

Morbidity and Mortality after Major Pulmonary Resections in Patients with Locally Advanced Stage IIIA Non-small Cell Lung Carcinoma Who Underwent Induction Therapy



Michael Peer, MD ^{a*}, David Stav, MD ^b, Arnold Cyjon, MD ^c,
Judith Sandbank, MD ^d, Margarita Vasserman, MD ^e, Zoya Haitov, MD ^f,
Lior Sasson, MD ^g, Letizia Schreiber, MD ^h, Tiberiu Ezri, MD ⁱ,
Israel E. Priel, MD ^j, Henri Hayat, MD ^k

^aDepartment of Thoracic Surgery, Assaf Harofeh Medical Center, Zerifin, affiliated to the Sackler Faculty of Medicine, Tel-Aviv University, Ramat Aviv, Israel

^bDepartment of Pulmonology, Assaf Harofeh Medical Center, Zerifin, affiliated to the Sackler Faculty of Medicine, Tel-Aviv University, Ramat Aviv, Israel

^cDepartment of Oncology, Assaf Harofeh Medical Center, Zerifin, affiliated to the Sackler Faculty of Medicine, Tel-Aviv University, Ramat Aviv, Israel

^dDepartment of Pathology, Assaf Harofeh Medical Center, Zerifin, affiliated to the Sackler Faculty of Medicine, Tel-Aviv University, Ramat Aviv, Israel

^eInstitute of Diagnostic Imaging, Assaf Harofeh Medical Center, Zerifin, affiliated to the Sackler Faculty of Medicine, Tel-Aviv University, Ramat Aviv, Israel

^fDepartment of Anesthesiology, Assaf Harofeh Medical Center, Zerifin, affiliated to the Sackler Faculty of Medicine, Tel-Aviv University, Ramat Aviv, Israel

^gDepartment of Cardiothoracic Surgery, Edith Wolfson Medical Center, Holon, Israel, affiliated with the Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

^hDepartment of Pathology, Edith Wolfson Medical Center, Holon, Israel, affiliated with the Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

ⁱDepartment of Anesthesiology, Edith Wolfson Medical Center, Holon, Israel, affiliated with the Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

^jDepartment of Pulmonary Medicine, Edith Wolfson Medical Center, Holon, Israel, affiliated with the Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

^kDepartment of Oncology, Edith Wolfson Medical Center, Holon, Israel, affiliated with the Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

Received 20 May 2014; received in revised form 25 June 2014; accepted 2 July 2014; online published-ahead-of-print 14 July 2014

Background

The optimal treatment for patients with locally advanced stage IIIA non-small cell lung carcinoma (NSCLC) remains controversial, but induction therapy is increasingly used. The aim of this study was to evaluate mortality, morbidity, hospital stay and frequency of postoperative complications in stage IIIA NSCLC patients that underwent major pulmonary resections after neoadjuvant chemotherapy or chemoradiation.

Methods

We conducted a retrospective analysis of all patients who underwent major pulmonary resections after induction therapy for locally advanced NSCLC from October 2009 to February 2014. Forty-one patients were included in the study.

Results

Complete resection was achieved in 40 patients (97.5%). A complete pathologic response was seen in 10 patients (24.4%). Mean hospital stay was 17.7 days (ranged 5–129 days). Early (in-hospital) mortality

*Corresponding author at: Department of General Thoracic Surgery, Assaf Harofeh Medical Center, Zerifin 70300, Israel. Tel.: +972 8 977-9822; fax: +972 83 977-8149, Emails: michaelp@asaf.health.gov.il, fredricag@asaf.health.gov.il

occurred in 2.4% (one patient after bilobectomy), late (six months) mortality in 4.9% (two patients after right pneumonectomy and bilobectomy), and overall morbidity in 58.5% (24 patients). Postoperative complications included: bronchopleural fistula (BPF) with empyema – three patients, empyema without BPF – five patients, air leak – eight patients, atrial fibrillation – eight patients, pneumonia – eight patients, and lobar atelectasis – four patients.

Conclusion

Following neoadjuvant therapy for stage IIIA NSCLC, pneumonectomy can be performed with low early and late mortality (0% and 5.8%, respectively), bilobectomy is a high risk operation (16.7% early and 16.7% late mortality); and lobectomy a low risk operation (0% early and late mortality). The need for major pulmonary resections should not be a reason to exclude patients from a potentially curative procedure if it can be performed with acceptable morbidity and mortality rates at an experienced medical centre.

Keywords

Lung cancer surgery • Thoracotomy • Pneumonectomy • Lobectomy • Chemoradiation
• Chemotherapy

Introduction

Locally advanced non-small-cell lung cancer (NSCLC) is a heterogeneous group including stages IIB, IIIA and IIIB disease. Surgery as the initial therapy is recommended for patients with resectable T3, N1 or T3-4, N0-1 disease (T4 due to satellite lesion/s within the same lobe/lung). The optimal treatment for stage IIIA NSCLC remains controversial, but neoadjuvant preoperative therapy, chemotherapy or chemoradiation have been increasingly used to downstage tumours and render them resectable, and in the case of N2 disease to eradicate lymph node metastasis in the mediastinum [1]. There is a statistically confirmed survival benefit from neoadjuvant chemotherapy followed by surgery compared with surgery alone [1,2], with most patients achieving a complete pathologic response [3], while pneumonectomy may carry a high and possibly unacceptable rate of perioperative morbidity [4]. In our study, we retrospectively reviewed the early (in-hospital) and late (six months) mortality, overall morbidity (major/minor), hospital stay and outcome of patients that underwent major pulmonary resections after neoadjuvant therapy (chemotherapy, chemoradiation or radiation only) in patients with locally advanced stage IIIA NSCLC.

Materials and Methods

Patient Population

We conducted a retrospective analysis of all patients with locally advanced stage IIIA NSCLC who were operated on from October 2009 through February 2014 and treated with neoadjuvant chemotherapy or chemoradiation without radiologic disease progression, followed by major pulmonary resections/extended resections at Assaf Harofeh and Edith Wolfson Medical Centers. The median age at time of surgery was 68.5 years for 31 men (range, 57-82 years) and 58.2 years for 10 women (range, 37-74 years) and 38 patients (90.2%) were smokers. Data were collected from the clinical charts, operating and pathology reports and follow-up was complete in all patients. The following baseline variables

were studied: demographics, comorbidities, induction therapy, tumour size, location and pathology, side and type of surgery, histological type, and postoperative outcome including complications, morbidity, mortality and hospital stay.

The Assaf Harofeh Institutional Review Board approved this study and given the retrospective nature of this study, permission was given for a waiver of patient consent.

Type of Induction Therapy and Surgery

During this time period (4.5 years), 41 patients with potentially resectable clinically staged IIIA NSCLC underwent neoadjuvant therapy (chemotherapy, chemoradiation or radiation only) followed by surgery.

Pneumonectomy was performed in 17 patients (completion pneumonectomy in two patients) and 24 patients underwent lobectomy (18 patients) and bilobectomy (six patients), 11 with extended resection of different thoracic structures. Treatment regimens were applied according to different treatment protocols in the two institutions: 28 patients were treated at Edith Wolfson Medical Center and 13 patients at Assaf Harofeh Medical Center. Neo-adjuvant therapy that was performed at Edith Wolfson Medical Center in 28 patients consisted of neoadjuvant chemotherapy in 20 patients, neoadjuvant chemoradiation in seven patients and radiotherapy in one patient with schizophrenia. At Assaf Harofeh Medical Center, the treatment regimen consisted generally of neoadjuvant chemoradiation: 12 patients and chemotherapy in one patient, after previous oesophagectomy due to second primary carcinoma. Twenty-three patients were operated on at Edith Wolfson Medical Center (8 pneumonectomies, 4 bilobectomies, 11 lobectomies) and 18 patients at Assaf Harofeh Medical Center (nine pneumonectomies, two bilobectomies, seven lobectomies).

Tumour Classification

Tumours were classified and staged preoperatively and postoperatively according to the 1997 International System for staging of lung cancer [5] before the treatment and restaged after treatment before admission to surgery. The Naruke map was used to indicate lymph node locations during surgery.

Download English Version:

<https://daneshyari.com/en/article/2918269>

Download Persian Version:

<https://daneshyari.com/article/2918269>

[Daneshyari.com](https://daneshyari.com)