

Development of composition extemporaneous ointment to treat frostbite

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Frostbite is the damage to any part of the body (up to necrosis) under the influence of low temperatures. More often frostbite occurs during cold winter time at an ambient temperature below -10°C -20°C . For prolonged stay outside, especially at high humidity and strong wind, frostbite can be obtained in autumn and spring at an air temperature above zero.

The purpose of our work was to choose the optimal composition of ointment by natural compound for frostbite treatment.

Under the influence of cold in the tissues there are complex changes, the nature of which depends on the level and duration of the temperature decrease. When the temperature is below -30°C , the basic value of frostbite has a damaging effect of the cold directly on the tissue, and cell death occurs. When the temperature is up to -10 - -20°C , at which the majority of frostbite occurs, the leading role is played by vascular changes in the form of a spasm of the smallest blood vessels [1].

The traditional treatment for frostbite I-II aims at self exclusion wounds epitelizatia necrotic tissue, skin transplant on granulated wounds after self exclusion tissues when frostbite III degree and amputation at various levels on the demarcation line in the 4th degree, created a bandage fix gauze bandage. Infusion-transfusion therapy, adequate as to amount and dosage of medicines. Hyperbaric oxygen therapy[1, 2].

The analysis of the range of soft medicines in the modern pharmaceutical market has shown that the composition of ointments for the treatment of wounds includes active substances that belong to various pharmacotherapeutic groups. However, the overwhelming majority are preparations of synthetic origin, which have certain disadvantages, limiting their use [2, 3].

The main disadvantage of these drugs, as drugs for local treatment of wounds and burns, is associated with the emergence in the process of treatment of microbial resistance to antibiotics and the emergence of a large number of hospital strains of bacteria. In this regard, many patients suffer from drug allergies [1, 2]. Given the shortcomings of antibiotic wounds, it is important to search and create a new drug based on a substance of natural origin that has sufficient antimicrobial and anti-inflammatory action with minimal side effects.

Rosehips oil has a specific unobtrusive aroma and a bitter taste. And depending on the plant variety and the place of its growth, rosehip oil can differ in color: from pinkish-golden to bright orange and even brown. The high nutritive content of rosehip seed oil and its natural corrective and

cell regeneration properties make this product the best ally for different cosmetology and dermatology treatments [4].

The dog rose hips (*Cynosbati fructus*) comprise several biologically active compounds, such as: sugars, organic acids, pectins, flavonoids, tannins, carotenoids, fatty acids, vitamins (particularly vitamin C and also vitamins B1, B2, K, PP, E), macro- and microelements etc.

The chemical composition of rose hip oil is characterized by a large number of saturated and unsaturated fatty acids contained in it, including linoleic, linolenic, oleic, stearic, myristic and palmitic acids. In addition, fatty oil is the main component of seeds, it is rich in carotene (vitamin A), tocopherol (vitamin E) and contains vitamins C and F in sufficient quantities. Such trace elements as copper, molybdenum, strontium and macroelements like iron, calcium, magnesium, phosphorus are also part of the rosehip oil [4, 5].

Rosehip oil has a tonic effect, stimulates nonspecific resistance of the body, enhances tissue regeneration and hormone synthesis, reduces vascular permeability, has an anti-inflammatory, immunostimulating and choleric effect. With its help, treat small lesions on the skin, scars, pressure sores, trophic ulcers. In addition, oil is prescribed as an auxiliary therapy for eczema, psoriasis, neurodermatitis, as well as for oral administration for cardiovascular diseases, hepatitis, cholecystitis, etc [3]. Rosehip seed oil is rich in unsaturated fatty acids, linoleic and linolenic acids, known to be involved in prostaglandin synthesis, membrane generation, defense mechanisms, growth and other cell regeneration related processes. Therefore this oil is of great use to promote epithelization [5].

Taking into account the above, the ointment composition for the treatment of frostbite is substantiated, which, due to the content of active components of vegetable origin, is an effective means of complex action.

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