August 2018

1984 Annual Report: Cancer Program

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We dedicate this report to Sandy Petersdorff and the other staff in Computer Services. Sandy has been the liaison to the Cancer Registry for several years and her enthusiasm and support have been greatly appreciated. We also wish to acknowledge the people in her department for their assistance with our computerized registry.
CANCER PROGRAM ACTIVITY REPORT

During 1984 there has been continued growth and development of cancer care at St. Luke's Hospital. The Cancer Committee has provided a forum for critical review of these changes in diagnostic approach, treatment facilities, research, education and rehabilitation.

The Cancer Committee has encouraged widespread use of the TNM staging system in the hospital and has developed a staging work sheet to facilitate this critical component of patient management. A mechanism to assess the quality of cancer care in our hospital has been introduced. This will initially evaluate the management of breast cancer and pancreatic cancer but with further experience its scope will be increased to include all malignancies. This year the hospital began participation in a National Cancer Institute sponsored Pattern of Care Study, designed to define the quantity and quality of cancer care in community-based facilities across the US.

The number of patients diagnosed with cancer per year at St. Luke's Hospital remains high. New cases identified in 1983 represented nearly 6% of all cases reported in the state. Each year the Cancer Registry has monitored cancer patient statistics and has prepared comprehensive reports. This year's report includes an in-depth study of prostatic cancer, and involves 50 patients. The study highlights well-known characteristics of this common disease. The disease frequency increases with age, and management is often complicated by the coexistence of cardiovascular and degenerative diseases. No exogenous etiologic factors could be identified. The diagnosis was established by biopsy in all patients and clinical studies allowed staging and grading classification in almost all patients. Although a significant proportion of patients had limited extent disease at diagnosis, radical prostatectomy was not utilized. Radiation therapy was delivered in one-fifth of the patients. The majority were managed with palliative surgery and hormonal manipulation. Treatment was associated with a low rate of complications. Half of the patients in the long-term study are alive and one-quarter are free of signs of their disease. This analysis of prostatic cancer at St. Luke's Hospital can serve as a basis for future treatment planning and study.

We have enjoyed a year of rapid expansion in our ability to care for patients with cancer. A high energy radiation therapy unit has been added, inpatient oncology facilities have been expanded and improvements have continued in rehabilitation, support services, pharmacy and diagnostic capabilities. This has attracted additional surgical, medical and radiation oncologists to the program who together have facilitated delivery of the highest quality of cancer care to all our patients. We look forward to further expansion of activities in the year ahead.

Ronald D. Hart, M.D.
Chairman, Cancer Committee
1983 NEW CANCER CASES AT ST. LUKE'S

| Site                              | Male | Female | | Male | Female |
|-----------------------------------|------|--------||------|--------|
| Lung                              | 115  | 45     | 28 (3%) | Leukemia | 21     | 7     |
| Breast                            | 1    | 99     | 28 (3%) | Bladder  | 21     | 7     |
| Skin                              | 44   | 44     | 25 (3%) | Kidney   | 16     | 9     |
| Colon                             | 51   | 32     | 24 (3%) | Stomach  | 15     | 9     |
| Prostate                          | 58   | ---    | 19 (2%) | Larynx   | 17     | 2     |
| Rectum                            | 22   | 15     | 181 (21%) | Other Sites | 861     | TOTAL |
| Unknown Primary                   | 13   | 17     |         |         |         |       |

1983 NEW CANCER CASES IN WISCONSIN

| Site                               | Male | Female | | Male | Female |
|------------------------------------|------|--------||------|--------|
| Breast                             | 2,187 | 1,958 | (14%) | Trachea, Bronchus, Lung | 1,735 | 1,617 | (11%) | Colon |
| Colon                              | 1,617 | 1,735 | (11%) | Prostate | 735 | 725 | (5%) | Urinary Bladder |
| Urinary Bladder                    | 735  | 725    | (5%) | Rectum, Rectosigmoid Junction, and Anus |
| Rectum, Rectosigmoid Junction, and Anus | 725 | 735 | (5%) | Other Sites |
| Cervix Uteri                       | 698  | 657    | (5%) | Cervix Uteri | 557 | 575 | (4%) | Corpus Uteri |
| Corpus Uteri                       | 557  | 575    | (4%) | Other Sites |
| Other Sites                        | 5,114 | 5,151 | (32%) | Other Sites | 15,326 | TOTAL CASES REPORTED |

*As of 7/25/84.
Information from Wisconsin Bureau of Health Statistics.
A long and short-term study of cancer of the prostate was conducted by St. Luke's Hospital Cancer Registry as part of a nation-wide study by the American College of Surgeons. The goal of the long-term study was to compare the frequency of occurrence and survival of prostate cancer patients. A total of 25 patients diagnosed here in 1978 had their records abstracted for this study.

Likewise, 25 patient records were abstracted for the short-term study. Patients diagnosed in 1983 were included in the short-term study. The main purpose of the short-term study was to compare the patterns of diagnosis and treatment for prostate cancer patients.

According to national statistics from the American Cancer Society, there are approximately 73,000 new prostate cancer cases diagnosed each year. Cancer of the prostate is one of the most common cancers in men over the age of 50 and the third leading cause of male deaths from cancer, with the median age being 70 years old.
SYMPTOMS

Since cancer of the prostate is a relatively slow-growing cancer, it may not be detected until other diseases bring the patient in to seek medical assistance. Six of the 25 patients in the short-term study had admission diagnoses that were not related to cancer of the prostate. Nineteen of the 25 patients in the short-term study presented with some symptoms of cancer of the prostate. The most common symptom was frequent micturition, 44% of the patients presented with this symptom. Other common symptoms included hesitancy, decrease in stream, and complete retention. Least common symptoms included hematuria, urinary pain, weight loss, and bone pain.

DIAGNOSTIC LAB TESTS AND X-RAYS

Of the lab tests and x-rays done to aid in establishing a diagnosis in the long and short-term studies, both had 100% compliance with chest x-rays being done. In both studies, 8% had positive findings on the chest x-ray. There was also a 24% increase in the ordering of acid phosphatase at work-up between 1978 and 1983.

COMPARISON: LAB VALUES

<table>
<thead>
<tr>
<th></th>
<th>Acid Phosphatase</th>
<th>Alkaline Phosphatase</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Done</td>
<td>60%</td>
<td>84%</td>
</tr>
<tr>
<td>% Normal</td>
<td>44%</td>
<td>56%</td>
</tr>
<tr>
<td>% Elevated</td>
<td>16%</td>
<td>28%</td>
</tr>
</tbody>
</table>

5
STAGE AT THE TIME OF DIAGNOSIS

Staging of prostate cancer has traditionally been on a clinical basis, usually not considering lymph node involvement or the histopathologic grade of the cancer. Although, only about half of all nodules palpable by rectal exam are cancerous, 85% of all prostate cancers start in the posterior lobe of the prostate which is within easy reach during the rectal exam. Staging by the American Urologic system is an A-B-C-D system that has been adapted to the TNM (T-primary tumor; N-nodal involvement; M-distant metastases) system. The following diagram and clinical staging system will explain staging as it was applied to this study.

(Diagram from Clinical Oncology: A Multidisciplinary Approach.)
Stage A-1  Microscopic focus of well-differentiated adenocarcinoma in 3 or less foci of the prostate specimen. Negative rectal exam, acid phosphatase normal, normal bone scan
AJCC Stage  T1a, NO, MO

Stage A-2  Tumor not well differentiated or greater than 3 foci of tumor
Negative rectal exam, acid phosphatase normal, negative bone scan
AJCC Stage  T1b, NO, MO

Stage B-1  Nodule equal to or greater than 1.5 to 2 centimeters on rectal exam
Acid phosphatase normal, normal bone scan
AJCC Stage  T2a, NO, MO

Stage B-2  Diffuse involvement of the gland but no capsular extension on rectal examination.
Acid phosphatase normal, normal bone scan
AJCC Stage  T2b, NO, MO

Stage C-1  No involvement of seminal vesicles, less than 70 grams
Acid phosphatase normal or elevated, normal bone scan
AJCC Stage  T3a, NO, MO

Stage C-2  More than 70 grams, or involving the bladder neck, trigone, or seminal vesicles.
Acid phosphatase normal or elevated, normal bone scan
AJCC Stage  T3b, NO, MO or T4, NO, MO

Stage D-1  Primary of any size with metastases to pelvic lymph nodes below the aortic bifurcation
Acid phosphatase normal or elevated, normal bone scan
AJCC Stage  Any T, N1-2, MO

Stage D-2  Any size of primary with lymph node metastases above the aortic bifurcation or other soft tissue metastases or bone metastases
Acid phosphatase normal or elevated, normal or positive bone scan
AJCC Stage  Any T, Any N, M1
In the long-term study, 5 patients had Stage A-1 disease and 4 had A-2 for a total of 9 patients with occult-incidental disease. A total of 11 patients had Stage B disease with 2 of these substaged as B-2. One patient had Stage C-2 disease, and 4 patients had distant disease with 3 of the 4 patients having metastases to bone. One patient had lymph node involvement besides bone metastases. One patient had metastases to the lungs.

The short-term study is comparable to the long-term study in terms of staging. Eleven patients had Stage A-1 disease, 1 had B-1, 6 had B-2, 1 had C-1 and 6 had D-2. All patients having Stage D-2 disease had metastases to the bone.

**HISTOPATHOLOGY**

Cancer of the prostate is almost always an adenocarcinoma, which supports our data for both the long-term and the short-term studies. In both the long-term and short-term studies, 24 of the 25 cases were adenocarcinomas and one was listed as carcinoma, not otherwise specified.

The traditional grading of well, moderately, and poorly differentiated has been shown to correlate with the patients' survival and the metastatic potential of the cancer. We found a substantial difference between the long-term study and the short-term study concerning differentiation. The majority of patients in the long-term group had well differentiated tumors, whereas most in the short-term group had moderately or poorly differentiated cancers.

**PATHOLOGICAL DIFFERENTIATION**

<table>
<thead>
<tr>
<th></th>
<th>Well Diff.</th>
<th>Mod. Diff.</th>
<th>Poor Diff.</th>
<th>Not Graded</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978:</td>
<td>19</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>1983:</td>
<td>8</td>
<td>11</td>
<td>6</td>
<td>0</td>
<td>25</td>
</tr>
</tbody>
</table>
We were able to collect the Gleason score on most patients in the 1983 study, but since this system was not in use in earlier years there were no Gleason scores available from the 1978 study. The Gleason score considers the grade of the tumor along with the growth pattern of the cancer in relationship to the prostate gland.

This system assigns a histologic grade to the primary pattern of the cancer and to the secondary pattern of the cancer. These two scores are then added together to obtain the Gleason score. If there is no secondary pattern, the two primary pattern scores are added together to determine the Gleason score. The Gleason score can range from 2-10, the higher the Gleason score, the worse the prognosis.

The most common Gleason score, where reported, was 6, with scores ranging from 2-7. In three cases, there was no Gleason score obtainable due to the nature of the specimen, and in one case a biopsy of the bone established the diagnosis and no tissue from the prostate was obtained.
MODES OF DIAGNOSIS

The most common mode of diagnosis in both the long-term and short-term studies was a TURP (transurethral resection of the prostate). Some patients had more than one mode of diagnosis such as a TURP and a clinical diagnosis by rectal exam or TURP and a needle biopsy. Other modes of diagnosis included a needle biopsy of the pubic bone and lumbosacral laminectomy.

# OF EACH TYPE OF DIAGNOSIS
The most common mode of treatment in both the long and short-term studies was a TURP. Hormones have been used fairly constantly in both studies with the difference being an increase in the dosage in the short-term study (1983) to 2 and 3 milligrams of DES as compared to 1 milligram dosages in the long-term study (1978).

<table>
<thead>
<tr>
<th>TREATMENT</th>
<th>1978</th>
<th>1983</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSURETHRAL RESECTION OF PROSTATE (TURP)</td>
<td>6 (24%)</td>
<td>11 (44%)</td>
</tr>
<tr>
<td>TURP AND HORMONES</td>
<td>8 (32%)</td>
<td>6 (24%)</td>
</tr>
<tr>
<td>TURP AND RADIATION</td>
<td>5 (20%)</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>HORMONES ONLY</td>
<td>2 (8%)</td>
<td>1 (4%)</td>
</tr>
<tr>
<td>RADIATION ONLY</td>
<td>1 (4%)</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>OTHER</td>
<td>3 (12%)</td>
<td>3 (12%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>25 (100%)</strong></td>
<td><strong>25 (100%)</strong></td>
</tr>
</tbody>
</table>
COMPLICATIONS: SHORT-TERM STUDY (1983)

Complications were very few, occurring in 4 patients in the short-term study. Complications included:

2 patients with urinary complications
1 patient with non-cardiac related chest pain and increased abdominal discomfort
1 patient with cardiac complications

All complications were resolved by the time of discharge.
Data regarding complications was not collected in the long-term study.

LENGTH OF STAY: SHORT-TERM STUDY (1983)

The overall length of stay in the short-term study varied widely from a 2-day stay up to a 20-day stay. The average overall length of stay was 10.5 days. If the lengths of stay for patients admitted for a diagnosis unrelated to cancer are eliminated from the average length of stay, the average length of stay goes down almost a full day to 9.6 days. Stage did not appear to influence length of stay.

SURVIVAL STATUS: LONG-TERM STUDY (1978 DIAGNOSES)

At the time of this study, 1984, 12 of the 25 patients were alive; 6 of these patients had evidence of disease and 6 patients were free of disease. Of the 6 patients who were alive with no evidence of disease, 4 patients had Stage A disease and 2 had Stage B disease. Thirteen patients had died, 8 with evidence of disease, 2 with no evidence of disease, and 3 with an unknown cancer status at the time of death. Of the patients that had died with disease, 5 had Stage B disease, 2 had Stage D disease, and one had Stage A disease. Of the two patients that are dead with no evidence of disease, one patient had Stage B disease and the other patient had Stage D disease.
REFERENCES

American Cancer Society, Massachusetts Division: Cancer Manual, Boston, American Cancer Society. 1982. Pages 244-250.

