In the work the clinical experience of Photodynamic Therapy application (PDT) is presented. The method described is used for treatment of malignant affection of tracheobronchial tree having respiratory impairment and bile ductules occlusion. For PDT to be carried out photosensitilisers of second generation (photoditazene, radochlorine, photolone) as well as made in Russia Atcus-2 and Milon-Lachta semiconductor lasers with the wave length of 662 nm were used.

Treatment of two groups of patients is discussed, the first one including the patients with cancer of trachea and main bronchi, the second one being ill with cholangiocellular cancer.

The first group included the patients with inoperable malignant cancer of trachea and main bronchi where the method of PDT was used. The treatment was carried out in complex for 9 patients aged from 42 to 72. 6 patients were stated to have inoperable tumors and they received radiotherapy and/or chemotherapy, however after the treatment recurrence of the disease took place. In 3 other cases large scale crippling operation was needed. According to this fact the decision was taken to apply PDT in this case.

One of the patients had adenocystic cancer of trachea. After PDT no signs of disease incurrence were found during 3 subsequent years of observation.

One woman after pneumonectomy who had the incurrence of malignant carcinoid of her only lung for 4 years to follow had preserved quite appropriate lumina of respiratory tracts which determined satisfactory quality of life. The signs of dynamic tumor growth were absent.

4 patients being ill with carcinoid, adenocystic and planocellular cancer of main bronchi who were under dynamic bronchoscopic observation had marked regress of pathologic process from 1 to 1.5 years and the diameters of their respiratory tracts remained satisfactory
for adequate ventilation. 3 patients died due to the progress of their principal malady in the course of 1 year from the beginning of treatment.

The analysis of the data received brings us to the conclusion that the method of PDT used is an efficient technique which allows to reduce significantly the speed of trachea and main bronchi tumor growths and cause the reduction of pathological tissue. Life time of the two thirds of the patients with cancer of trachea and main bronchi was prolonged and its quality was obviously increased in such cases when other contemporary methods applied were not proved effective.

The need for developing new methods of treatment for patients suffering from cholangiocellular carcinoma is obvious. As a matter of fact, only 20% of the patients mentioned above are operable by the time of the diagnosis being established, while their life expectancy after 5 years of operation does not exceed 18%. Meanwhile the majority of the patients are left with constant transhepatic drainage. The presence of the catheter taken outside the body provides the opportunity to use it for PDT. The first stage of the research included the study of possibilities of tumor radiation treatment through the catheter wall. Optimum transmission spectra of semiconductor He-Ne lasers ($\lambda = 630-700$ nm) were studied as well as power loss with the light passing through endobiliary catheter walls was measured.

By the methods developed PDT was applied for the treatment of 4 patients. Control X-ray tests showed that all the patients were characterized by the reduction of tumor growth intensity and their life time increased compared to the similar patients without PDT application, and the quality of their lives improved.

The data received allow us to come to the conclusion about the efficiency of the method described and the necessity of its further investigation for studying its possibilities. Future research will help to determine the ultimate role of PDT in the treatment of inoperable cancer.

The expansion of the sphere where PDT can be used in oncology puts a number of questions to be answered, and without this problem to be solved the introduction of the new method seems to be impossible. Among these problems the following can be considered to be the principal ones: the provability of photosensitizer selective accumulation in a tumor of a certain morphological type, the possibility of light delivery to those parts of human body which are difficult of access without its power loss, estimation of laser emission and its penetration
depth, and, correspondingly, the thickness of tumor layer which can be exposed to radiation, as well as the development of criteria for procedure efficiency estimation.

The experience gained allows us to lay the foundation for further cooperation between Russian and German specialists in photodynamic therapy.