Short Term Survival with Testicular Cancer and Hodgkin's Disease

Report of a Cancer Survival Registration System and Mortality Abstracts for Short Term Survival with Testicular Cancer and Hodgkin's Lymphoma

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The Centralized Cancer Patient Data Systems (CCPDS) was a registration system for patients with malignant neoplasms defined as reportable by the Comprehensive Cancer Centers in the United States. The System was developed as required by one of the ten characteristics defined by the National Cancer Advisory Board for designation of Comprehensive Cancer Centers. CCPDS data items and code definitions were made largely compatible with those in the World Health Organization Handbook For Standardized Cancer Registration published in 1976, and the National Cancer Institute Surveillance, Epidemiology, and End Results (SEER) program. The 21 participating Comprehensive Cancer Centers (see Table I) began data collection for CCPDS with patients first admitted after July 1, 1977. CCPDS data were forwarded to the Statistical Analysis and Quality Control (SAQC) Center at the Fred Hutchinson Cancer Research Center, Seattle, Washington under the direction of SAQC Center Project Head, Polly Feigl, PhD, with whose permission I have derived the data to the right (see Table I).

The CCPDS has released results from survival study of cancer patients admitted to their programs between July 1, 1977 and December, 1982.[1] The patients under surveillance included a total of 248,866 of which only the "new" patients are described here, the 155,195 who were admitted to the participating cancer centers within 30 days of their initial diagnosis of cancer and prior to receiving specific treatment elsewhere. These patients came from all of the contiguous 48 United States with representation concentrated from major metropolitan areas, especially where the participating cancer centers were located. The new patient disease categories included 22,495 lung cancer cases, 14.5% of the total; 19,298 breast cancer cases, 12.4%; 9,525 uterine cervical cancer, 6.1%; 9,055 colon, 5.8%; 8,981 prostate, 5.8%; 8,124 buccal cavity and pharynx, 5.2%; 6,728 non-Hodgkin's lymphoma, 4.3%; and fewer cases of the other 30 primary sites listed.

TABLE I
List of Comprehensive Cancer Centers

Comprehensive Cancer Center, University of Alabama in Birmingham
Colorado Regional Cancer Center, Inc.
Comprehensive Cancer Center, Duke University Medical Center
Fred Hutchinson Cancer Research Center
Georgetown/Howard Universities Comprehensive Cancer Center
Illinois Cancer Council
Johns Hopkins Oncology Center
Kenneth Norris, Jr. Cancer Research Institute, University of Southern California Comprehensive Cancer Center
Mayo Comprehensive Cancer Center
Comprehensive Cancer Center for the State of Florida
The University of Texas Health System Cancer Center, M.D. Anderson Hospital and Tumor Institute
Ohio State University Comprehensive Cancer Center
Roswell Park Memorial Institute
Dana-Farber Cancer Institute
Memorial Sloan-Kettering Cancer Center
UCLA Jonsson Comprehensive Cancer Center
University of Wisconsin Clinical Cancer Center
Yale University Comprehensive Cancer Center
Comprehensive Cancer Center of Metropolitan Detroit
Columbia University Cancer Research Center
Fox Chase/University of Pennsylvania Comprehensive Cancer Center

The report of CCPDS survival data is a 590-page volume dated December, 1985 and includes data for follow-up periods of no more than 5 years, and shorter periods for the cases admitted later during the enrollment. These initial survival data for CCPDS are interesting but of limited usefulness for insurance underwriting. In some categories, the numbers of deaths are so small as to reduce significance. Also, although some of the patients were self-referred and many had only Stage I or even in-situ

disease, it seems plausible to expect a bias in the direction of worst cases appearing at a cancer treatment center in lieu of local physicians and community hospitals. A positive value of these data pertains to the consistency with which microscopic confirmation was documented, the standardization of data elements for the study records, and the consensus concerning staging criteria. It also seems likely that the treatment rendered was "State of the Art", as these cancer centers are academically associated and tend to pioneer in the application of advanced treatment modalities and surgical interventions. Thus, if technological advances in treatment are improving survivability, one might expect to see it in these results early.

In 1986, oncologist Michael Baker, M.D. reported to the 95th annual meeting of ALIMDA that "one of the most exciting developments in modern oncology" has been the change in prognosis for testicular carcinoma, particularly referring to seminomas as curable in a high proportion of cases.[2] Table II shows the comparative mortality for cancer of the testis by histologic type from the CCPDS report for all ages and all stages of disease. Of the 1,539 cases, 480 were seminoma, affording 1,646 person-years of exposure for this group of men with a median age of 36 years. There were 33 seminoma patient deaths giving an annual average mortality rate of .0201, and a mortality ratio of 954% of expected mortality based on 1982 United States population mortality rates.

TABLE II
Cancer of Testis, Comparative Mortality — By Histologic Type, All Stages, All Ages, 0-5 Years from Diagnosis

	N	E	d	d′	Mort. Ratio	Avg. Ann. Mort. Rate	Est. 5 yr: Surv. Rate	Est. 5 yr: Surv. Index	EDR
Seminoma (Median age=36)	480	1646	33	3.46	954%	.0201	.9035	91.3%	18
Embryonal (27)	442	1516	62	2.58	2403%	.0411	.8107	81.8%	39
Teratoma (26)	452	1550	60	2.48	2419%	.0387	.8209	82.8%	37
Choriocarcinoma (26)	133	456	37	0.73	5069%	.0811	.6552	65.6%	79
Other (47)	32	110	11	0.58	1897%	.1000	.5905	60.6%	95

N = Number of cases
E = Exposure, person-years
d = Actual deaths
d′ = Expected deaths, based on 1982 U.S. population mortality rate
EDR = Excess Death Rate

In Table III, the cases are limited to stage I (localized disease) all ages. Most of the seminomas, 319 of the 480 cases,were admitted at stage I, giving 1,094 person-years of exposure. In this group, the mortality ratio was 274%, for an estimated 97.28% 5 year survival with a median age of 35 years.

TABLE III
Cancer of Testis, Comparative Mortality by Histologic Type, Limited to Stage I (Localized) Disease, All Ages, 0-5 Years from Diagnosis

	N	E	d	d′	Mort. Ratio	Avg. Ann. Mort. Rate	Est. 5 yr: Surv. Rate	Est. 5 yr: Surv. Index	EDR
Seminoma (Median age=35)	319	1094	6	2.19	274%	.0055	.9728	98.3%	3.5
Embryonal (27)	106	364	4	0.62	645%	.0110	.9462	95.4%	9.3
Teratoma (27)	156	535	6	0.91	659%	.0112	.9452	95.3%	9.5
Choriocarcinoma (26)	28	96	1	0.15	667%	.0104	.9491	95.7%	8.9
Other (51)	15	51	3	0.41	732%	.0588	.7386	76.9%	50.8

N = Number of cases
E = Exposure, person-years
d = Actual deaths
d′ = Expected deaths, based on 1982 U.S. population mortality rate
EDR = Excess Death Rate

Another tumor which has been the target of impressive improvement in clinical treatment, also noted by Dr. Baker in his presentation in 1986, is Hodgkin's lymphoma.[2] Table IV shows comparative mortality from CCPDS ror Hodgkin's lymphoma by stage, histologic type and all ages. These 1,943 cases afforded 7,096 person-years of exposure and demonstrated mortality ratios in excess of 3,000%. Table V demonstrates the experience with the same group comparing histologic types for all ages, all stages. Although the traditionally cited advantage for lymphoid predominant Hodgkin's is noted, the mortality ratios are very high.[3]

TABLE IV
Hodgkin's Lymphoma, Comparative Mortality by Stage, All Types, All Ages, 0-5 Years from Diagnosis

	N	E	d	d′	Mort. Ratio	Avg. Ann. Mort. Rate	Est. 5 yr: Surv. Rate	Est. 5 yr: Surv. Index	EDR
STAGE I (Median age=33)	325	1167	50	1.63	3050%	.0428	.8036	80.9%	41
STAGE II (29)	577	2014	83	2.42	3450%	.0412	.8103	81.5%	40
STAGE III (32)	564	2092	129	2.72	4750%	.0617	.7273	73.6%	60
STAGE IV (36)	326	1275	112	2.04	5500%	.0878	.6316	63.7%	86
Other (32)	151	548	27	0.71	3800%	.0493	.7766	78.6%	48

N = Number of cases
E = Exposure, person-years
d = Actual deaths
d′ = Expected deaths, based on 1982 U.S. population mortality rate
EDR = Excess Death Rate

TABLE V
Hodgkin's Lymphoma, Comparative Mortality — By Histologic Type, All Ages, All Stages, 0-5 Years from Diagnosis

	N	E	d	d′	Mort. Ratio	Avg. Ann. Mort. Rate	Est. 5 yr: Surv. Rate	Est. 5 yr: Surv. Index	EDR
Nodular Sclerosing (Median age=28)	1174	4262	191	5.11	3750%	.0448	.7952	7.70%	44
Lymphoid Depleted (47)	63	229	36	0.96	3750%	.1572	.4252	43.4%	153
Mixed Cellular (39)	445	1615	117	3.07	3800%	.0724	.6868	69.3%	71
Lymphoid Predominant (36)	113	410	12	0.66	1800%	.0293	.8618	86.9%	28
Hodgkins Not Specified (34)	148	537	45	0.75	6000%	.0838	.6456	65.0%	82

N = Number of cases
E = Exposure, person-years
d = Actual deaths
d′ = Expected deaths, based on 1982 U.S. population mortality rate
EDR = Excess Death Rate

The CCPDS is apparently doomed to extinction because the National Cancer Institute (NCI) withdrew funding for the project. Local participants felt that this might have been because of an NCI impression that the data duplicated SEER data to a considerable extent, and that NCI felt there was "little interest in the result"! I have written to Dr. Vincent DeVita, Director of NCI, to be certain he is disavowed of this latter (rumored) impression, if true. As insurance medicine specialists we need just such projects and perhaps our interest in such information needs to be reiterated to such agencies.

References

1. Kealey, K.A. (editor) *Survival Rates for U.S. Comprehensive Cancer Center Patients, Admissions 1977-1982,* Centralized Cancer Patient Data System Statistical Analysis and Quality Control Center, Seattle, Dec. 1985.
2. Baker, M.A. Determining Prognosis for Cancer Patients, *Transactions of A.L.I.M.D.A. Ninety-fifth Annual Meeting,* 70: 19-26, 1986.
3. Wiernink, P.H., Hodgkin's Disease, in *Clinical Medicine,* Vol. 5 edited by John O. Spittell, Jr., Harper & Row, Philadelphia, 1986.