The Experience of Photodynamic Therapy Application by Using Photosens and Alasens at a Municipal Polyclinic

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Photodynamic therapy (PDT) is a highly effective, organ-preserving method to treat oncologic and nononcologic diseases which is based on selective accumulation of a photosensitizer in pathologic tissue, followed by a photochemical reaction (which develops under the influence of laser irradiation) in it which destroys atypical cells. The PDT method is favourably different from other methods of treatment due to the preservation of the collagenous carcass of tissues and the healing of a tissue defect after tumor resorption by type of reparation, but not scarring. Thus, PDT can provide good cosmetic results. Nowadays, this method is widely used to treat oncologic and nononcologic diseases, but it has been so far a prerogative of big oncologic research centers and hospitals.

At Municipal Polyclinic № 84 in South-West Administrative District of Moscow, a cabinet for photodynamic therapy and high-technology methods to treat oncologic and nononcologic diseases was arranged. PDT is applied within ambulant treatment of patients with skin cancer and oropharyngeal cancer, with background and precancerous diseases of the female reproductive system and with persistent wounds. Photodynamic therapy is conducted with Russian photosensitizers – Photosens and Alasens (Producer FSUE “SSC “NIOPIK”, Moscow, Russia). Laser systems LPhT-675-01-“Biospec” and LPhT-630-01-“Biospec”, working in a continuous irradiation mode, are used to conduct photodynamic therapy.

By now, we have clinically experienced PDT with Photosens to treat 163 patients: 97 patients with various localizations of primary and recurrent basal-cell skin cancer, 17 patients with metatypical skin cancer, 23 patients with squamous-cell skin cancer, 5 patients with squamous-cell cancer of the upper and lower lips, 21 patients with persistent wounds. In case with oncologic diseases, Photosens was introduced intravenously, the corresponding drug dose was in the range of 0.5-0.7 mg/kg. The drug-light interval was 12 to 24 hours. The light dose was 150 to 250 J/cm². In case with persistent wounds Photosens was used by way of application. The preparation was dissolved in sterile physiological salt solution till the concentration was 250 mg/ml. An eight-ply gauze wad was watered in the gotten solution at the rate of 0.5 ml per 1 cm², and applied directly on the wound surface. The drug-light interval was 2 to 4 hours. The light dose was 30 to 60 J/cm².

PDT of female reproductive system diseases was conducted with 20% Alasens cream by means of application. The drug-light interval was 6 hours. The light dose was 150 J/cm².

The efficiency of treatment of oncologic patients was estimated due to the criteria of the World Health Organization. The therapeutic effect was achieved in all the treated patients. After PDT conducted with Photosens in 142 patients, full tumor resorption could be observed in 138 patients, and partial resorption – in 4 patients. After PDT conducted with Photosens in 21 patients with persistent wounds, therapeutic effect was achieved in 18 patients, no effect could be observed in 3 patients. In case with patients who had virus-associated gynecologic diseases, therapeutic effect was achieved in all the 25 patients as a result of treatment.

The PDT method of oncologic diseases provides good and excellent cosmetic results of skin cancer treatment, especially in case with inconvenient locations.

Compared to surgery and close-focus X-ray treatment which are oftener used to treat oropharyngeal cancers, the PDT method allows to significantly reduce duration of treatment, decrease number of complications, restore work-ability for certain age groups and reduce duration of patients’ disability.
PDT of persistent wounds helps to quickly clear a wound from purulo-necrotic masses, reduce swelling, improve blood flow in microvessels and fasten wound repair.

Treatment of background and precancerous diseases of uterine neck by means of PDT is quite a radical and preserving method of treatment, which helps to avoid scarring and preserve the anatomo-functional continuity of uterine neck and the architectonics of cervical canal.

The arrangement and functioning of a PDT cabinet at a municipal polyclinic provides a quick, effective, economic and alternative kind of treatment.

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