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Effects of wave technologies in the complex treatment of hemangiomas in children

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Hemangiomas of infancy (HOI) are the most common benign tumors in children. The incidence in general newborn population is between 1.1% and 2.6% but increases to up to 12% by one year of age. About 30% of HOI are noted at birth and 70%-90% will appear during the first four weeks of life. The majority of hemangiomas occur sporadically, however, familial occurrence of HOI has been reported. The female-to-male ratio was 3:1 which is similar to previously published ratio. Premature babies and those with a low birth weight have a significantly higher incidence of HOI. While the majority of infantile hemangiomas have a high rate of spontaneous regression, severe complications are possible and it is important to identify the dangerous forms as early as possible and start early treatment to prevent secondary complications.

Photochrome therapy is a kind of wave technologies of treatment via visible electromagnetic radiation (light quantum) of a certain wave length. Various visible radiation effects, with different waves, are caused by adaptive and biophysical features of colour sight, presence of photoceptors in a human body and in animals, etc. This light treatment kind peculiarity is the various intrinsic biological processes photoinduction, bound to photons energy absorption that are characterized by a weakening or a breakage of the weak inter-and intermolecular bonds. Therefore, selective photolytic splitting of bimolecular can result in the increase of their free forms possessing a higher biological potency. These processes are evident in the red radiance range. Clinically the monochrome red color matrix application, with the wave length of 0, 67 micrometer, allows providing medical effect, including the one occurring due to the inner mechanisms realization on cellular membranes. In this connection, the new medical technology - photochrome therapy is developed and applied clinically at hemangiomas treatment. The medical technology is patented in the Russian Federation on the invention.

Method application is based on the monochrome red light ability to induce in a body of a child the photoadaptive processes resulting in the humoral factors regulation activation at a local blood flow and in, regenerative, reparative reactions induction at tissues with rising synthetic, phagocyte neutrophils activity and in lymphoid immune defense part indices growth. The monochrome red light phototherapy promotes stabilization growth and skin vascular neoplasm's retrogress and also results in a peroxide and energy metabolism amelioration, body intrinsic processes harmonization and child's nonspecific resistance rising.

The possibility and effectiveness of monochromatic irradiation of red spectrum of 555 small patients with hemangiomas has been shown for the period from 2007 to 2009. The results obtained have demonstrated that photochromotherapy allowed to increase non-specific resistance and is accompanied by formation of favorable adaptation reaction of activation. The gaining effects of healing the wound by improving the reduced exudative and epitelisation phases, the significantly tumor size decrease up to regress have been observed.

An overview of the role of aspirin in cancer prevention

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Aspirin continues to be evaluated *in vitro* and in pre-clinical models to help elucidate mechanisms involved in carcinogenesis and the response of tumours to anti-neoplastic agents. Recent randomised evidence from trials primarily designed to prevent cardiovascular disease show a reduction in cancer incidence with long-term follow-up and epidemiological evidence from colorectal and breast cancer studies evaluating the effects of aspirin use after diagnosis suggests that aspirin may have a role in the adjuvant setting. The clinical management of patients is also continually evolving, with new combinations of agents or strategies being assessed; aspirin should not be overlooked in this process because it is neither new nor expensive.

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