in patients in critical medicine:

Estimation of gravity of the state of the patient:

1 mark - without infringement vital functions (rather satisfactory)
2 marks - compensation of vital functions (average gravity);
3 marks - partial compensation of vital functions (heavy);
4 marks - critical state (extremely heavy);
5 marks - terminal.

Complementary factors facilitating the development of the bedsores:
1 mark - local the disturbance of blood circulation (vegetovascular dystonia, Reyno disease);
2 marks - diabetes mellitus, the transferred operations;
3 marks - sepsis, oncology diseases;
4 marks - cerebral disturbances;
5 marks - spinal disturbances.

Separation of bedsores on the localization:
1 mark - lesion of one lower extremity;
2 marks - lesion of both lower extremities;
3 marks - lesion of the lower part of the body (sacral-coccyx division, the seam of buttocks, ischial bone, pelvic bones);
4 marks - upper part of the body (upper part of the vertebral post, blade);
5 marks - head.

Nature of the bedsore:
1 mark - cicatrization and epithelization;
2 marks – granulation;
3 marks - serous isolations;
4 marks - dry necrosis;
5 marks - moist necrosis.

Estimation of depth of the bedsore:
1 mark - the circulatory disorders of the skin (pallor, which is changed by venous hyperemia), cyanosis, cloth take the edematic form, by feel the touch cold;
2 marks - disturbance of the integrity of the skin, the presence of bubbles with the discharge, an increase in the temperature of the struck region, edema;
3 marks - formation of ulcer with the discharge, that is extended is not deeper than the skin;
4 marks - necrosis of the skin, subcutaneous fat cellulose tissue, fascia, tendon;
5 marks - necrosis of fascia, tendon, that reaches periosteum and bone.

General estimation of the area of the bedsore:
1 mark - is less than 10 cm;
2 marks - 10-20 cm;
3 marks - 20-35 cm;
4 marks - 35-50 cm;
5 marks - is more than 50 cm.

Total minimum quantity of marks - 6.
Total maximum quantity of marks - 30.

Mentioned scale is tested on 16 Institute of critical medicine patients, who developed bedsores in the process of treatment. All patients were inspected and treated in standard, accepted by the institute of critical medicine way (Z. Kheladze, 2007), including of acid-base balance study, complete analyses conduct, planimetric studies and photometry implementation. Their bedsores were complexly treated, including local treatment - the purification of wound, ointment, from the indications nekrentomic. We also used plasma emissions flows in cases with large size bedsores.

Obtained data make it possible to recommend the use of the scale for determining of need and readiness of the bedsore for the surgical treatment. Based on our data, the most acceptable scores are from 15 to 22. Higher numbers evidence the expressed severity of local pathologic

process and general condition, which requires additional preparation of patient for the operation.

Score less than 15 evidences the favorability of conservative treatment.

It is also important application of the scale for prognostic purposes and timely correction of the conducted treatment. With the score from 22 forecast is doubtful, with 26 and more - extremely unfavorable. If there is no the positive dynamics in the process of treatment during 10-12 days, it is recommended to correct treatment via the prescription (or change) of antibiotics, conducting of detoxification therapy, prescription of immunomodulators, conducting additional therapeutic gymnastics and physiotherapeutic treatment, vitamin therapy, etc.

Currently we are gathering information concerning above mentioned problems. The obtained results give us good reason to believe that the scale to be completely objective and convenient in practice and to recommend its approval during preventive maintenance and treatment of bedsores in patients in critical medicine.

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კრიტიკული მედიცინის ინსტიტუტი, თბილისი, საქართველო

რეზიუმე

კრიტიკული მედიცინის ინსტიტუტის 1200 ავადმყოფობის ისტორიების რეტროსპექტიული შესწავლის შედეგად შემუშავებულია ავადმყოფთა ნაწოლების დამახასიათებელი ახალი პროგნოზულ-ანალოგური შკალა. გამოყოფილ იქნა 6 ყველაზე მნიშვნელოვანი პროგნოზული კრიტერიუმი: ზოგადი მდგომარეობის სიმძიმე, ნაწოლის განვითარებაზე მოქმედი ადგილობრივი და ზოგადი ფაქტორები, ნაწოლის ფართობი, სიღრმე, ლოკალიზაცია და ხასიათი. ყველა ეს კრიტერიუმი ქულების სისტემით დაყოფილ იქნა 5 დონედ. ახალი შკალა საშუალებას იძლევა განისაზღვროს ნაწოლის ზოგადი სიმძიმე და შეფასდეს ნაწოლები ლოკალიზაციის, ხასიათის, სიღრმის, ფართობისა და ნაწოლის განვითარების ხელშემწყობი დამატებითი ფაქტორების მიხედვით. ეს საშუალებას იძლევა განისაზღვროს ქირურგიული ოპერაციის კრიტერიუმები და დაზუსტდეს სამკურნალო ტაქტიკის თანმიმდევრობა.