

Changing trends in the distribution of the histologic types of lung cancer: a review of 4,439 cases

Mary Wahbah, MD, Nahal Boroumand, MD, Claudia Castro, MD,
Faten El-Zeky, PhD, Mahmoud Eltorky, MD, PhD*

Division of Anatomic Pathology, Department of Pathology and Laboratory Medicine, University of Texas Medical Branch, Galveston, TX 77555-0588, USA

Abstract

Lung cancer is the second most common cancer and the leading cause of cancer death in both men and women. The purpose of the study is to explore the distribution of the 4 major histologic types of lung carcinoma and the incidence of lung cancer with reference to all other sites of cancer. The clinical and histopathologic data of 4,439 patients with lung carcinoma between January 1980 and December 2003 were reviewed. Adenocarcinoma has become the most frequent histologic type in men and women (36.8% and 46.5%, respectively), followed by squamous cell carcinoma (31.6% and 25.4%, respectively). The incidence of large cell (undifferentiated) carcinoma in men and women is 18.0% and 9.9%, respectively. The incidence of small cell carcinoma in men and women is 13.7% and 18.3%, respectively. In addition, analysis of our data indicates that lung cancer rate is decreasing, relative to all other primary cancer sites. The results of this study suggest that the incidence of lung cancer has decreased in comparison with other sources of cancer in southern Texas. This observation is consistent with the current national trends. In addition, there are significant changes in the distribution of the major histologic types of lung cancer. The results of this study may portend important changes in the selection of targeted therapy and patient management.

© 2007 Elsevier Inc. All rights reserved.

Keywords:

Lung cancer; Squamous cell carcinoma; Small cell carcinoma; Adenocarcinoma; Large cell carcinoma; Trends; Histologic types

1. Introduction

Lung cancer is the second most common cancer and the leading cause of cancer death in both men and women in the United States. According to the American Cancer Society, in the year 2004, there were approximately 173,770 new cases of lung cancer (93,110 among men and 80,660 among women). Lung cancer-related deaths in 2004 totaled an estimated 160,440 cases (91,930 among men and 68,510 among women). Over the last few years, these rates appear to have decreased, especially among men and, to a lesser extent, among women [1–9].

The incidence of all 4 major histologic types of lung cancer has also changed significantly over the last few years [6–8,10]. The 4 major histologic types of lung cancer include adenocarcinoma, squamous cell carcinoma, small cell carcinoma, and large cell (undifferentiated) carcinoma, which, in aggregate, account for approximately 99% of all cases of primary lung cancer [11].

Our observation of the changing trends in the distribution of the major histologic types of lung cancer over the last several years and the recent reports of the decline in lung cancer incidence prompted our intensive clinical, histopathologic, and statistical review of lung cancer cases between 1980 and 2003 in southern Texas. The data will be compared with those of our previous study of the midsouthern region of the United States, which derived from a review of 4,928 lung cancer cases from 1964 to 1985 [12]. The results of this study illustrate the need for careful analysis of lung cancer data and its contribution to

This work was presented in abstract form at the ASCP 2005 Annual Meeting in Seattle, Wash.

* Corresponding author. Tel.: +1 409 772 0614; fax: +1 409 747 0060.

E-mail address: maeltork@utmb.edu (F. Eltorky).

Table 1
Relative increase in lung cancer compared with all other types of cancer

Year	Total no. of cancer cases	No. of lung cancer cases (% of total)
1980	963	171 (17.8)
1981	978	219 (22.4)
1982	1,022	192 (18.8)
1983	1,139	205 (18.0)
1984	1,135	214 (18.9)
1985	1,176	222 (18.9)
1986	1,037	188 (18.1)
1987	1,091	202 (18.5)
1988	978	147 (15.0)
1989	936	174 (18.6)
1990	1,021	165 (16.2)
1991	1,121	183 (16.3)
1992	1,242	214 (17.2)
1993	1,286	213 (16.6)
1994	1,341	206 (15.4)
1995	1,454	213 (14.6)
1996	1,395	233 (16.7)
1997	1,501	234 (15.6)
1998	1,464	220 (15.0)
1999	1,338	175 (13.1)
2000	1,364	190 (13.9)
2001	1,343	189 (14.1)
2002	1,493	209 (14.0)
2003	1,455	197 (13.5)

understanding the etiology of the different types of lung cancer and may portend important changes in the selection of targeted therapy and patient management.

Table 2
Changes in histologic types of lung cancer, 1980 through 2003

Accession year	Adenocarcinoma			Large cell			Small cell			Squamous cell			Total no.
	No.	%	Mean age (y)	No.	%	Mean age (y)	No.	%	Mean age (y)	No.	%	Mean age (y)	
1980	48	28.92	60	15	9.04	53	38	22.89	56	65	39.16	61	166
1981	60	29.70	61	16	7.92	52	42	20.79	65	84	41.58	63	202
1982	51	27.27	58	27	14.44	60	34	18.18	60	75	40.11	63	187
1983	60	30.46	60	13	6.60	56	49	24.87	58	75	38.07	60	197
1984	54	25.84	60	21	10.05	57	52	24.88	57	82	39.23	60	209
1985	68	31.34	58	29	13.36	54	42	19.35	56	78	35.94	62	217
1986	49	27.53	58	19	10.67	57	34	19.10	60	76	42.70	61	178
1987	69	35.75	59	19	9.84	58	35	18.13	60	70	36.27	60	193
1988	53	37.86	60	7	5.00	59	26	18.57	61	54	38.57	63	140
1989	68	41.46	62	11	6.71	52	35	21.34	59	50	30.49	60	164
1990	59	38.82	58	18	11.84	56	25	16.45	59	50	32.89	59	152
1991	67	39.64	59	14	8.28	59	27	15.98	60	61	36.09	61	169
1992	84	43.08	59	17	8.72	59	36	18.46	62	58	29.74	64	195
1993	67	33.50	57	16	8.00	54	46	23.00	60	71	35.50	63	200
1994	71	36.41	55	25	12.82	56	38	19.49	60	61	31.28	63	195
1995	77	39.29	57	26	13.27	58	38	19.39	57	55	28.06	60	196
1996	72	33.80	58	18	8.45	54	52	24.41	58	71	33.33	60	213
1997	78	35.94	56	40	18.43	57	30	13.82	59	69	31.80	61	217
1998	85	42.29	60	24	11.94	54	36	17.91	77	56	27.86	62	201
1999	56	36.60	57	27	17.65	61	20	13.07	61	50	32.68	59	153
2000	53	34.87	61	14	9.21	58	28	18.42	59	57	37.50	59	152
2001	72	44.17	57	17	10.43	61	29	17.79	60	45	27.61	63	163
2002	79	41.58	60	21	11.05	63	34	17.89	60	56	29.47	61	190
2003	76	40.43	58	28	14.89	59	29	15.43	61	55	29.26	62	188

2. Materials and methods

The University of Texas Medical Branch in Galveston, Texas, is the oldest of the 4 health science centers in the University of Texas system. The University of Texas Medical Branch has approximately 800 beds, serves approximately 220 counties in southern Texas, and offers comprehensive medical, surgical, rehabilitative, subspecialty, pathologic, therapeutic, and consultative services for adult patients. Over the 24 years covered by this study, the total number of patient admissions has been relatively stable.

This institution provided data for a large number of patients with lung cancer, and 4,439 patients met the criteria for inclusion in our study. Each of these patients was diagnosed with a primary lung carcinoma and was listed in the hospital tumor registry between 1980 and 2003. The diagnosis in each case was proven by histopathologic study of surgical specimens, cytologic preparations, biopsy, or autopsy material, and for each patient, the lung was documented as the only site of tumor. Pathologists who rendered the diagnosis throughout the epoch of the study are a core of academic surgical pathologists who used histologic criteria set forth by nationally recognized organizations and actively participated in routine departmental intraobserver quality assurance practices. The 4 major histologic types of lung cancer included in this study, and the criteria used to diagnose each, are based on the 2004 World Health Organization classification [11,13]. In addition, new or improved methods of diagnosis (special stains, immunohistochemical studies) were used to further delineate those

Download English Version:

<https://daneshyari.com/en/article/4130327>

Download Persian Version:

<https://daneshyari.com/article/4130327>

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