DETAILED PHARMACOLOGICAL STUDYING OF PHOTOPROTECTIVE CREAM WITH THE NANOPARTICLES OF DIOXIDE OF CERIUM

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Today the main problems in ecology such as global warming and damage of theozone layer can invoke risk for health because of the increased solar activity. First of all threat for health is posed by a cancer of skin, and its most malignant manifestation – the melanoma. 95% of the patients in Ukraine with a melanoma perish that is connected with late diagnostics and untimely prevention. Protection of skin against sunshine by means of UV-filters is the most effective prophylactic of the photodermatosis, aging and a cancer of skin. For today as a part of modern photoprotectors are used physical light filters on the basis of oxide of zinc and dioxide of the titan which according to literature are ineffective in the conditions of hypersensibility of skin for the sun. The huge number of factors can lead to high photosensitization of skin: certain food (a melon, a tuna, grapefruit, etc.), drugs (doxycycline, methoxalen, etc.), photoallergic reactions, genetic predisposition (a fair hair and blue eyes by phenotype).This factors indicate the need of searching to the photoprotector, which can work in the conditions of a photosensitization.

We have made detailed pharmacological studying of cream on the basis of nanoparticles of dioxide of cerium (NDC – cream) on model of a photodynamic trauma in the conditions of a photosensitization with the «Ammifurinum». The technology of this cream has been developed by the professor S.O.Tihonova. This cream had already proved us its efficiency early on the same model in normal conditions and exceed efficiency of existing photoprotectors presented in the market of Ukraine for 15% that is connected not only with a high shielding rate, but also with high antioxidant activity. Experiment is made on 30 same-gender guinea pigs divided into 5 groups on 6 animals. We did radiation by an ultra-violet lamp at distance of 10 cm within 10 minutes on shaven sites of skin about 2x2 cm in size on three on each animal. The photosensitization was done by the solution for external application “Ammifurinum” (0,3%).

Control of results carried out by Suvorov’s calorimetric ruler, level of the histamine in tissues and blood, and quantity of leukocytes. In groups where we had protected skin by the way of NDC-cream the indicators were at the level of intact animals while at animals from groups which we radiated without photoprotectorit was observed expressed erythema, the raised level of a histamine and quantity of leukocytes. It testifies to further prospects of research of cream on the basis of nanoparticles of cerium as unique, universal and powerful photoprotector.