SURGICAL TREATMENT CANCER OF THE LUNG AND MEDIASTINUM WITH A MASSIVE INVASION OFTHE THORACIC AORTA

V.V. Andrushchuk[1], V.V. Zharkov[2], Y.P. Ostrovsky[1], S.A. Kurganovich[1], T.T. Gevorkjan[1], V.O. Odincov[1], N.M. Novitskaya[1]

[1] *"Cardiology Centre Belarus"*
[2] *"Onkology Center Belarus"*

Objectives: Evaluate the effectiveness of surgical treatment of patients with lung and mediastinal cancer and massive invasion (PLMCMI) in the thoracic aorta (TA)

Material and Methods: During the period from 2002 to 2010 in the "Cardiology Centre Belarus" were operated 11 PLMCMI in the TA. All of the patients were men. The average age was 57,6 ± 11,4 years. Cancer of the left lung was diagnosed in 9 cases, mediastinum – in 2. The process was staged as pT4N0M0 – 1, pT4N1M0 – 1, pT4N2M0 – 7, in two cases – III b cancer of the thymus. Histological findings: squamous cell lung cancer – 5, adenocarcinoma – 3, small cell lung cancer - 1, squamous cell carcinoma of the thymus – 2. In six cases, prosthetic aortic arch (AA) were made under extracorporeal circulation (EC), combined in five patients with pneumonectomy (PE), in one – with partial resection of the lung. In five cases prosthetics descending aorta (DA) were made in combination with PE, including in terms of partial EC at 3-and full EC at 1 and assisted circulation (AC) in the 1 patient.

Results: Average time EC in 7 patients was 262,9 ± 39,4 min., the average time of ischemia – 143,1 ± 20,8 min. In the fourth patient, operated under partial EC and AC, the average time of EC and AC was 84,3 ± 25,6 min. Overall hospital mortality – 4 patients (36,4%). The total number of patients with major hospital complications – 5 (45,5%). Half (3 of 6) of patients after prosthesis AA died in hospital period. Among the five patients without tumor invasion in AA 1 patient died. Mean follow-up of patients was 58,2 ± 8,4 months (27,5 – 120,3 months). One-, two-and three-year survival rate was 36,4 ± 14,5%, 18,2 ± 11,6% and 0%, respectively, median – 1,63 months. In the late period remaining 7 patients died. In the majority of cases (5 of 7) the cause of death was tumor progression. The best survival rates were after prosthesis DA without lesion of the mediastinal lymph nodes. All patients receiving PE with prosthetics AA died within two months. All three patients with status pN2 died from disease progression within 15 months.

Conclusion: Surgical treatment of a selected group the PLMCMI in TA more promising in cases with invasive tumors in DA without lesion mediastinal lymph nodes. Hospital mortality after surgery of the PLMCMI in AA remains high, and long-term survival is low. Surgical treatment of the PLMCMI in AA may be carry out by select group of patients with good functional reserves after staging, confirming the absence of lesions mediastinal lymph nodes, or in the case of lesion a single group.