

Published in: "Emergency Medical Aid" - Russian research and practice journal – 2006, volume 7, No. 3. – pp. 133-134.

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Title: **Modern Therapies for burn wounds**

Key words: SCENAR therapy, burns.

Annotation: Modern therapies for burn wounds are described in the article. Methods of sanogenetic activation at all stages of treatment are noted as promising and advanced, as well as the achievements of modern technologies based on biotechnological response which made it possible to create devices with real lack of adaptation period to excitation, which causes response reactions directed to enhance body's restoration. According to the author, the method of SCENAR-therapy is the most multifunctional and procurable in current conditions. For the purposes of therapy, this method allows us to use cutaneous covering and mucosae which were not affected by burning injuries.

MODERN THERAPIES FOR BURN WOUNDS

Burn treatment is one of the most complicated, labour-consuming and expensive processes in practical medicine, which requires theoretical knowledge and practical skills in various areas of surgery, critical care medicine, traumatology, therapy, microbiology, biochemistry. This specifically concerns deep burns of III B – IV degree, which are treated in hospital only, because skin grafting is necessary for restoration of the cutaneous covering. To enhance wound detersion from necrotic tissues surgical and chemical necrectomy is performed with one-stage or delayed skin grafting.

At different stages of the wound process, local burn treatment aims different objectives. At the first stage of eschar rejection, inflammation and abscess, local treatment is directed to resist infection and to enhance rejection of necrotized tissues. Wet-to-dry dressing with solution of iodophors active to gram-positive and gram-negative bacteria, fungi and viruses, is used to form dry eschar. Wet-to-dry dressing with other antiseptic solutions are traditionally used – chlorhexidine, dioxidin, furacilin (nitrofurazone), miramistin and others.

Methods of physical action are used to dry wounds – fluidizing beds, infrared irradiation, controllable abacterial environment, laminar air flow (LAF) rooms etc. Unctures are used to inhibit pyoinflamamtory process, which is effective for the wounds' microflora. Polypharmaceutical ointments with water-soluble (hydropilous) base and silver bearing ointments have become popular in Russia. At the second stage of the wound process – the regeneration – after eschar rejection local conservative treatment should be directed to create good conditions of granulations maturation and to prepare the wound for skin grafting.

There are now data of more than 300 wound coverings at different stages of research and development. Nevertheless, a multifunctional drug which could be used at all stages of the wound process of different depth of burns still does not exist.

Drugs containing natural polymers, such as collagen, polysaccharides, cellulose etc. were used to stimulate granulations growth. Synthetic films with or without micropore made of polyurethane, polypropylene, polyethylene, polyvinyl chloride etc. became widely used to close burn wounds.

Cutaneous covering restoration through skin grafting is performed after exsection of burn wounds to the level of viable tissues or preparation of granulation tissue. Along with erasion of necrotizing tissues and reduction of bacterial content of the wound, preparation for plastic closing in burn disease should also include correction of body's overall condition. If these are not performed, decline in the course of the reparative process in the wound can be expected, which will negatively affect the skin grafting.

One of the most serious problems of major burns treatment (more than 15-20%) is impossibility of single-step closing of the burn wound with autografting, due to shortage of donor resources. The problem of donor shortage can be solved by using modern biotechnological methods – grafting of cultivated cells of human derma (human dermal fibroplast, keratinocyte), living dermal equivalent, cultivated dermal substitute. Dermal allograft is taken form human cadaver, from still-born children, "junk" skin after amputation. Sking grafts usually vascularize (and survive) by the 3-5th day of the allotransplantation on adequately prepared wound's bed. Then a rejection of dermal allograft occurs in about 2 or 3 weeks on average.

Taking under consideration legal and other difficulties of procurement and use of dermal allograft, we consider perforated suilline xenoderma as the best solution for the purposes of temporary biological covering. Moreover, research and use of cultivated human dermal cells and cultivated skin substitutes for the purposes of closing major wound surfaces is a promising and advanced theoretical and practical approach.

Methods for activation of sanogenesis at all stages of treatment should also be advanced. Modern technologies based on biotechnological response made it possible to create devices with real lack of adaptation period to excitation, which causes response reactions directed to enhance body's restoration. The method of SCENAR-therapy is the most multifunctional and procurable in current conditions. This method allows to use cutaneous covering and mucosae which were not affected by burn injuries.

The article is provided with the assistance of:

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Translated from Russian to English Language by: Mrs. Veselina Petkovap August 2008, Mladost 329, Sofia 1712, Bulgariap <http://syntagma.dir.bg>