Aurora Health Care

Aurora Health Care Digital Repository

Aurora St. Luke's Medical Center Books, Documents, and Pamphlets

August 2018


Aurora Health Care

Follow this and additional works at: https://digitalrepository.aurorahealthcare.org/aslmc_books

This Document is brought to you for free and open access by the Aurora St. Luke's Medical Center at Aurora Health Care Digital Repository. It has been accepted for inclusion in Aurora St. Luke's Medical Center Books, Documents, and Pamphlets by an authorized administrator of Aurora Health Care Digital Repository. For more information, please contact aurora.libraries@aurora.org.
Cancer Committee Members

Henry M. Alba, M.D.  
Physical Medicine & Rehabilitation

William Annesley, M.D.  
Urology

Carmela A. Barr, M.D.  
Gynecology

James R. Barton, M.D.  
Otolaryngology

John W. Bowman, M.D.  
Surgery

Aileen E. Denny, M.D.  
Oncology

John P. Hanson, Jr., M.D.  
Oncology

Ronald D. Hart, M.D.  
Oncology

Gary L. Kamer, M.D.  
Family Practice

Stanley A. Korducki, M.D.  
Gynecology

Howard J. Lewis, M.D.  
Radiation Oncology

Paul W. Loewenstein, M.D.  
Plastic Surgery

James P. Mazzulla, M.D.  
Internal Medicine

Jorge Pellegrini, M.D.  
Pathology

Marcia J.S. Richards, M.D., Chairperson  
Radiation Oncology

Terence V. Roth, M.D.  
Surgery

Robert F. Taylor, M.D.  
Oncology

Elaine M. Thomas, M.D.  
Pediatrics

Alfred Anderson  
Data Registry

Jacob Assa  
Manager, Cardiovascular Data Registry

Kathy Bielinski  
Cancer Registrar, Medical Records

Mike Farina  
Pharmacist

Greg Fecteau  
Director, Oncology Services

Vicki George  
Vice President

Frank Kalivoda  
Vice President

Angela Klimaszewski  
Patient Care Manager

Grace McCutcheon  
Social Services

Kathy Radomski  
Supervisor, Medical Records

Joanne Ziarek  
Pharmacist
# Table of Contents

- **Introduction** .................................................. 1

- **New Developments** ........................................... 2
  - VNA Community Hospice ...................................... 2
  - Autologous Bone Marrow Transplantation / GM-CSF ...... 3
  - New Linear Accelerator in Radiation Oncology ........ 4
  - Dry Mouth Center ............................................ 5

- **Care and Treatment for Gynecologic Cancer** ............ 6
  - Introduction ................................................... 6
  - Prevention of Pelvic Cancer ................................ 7
  - Early Detection .............................................. 10
  - MRI on Gynecologic and Pelvic Tumors .................... 12
  - Gynecologic Oncology Surgery ............................. 13
  - Radiation Treatment in Gynecologic Cancer ............ 14
  - Systemic Treatment of Gynecologic Malignancy ......... 16
  - Gynecologic Oncology Nursing ............................ 17
  - Oncology Social Work ...................................... 18

- **Cancer of the Ovary - Long and Short Term Study** .... 19

- **Cancer Screening Programs** ................................ 22
  - Head and Neck Screening .................................. 22
  - Prostate Screening ......................................... 23

- **Special Studies** ............................................. 24
  - Cancer Detection in the Emergency Department ......... 24
  - Myelodysplastic Syndrome .................................. 26

- **Cancer Registry Report** .................................... 29

- **St. Luke's Medical Center Cancer Research** ............ 31

- **St. Luke's Medical Center Cancer Conferences** ....... 35

- **Glossary** ..................................................... 36

- **References** ................................................... 36
As Chairperson of the Cancer Committee, I find myself continuously amazed at the growth of our old programs and the development of new programs in Oncology at St. Luke's Medical Center. This growth has come because of a unique productive association of the medical staff, hospital administration, and community, which together has provided the knowledge, financial resources, and motivation to assure continued progress.

Our relationship with the Vince Lombardi Golf Classic continues to financially help support basic research, community education, and prevention and detection efforts. The Cancer Information Hotline, physician newsletter, and screening and early detection programs in numerous areas are but a portion to which they contribute. Security Savings and Loan funds also assist with physician education.

Each year our medical staff, with its expertise, adds new clinical services and investigational therapies for our patients, which are detailed later in this report. The community, medical staff, and patients have recognized their advances, and we find ourselves providing Oncology Services to a larger portion of our community.

These efforts require a dedicated and motivated team of people too numerous to mention. It is to them that credit should be given, some of whom regularly receive recognition and many who serve more quietly.

Indeed, together we had an exciting and productive year in which many lives were affected in a positive and often life giving manner. Lastly, the patients and their families provide us each day with the last element for success - motivation to achieve even greater goals.

Marcia J.S. Richards, M.D.
Chairperson
VNA Community Hospice

VNA Community Hospice, a program of the Visiting Nurse Association, is continuing to provide Hospice care to patients and families in the greater Milwaukee Area. Established in conjunction with St. Luke's Medical Center in November, 1989, the program has served over 200 patients. As required of a Medicare-Certified Hospice, well over 90% of this care has been provided in the client's home. The remaining 10% has been provided inpatient at St. Luke's Methodist Manor, or one of the additional inpatient contract facilities.

Hospice is primarily a concept of care rather than a specific place. The main focus of this care is symptom management in a setting that is warm and supportive. Hospice is now nationally recognized as an alternative to traditional hospital care for patients who are no longer receiving treatment for cure of their disease.

The VNA Hospice Team is specially trained to help the terminally ill patient and family through the crisis period of death and bereavement. Team members are available 24 hours a day, 7 days a week. The team consists of physicians, nurses, counselors, chaplain, social workers, therapists, aides, volunteers, the patient and family. The patient's plan of care is reviewed on a bi-weekly basis with continual direction by the patient's primary physician.

For more information regarding the Hospice Concept of Care, contact Jackie Burdick, R.N., Manager, or Ann Patterson, R.N., Hospice Coordinator, at 327-2295.

Jackie Burdick, R.N.
VNA Community Hospice

Aileen Denny, M.D.
Medical Director
Autologous bone marrow transplantation / reinfusion (ABMR) is increasingly utilized as treatment for certain patients with Hodgkin's and non-Hodgkin's lymphoma, some leukemias, and solid tumors such as breast cancer, who have failed conventional therapy but have chemosensitive tumors. ABMR takes advantage of the dose-response curve of chemotherapeutic agents and allows for the delivery of otherwise marrow toxic doses of therapy, which are given in an attempt to produce long term remission, and potentially “cure” patients with refractory disease.

Patient accrual for ABMR at St. Luke's Medical Center began in March, 1990. Active protocols include ABMR for the treatment of patients with Hodgkin's and non-Hodgkin's lymphoma and early recurrent breast cancer. Also, patients in remission can have their marrow or stem cells collected and stored for later use should their disease recur. Eight patients have been treated since March, three patients with Hodgkin's lymphoma and five patients with non-Hodgkin's lymphoma. Accrual to the protocol for early recurrent breast cancer began in October. To date one patient has been enrolled.

Some patients undergoing ABMR therapy at St. Luke’s will be eligible to participate in a Sandoz/Schering study of GM-CSF versus placebo following autologous bone marrow reconstitution for lymphoma. It is possible that GM-CSF (granulocyte-macrophage colony stimulating factor) may shorten the period of neutropenia following ABMR and might lessen the morbidity associated with this therapy by decreasing the number of days at risk for infection.

For more information about the ABMR Program please contact Dr. Robert Taylor (414) 672-1982, ABMR Program Director, or Kathy Oldham, R.N. (414) 649-6540, ABMR Program Coordinator.

Kathy Oldham, R.N.
ABMR Program
Robert Taylor, M.D.
Oncology
New Linear Accelerator In Radiation Oncology

The third linear accelerator for St. Luke's Medical Center was installed and provides our Radiation Oncology Department with a variety of treatment options. This Varian 2100C accelerator delivers 6 MeV and 8 MeV photon energies for treating both superficial and deep tumors, and a selection of five electron energies for treating lesions close to the skin's surface. This unit provides for unique clinical requirements, allowing independent collimator motion, high dose rate electron beam therapy, and an extended travel range of the patient support system.

The major advantage over our current linear accelerators is the increased computerization of the 2100C. In the future, this ability will offer the possibility for computerized control of complex radiation treatments, an approach called dynamic therapy. In this approach, the size of the treatment field, angle of the treatment beam, and position of the patient support system are controlled by a computer linked to the linear accelerator.

More conventional computerization is provided by the radiotherapy management system which will be utilized for data entry, as well as for recording and verifying patient treatment. This system will provide centralization of all patient treatment data, which will increase the accuracy and reliability of treatment delivery.

We look forward to continued growth and expansion of services in the Radiation Oncology Department as part of the overall cancer program at St. Luke's Medical Center.

Philomena Whitton, B.S., R.T.T.
Radiation Oncology
Dry mouth or xerostomia is a very common condition. Although it is not life threatening, it produces numerous symptoms and a diminished quality of life. Before the development of the Salitron System, there was no effective treatment.

Approximately 4 million people in the United States suffer from xerostomia associated with Sjogren's Syndrome or other autoimmune conditions. An equal number of patients will develop a dry mouth from one of the other causes, such as head and neck irradiation or use of certain medications.

Patients who suffer from xerostomia have a variety of problems, including difficulty swallowing, difficulty talking, altered taste, secondary dental caries or loss of teeth, burning of the tongue or throat, or poor sleeping. These patients require frequent sips of water to have some temporary relief. Because there is no effective treatment, the patients often withdraw from an active life to one of seclusion and misery.

Earlier this year the Radiation Oncology Section, St. Luke's Medical Center, was granted exclusive use of the Salitron by the developer, Biosonics Inc., for southeastern Wisconsin. This is a device that produces a low voltage, pulsed electrical stimulus. When regularly applied to the tongue and palate, like a lollipop in the mouth, it can stimulate the salivary glands to increase saliva. Experience indicates about 75% of Sjogren's patients experience significant relief of dry mouth and secondary problems. The FDA has approved the use of the Salitron System for xerostomia secondary to Sjogren's Syndrome. This is a medical breakthrough for both its effectiveness in reducing dry mouth and because there are no reported side effects.

The Salitron is not yet approved for treatment of xerostomia from non-Sjogren's causes, but these patients can be treated on a multi-institutional protocol approved by St. Luke's Medical Center's Institutional Review Board.

James Bruckman, M.D.
Radiation Oncology
Care and Treatment of Gynecologic Cancer

Introduction

The role of the obstetrician-gynecologist is traditionally perceived as a physician who provides primary and specialized care for women in the reproductive period of their lives especially in regards to childbearing, contraception and gynecological disorders. However, a very important facet of our role is the surveillance for breast and gynecological cancers. In both pre-menopausal and post-menopausal women, the gynecological exam which includes breast and pelvic exams and pap smear is a crucial and essential screen for breast, cervical, uterine and ovarian cancers.

According to the National Cancer Institute's data, in 1990 an estimated 29% of all female cancers are breast cancers, 9% are uterine and cervical cancers and 4% are ovarian cancers. These statistics do not include pre-cancerous conditions known as carcinoma-in-situ. For example, 50,000 cases of carcinoma-in-situ of the cervix are diagnosed annually. In 1990 it is estimated that there will be 150,000 new cases of breast cancer, 13,500 cases of cervical cancer, 33,000 cases of uterine cancer and 20,500 cases of ovarian cancer.

Physicians are employing both standard screening and new diagnostic and therapeutic methods to detect and treat these cancers which will be discussed in the following articles of this annual report. Most importantly, the lay public needs to be aware of the importance of the basic gynecological exam and its role in detecting cancer in women. Women may neglect to have exams on a regular basis if they are not motivated by reasons such as pregnancy, contraception or hormone replacement in the menopause. Together with our patients as partners in good health care, we envision an important need for education, surveillance and treatment of breast and genital tract cancers. By working together, the medical and public community can favorably impact upon the health of women through early detection and thereby improved outcomes.

Carmela A. Barr, M.D.
Gynecology, Chief
Carcinoma of the Cervix
The reduction of the incidence of cervical cancer is directly related to papanicolaou smear testing. It has decreased from 25/100,000 women in 1945 to 10/100,000 in 1985. It could be reduced further with increased compliance and wider use of annual pelvic exams and pap smears.
It has been stressed that annual pap smear testing can reduce a woman's chance of dying from cervical cancer from 4/1,000 to 5/10,000; a 90% difference. The purpose of screening should be to identify preinvasive disease early when the treatment modality is less invasive. Sexually active women of all ages are susceptible to preinvasive disease.
The development of cervical cancer is related to the multiple "insults" the cervix sustains. It is not seen in the celibate population. There is a correlation between cervical cancer and coitus at an early age, multiple sexual partners, smoking, and the Human Papilloma Virus (HPV).
The association of HPV-16 and HPV-18 and cervical cancer is very strong. It is likely that the virus requires co-factors to induce cancer. Prevention of HPV infections may reduce the incidence of cervical cancer. Early lesions are often identified by the Pap smear.

Endometrial Cancer
Endometrial cancer is the most common invasive neoplasm of the female genital tract. There are 40,000 new cases per year.
Characteristics associated with increased incidence of the disease are:
- Obesity - Enhanced conversion of androstenedione to estrogen in fat cells results in an unopposed estrogen environment
- Anovulatory Cycle - Oligoamenorrhea
- Unopposed Estrogen Replacement Therapy
- Family History of Disease
- Low Parity

Prevention of obesity and unopposed estrogen stimulation is important in the prevention of Adenomatous Hyperplasia and Endometrial Cancer.

The identification of young women with oligoamenorrhea and correction of this with progesterone may decrease the incidence of cancer.
Prevention of Pelvic Cancer
(continued)

"The risk of Squamous Cervical Cancer was increased 3.9 times for women with Papanicolaou smears at three year intervals compared with women with annual screening."

* Kirk Shy et. al., Pap Smear Screening Interval Obstetrics & Gynecology, Vol. 74, No. 6, 12/89

Ovarian Cancer

The prevention of ovarian cancer is not within our grasp. There are 12,000 deaths per year from this disease. It appears that the risk of ovarian cancer increased in industrialized nations, among women of low parity, with a strong family history of ovarian, endometrial or breast cancer.

It has been documented that the use of the oral contraceptive pill may reduce the incidence of ovarian cancer. This may be due to the decrease of the "trauma of ovulation" which could be a co-factor for the disease process.

Women with known risk factors may benefit from ultrasound screening, CA 125 levels, as well as annual pelvic exams.

Julie O'Reilly, M.D.
Gynecology

Comment On The Rates In Corpus Uteri

The St. Luke's survival rates are probably somewhat lower than the national average since many patients with early disease are treated with surgery alone. During the period from 1979 to 1984, the amount of gynecological surgery done primarily at St. Luke's was less than what it is at this time. Consequently, many of the patients who were seen in our institution were those who had more advanced disease requiring combined treatment or medically inoperable or not eligible for optimal treatment. This would adversely affect the survival rates with a lower overall survival, although when reviewed stage for stage, the result would be essentially similar.

Marcia J.S. Richards, M.D.
1989 Cancer of Corpus Uteri
42 Patients

Age of patients at diagnosis

Corpus Uteri First Course of Treatment

Corpus Uteri - All Stages
Survival Rates 5yrs

- From Cancer Facts & Figures, 1989
American Cancer Society
Based on cases diagnosed in 1979-1984
Early Detection Of Gynecologic Cancer

Screening tests ideally are easy to perform, inexpensive, painfree, and reliable. Presently, none of these apply 100% to endometrial cancer (cancer of the uterine lining) or ovarian cancer. Therefore, it is recommended that gynecologists select patients at higher risk for developing these cancers and perform screening tests on this higher-risk group.

Endometrial cancer, like most cancers, can be treated very successfully if it is found early. Thirty thousand American women per year will develop endometrial cancer. Three fourths of these patients will present as Stage I (early) disease. Unfortunately, 3,000 women per year will die from endometrial cancer. This cancer affects menopausal women predominantly. The most common sign of its presence is bleeding. Therefore, every menopausal woman who bleeds must be evaluated by her doctor as soon as possible. Her physician will probably perform a hysteroscopy (looking inside the uterus through the cervical canal with a narrow tube) and/or a D & C. These are minor outpatient operations. But, what of screening? A targeted high-risk patient population to evaluate before the sign of potential cancer develops would be a woman who is menopausal, obese; perhaps diabetic or hypertensive, and a woman who had a prior history of menstrual irregularities, specifically infrequent and irregular menstruation. The best screening test would be an office endometrial biopsy or aspiration with a suction instrument. This test is mildly uncomfortable; it is moderately expensive; it does take training to perform, and it is reasonably reliable. As you can see, it is not an ideal screening test, but in a selected population it can be very valuable.

Ovarian cancer screening is an even more difficult issue. Twenty-one thousand women in America will develop ovarian cancer per year. Twelve thousand women will die. Unfortunately, three-fourths of the new cases of ovarian cancer per year present at an advanced class (Stage III). Detailed ultrasound through the vagina of the ovaries and a blood test named CA-125 have been recommended as screening tests. The ultrasound is quite expensive to perform, and the blood test is very imprecise. It has been suggested that these two screening tests be performed on women at high risk for developing ovarian cancer. This sub-group of women have a history of two first degree relatives with ovarian cancer (mother, sister). It has been estimated that women with this history have as much as a 50% chance of developing the disease, whereas women without a family history have only a 1 in 70 risk. Women with this history as well should have pelvic examinations every four to six months from age 20 on. Some physicians even recommend prophylactically removing the ovaries at age 35 to 40 when childbearing has been completed.

Samuel Craft, M.D.
Gynecology
1989 Cancer of Ovary
10 Patients

Age of patients at diagnosis

Stage of patients at diagnosis

Ovary First Course of Treatment

Ovary - All Stages
Survival Rates 5yrs

* From Cancer Facts & Figures, 1989
American Cancer Society
Based on cases diagnosed in 1979-1984
Magnetic Resonance Imaging (MRI) of the pelvic region offers several distinct advantages for the diagnosis and staging of pelvic malignancies. The examination is safe with no ionizing radiation and usually no need for intravenous contrast media. The imaging technique allows direct images in multiple scanning planes for improved diagnosis and treatment planning. Magnetic Resonance images clearly provide excellent soft tissue contrast, allowing the ability to separate tumor from normal issues more clearly than other imaging modalities. Extension to adjacent structures and previously unvisualized lymph drainage area is allowed by this unique imaging modality.

At this time, the MRI role in oncology is primarily that of staging the extent of tumor size and spread for the proper selection and application of treatment, whether surgery, radio-, chemo-, or immunotherapy, and subsequent monitoring of tumor response. The non-invasive nature of the examination and lack of ionizing radiation allow safe follow-up examination at no additional risk or discomfort to the patient. There are selected roles for detection of occult lesions not visualized by other techniques.

Unfortunately, screening applications are limited by the current relatively high cost. As clinical experience increases and further technologic developments unfold, the combined uses of Magnetic Resonance Imaging with other cross-sectional imaging modalities will allow extremely accurate three-dimensional radiotherapy treatment planning and delineate the role of this exciting new modality in screening and early detection protocols for both male and female pelvic malignancy.

Michael Kehoe, M.D.
Radiology
Surgery has long been a mainstay in the management of women with various reproductive tract cancers. Historically, many of the techniques that are done today were handed down from surgeons of the early part of the 20th century. There have been modifications made in some of the techniques, but many still remain quite similar to our predecessors.

Specifically in treating women with cancers of the cervix, lesions that are localized to the cervix alone may be treated with radical hysterectomy and bilateral pelvic lymphadenectomy. In this procedure some of the normal as well as all of the abnormal tissue needs to be taken. Because of this there is an increased risk of having injury to either the urinary or gastrointestional systems. Our techniques, however, have come a long way in preventing much of the morbidity from this surgery. A benefit for a young woman with a cervical cancer who would choose to have a surgical approach for her cancer of the cervix would be the preservation of the ovaries. Certainly, since for early stage lesions the cure rate is the same for surgery or radiation therapy, arguments can be made for either, and often it comes down to physician and patient preference.

In treating endometrial cancer, historically a hysterectomy, bilateral salpingo-oophorectomy has been the mainstay of treatment. Since most of these cancers are early staged, i.e. confined to the uterus at the time of their presentations, the cure rates are extremely good. Oftentimes no adjuvant therapy is needed for them. However, our studies have now indicated that there are certain women at increased risk for recurrent disease and that after the surgery is completed, radiation therapy may be of some benefit in decreasing the likelihood of recurrent disease for them.

Finally, in ovarian cancer the concept of hysterectomy, bilateral oophorectomy, and tumor debulking has long been written in the GYN literature. Within the past fifteen years great strides have been taken to better define how aggressive a surgeon is at the time he is confronted with an ovarian malignancy. Literature now shows us that if we are able to decrease the tumor burden down to a size of less than 2 cm for any individual tumor nodule, then the chances that chemotherapy will be effective is much better. Oftentimes, however, a more palliative surgery needs to be undertaken to establish first a diagnosis of an ovarian cancer and then second to try to make the patient more comfortable. Newer techniques, for example laparoscopic surgery and laser surgery in GYN oncology, are just now starting to be examined in clinical trials. Their benefit still awaits further time and operator experience.

Elmer G. Lehman, M.D.
Gynecology
Gynecologic or female tract cancers, taken as a group, are annually responsible for an estimated 25,000 cancer deaths in the United States. Although early detection of cervical cancer by pap smear has reduced the incidence of invasive cervical carcinoma by 50% in the last several decades, GYN cancer ranks 4th among cancer deaths in women today. Since most women with gynecologic cancer die of disease in the abdomen and pelvis, local and regional control of cancer is a paramount issue in this disease. This is the reason why radiation therapy has and currently still assumes an important role in the treatment of GYN cancer.

Radiotherapy of gynecologic cancer can be utilized alone or in combination with surgery; and radiation therapy can be delivered by linear accelerators (teletherapy or external beam) and/or radioactive material (implants or brachytherapy). If the therapy is the only modality, external beam plus implants are needed to achieve a high enough local dose to achieve a cure. The advantage of using an implant is that one can deliver a high dose locally to the tumor while relatively sparing the surrounding normal tissue. Combined with surgery, the total dose required is reduced. Hence external beam or implant alone may be sufficient.

Radiotherapy is most commonly used in cervical and endometrial carcinoma. In the cervix, radiation therapy is the treatment of choice in tumors that have invaded the parametrial (Stage II-B or higher) and is an option of treatment with early stage tumors as well. A course of external beam radiation therapy followed by two implants is usually used. In endometrial carcinoma, radiotherapy is often used after a hysterectomy for patients at high risk for local recurrence; usually external beam is delivered followed by an intracavitary insertion with ovoids to the vaginal cuff. Vaginal carcinoma is often treated by radiotherapy alone due to its location and external beam plus implants are again needed. In ovarian carcinoma, since the abdomen is the primary mode of spread, whole abdominal radiation therapy is an option after primary surgery debulking and also after a positive second look surgery, after chemotherapy. Excision of local vulva carcinoma followed by radiotherapy is an alternative to a radical vulvectomy in lymph node dissection.

Radiotherapy has been used for gynecologic cancer for over seven decades. Progressive technical advances and clinical studies have allowed us to maximize therapeutic potential of radiation therapy while minimizing its late effects; customized blocking, changing patient position to reduce small bowel volume, and decreasing brachytherapy dose rates to the incidence of bladder and rectal complication rates. Future, chemotherapy and hyperthermia combined with radiation therapy will be the subject of more intensive studies. Much has and more will be learned to continue the therapeutic potential of this modality.

William J. Pao, M.D.
Radiation Oncology
1989 Cancer of Cervix Uteri
22 Patients

Age of patients at diagnosis

Stage of patients at diagnosis

Cervix Uteri First Course of Treatment

Cervix Uteri - All Stages
Survival Rates 5yrs

* From Cancer Facts & Figures, 1989
American Cancer Society
Based on cases diagnosed in 1979-1984
Systemic Treatment Of Gynecologic Malignancy

Endometrial cancer represents 13% of all malignancies in women; ovarian tumors, 6%; uterine cervix tumors 6%; and other reproductive tract tumors 2-3%. For those patients who present with advanced or recurrent gynecologic cancer, systemic treatment with hormones and chemotherapy has a significant role.

For epithelial carcinomas of the ovary, a large number of cytotoxic agents have been shown to be active. Dramatic improvement in frequency of response has been noted with the use of cisplatin-based combination chemotherapy as compared to single alkylating agents. Studies with the new platinum analogue carboplatin have shown equal efficacy in response rates with significantly less toxicity. More recent studies have evaluated alternative pathways to employ the platinum compounds with higher dose schedules or intraperitoneal administration. None has been shown to be superior to a combination of a platinum compound plus an alkylating agent with or without doxorubicin. The role of hormone therapy in ovarian carcinoma is limited and responses have been of short duration.

In endometrial carcinoma, progestins and doxorubicin are the most active agents. Tamoxifen, cisplatin, carboplatin, 5-FU, and hexamethylmelamine appear to have moderate activity. No combination to date has been shown to be superior to single agents.

For squamous cell carcinoma of the cervix, cisplatin has been shown to be the most active agent. Its use is frequently limited in these patients because of associated renal compromise due to obstructive uropathy. While a number of other agents have shown moderate activity, no combination has been shown to be superior to single agent cisplatin. Hormonal therapy has not shown any activity in cervical cancer.

There are many new approaches currently being investigated including high dose chemotherapy with autologous bone marrow transportation for ovarian carcinoma, monoclonal antibodies, and the different types of biologic response modifiers such as alpha and gamma interferon, interleukin II, and activated natural “killer” lymphocytes. These therapies are still considered investigative.

Gerald J. Kallas, M.D.
Oncology
The goal of inpatient gynecological nursing care is to promote the maximal health for the woman and her family. On 5GHJK the focus of nursing is on integrating the psychological, medical and surgical principles into the plan of care. The nursing process provides a dynamic framework for the planning, implementing and evaluation of the care of the patient undergoing surgical intervention for gynecological cancer.

The nursing care is based on an assessment of the woman's health and may include:

1. Assisting women to reach postoperative milestones.
2. Providing anticipatory guidance and emotional support related to alterations in body image, self-concept, reproductive status and sexual functioning.
3. Providing health education on changes in the hormonal environment: relief of menopausal symptoms, preservation of bone mass, prevention of cardiovascular disease, improvement in one's sense of well-being, and prevention of sexual and urinary problems.
4. Providing adequate pain management. The nursing staff works closely with the physician, family and other members of the health care team to insure comprehensive, coordinated health care.

Patients who require inpatient nursing care for chemotherapy and for brachytherapy are generally hospitalized on the inpatient oncology unit. The nursing care of those women who receive chemotherapy is focused on monitoring for side effects and managing the side effects identified. Patients are provided with numerous resources to enable the woman to become knowledgeable about her treatment and how best she can help herself manage her side effects.

Care of the gynecological patient requiring a radiation implant has two main concerns: safety for the patient and pain management. The care of the woman with a gynecological malignancy addresses the multiple concerns of these patients.

Kerry Twite, R.N.
Oncology Nursing

Gynecologic Oncology Nursing

Nursing goals are to promote maximal health for women and their families.
Lynette Gagnon, Women’s Health Program Coordinator, counsels a family.
Oncology Social Work

Cancer is a family experience. It almost always affects emotional, material, and social resources, as well as the physiological. The Oncology and Women's Health Center Social Workers are aware of this. They specialize in assisting the woman who has cancer, and her family, cope with the multitude of problems that can accompany diagnosis and treatment. They work with patients in the context of the woman's many roles in the family: spouse, caregiver of both children and elders (often simultaneously), and in the work place, as well as an individual and a patient.

The social worker will help the woman from outpatient care and decision-making through hospitalization, discharge planning and follow-up, with differential referral to appropriate resources in the community as well as the health care system.

Continuity of care and self-determination for the patient are emphasized throughout this process.

Grace McCutcheon
Social Services
Cancer Of The Ovary -
Long And Short Term Study
American College Of Surgeons

St. Luke's participated in this national study in 1989. One of the
purposes of this study is to document changes in diagnostic and clinical
management of ovarian cancer in the United States. We compared data
from 1988, to five years ago, 1983. Successive cases were chosen
starting with January of each year, 7 patients in 1983, 10 patients in
1988. All patients were diagnosed at St. Luke's and for the most part
received their first course of therapy here. All cases were required to
have a positive microscopic histology. Following are some of the more
interesting comparisons.

What are the ages of the patients?

<table>
<thead>
<tr>
<th></th>
<th>40-49</th>
<th>50-59</th>
<th>60-69</th>
<th>70-79</th>
<th>80-89</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1988</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

Number of Patients

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>Pts.</td>
<td>%</td>
<td>Pts.</td>
</tr>
<tr>
<td>Family history of cancer</td>
<td></td>
<td>29%</td>
<td>2</td>
<td>30%</td>
<td>3</td>
</tr>
<tr>
<td>Patient history of cancer</td>
<td></td>
<td>0%</td>
<td></td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Normal term deliveries</td>
<td></td>
<td>71%</td>
<td>5</td>
<td>50%</td>
<td>5</td>
</tr>
<tr>
<td>Abortions</td>
<td></td>
<td>0%</td>
<td></td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Cystic, serous, mucinous histologies</td>
<td></td>
<td>57%</td>
<td>4</td>
<td>30%</td>
<td>3</td>
</tr>
<tr>
<td>Adenocarcinomas</td>
<td></td>
<td>20%</td>
<td>2</td>
<td>40%</td>
<td>4</td>
</tr>
<tr>
<td>Ascites present at diagnosis</td>
<td></td>
<td>71%</td>
<td>5</td>
<td>70%</td>
<td>7</td>
</tr>
<tr>
<td>Symptoms at diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal swelling/bloating</td>
<td></td>
<td>57%</td>
<td>4</td>
<td>60%</td>
<td>6</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td></td>
<td>71%</td>
<td>5</td>
<td>50%</td>
<td>5</td>
</tr>
<tr>
<td>Weight gain</td>
<td></td>
<td>14%</td>
<td>1</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Constipation</td>
<td></td>
<td>43%</td>
<td>3</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Self-palpation of abdominal mass</td>
<td></td>
<td>14%</td>
<td>1</td>
<td>20%</td>
<td>2</td>
</tr>
<tr>
<td>Diarrhea</td>
<td></td>
<td>14%</td>
<td>1</td>
<td>20%</td>
<td>2</td>
</tr>
<tr>
<td>Abnormal vaginal bleeding</td>
<td></td>
<td>0%</td>
<td></td>
<td>30%</td>
<td>3</td>
</tr>
<tr>
<td>Tests done at diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal ultrasound</td>
<td></td>
<td>57%</td>
<td>4</td>
<td>30%</td>
<td>3</td>
</tr>
<tr>
<td>Barium enema</td>
<td></td>
<td>29%</td>
<td>2</td>
<td>40%</td>
<td>4</td>
</tr>
<tr>
<td>CT scan of abdomen</td>
<td></td>
<td>57%</td>
<td>4</td>
<td>60%</td>
<td>6</td>
</tr>
<tr>
<td>CT scan of pelvis</td>
<td></td>
<td>43%</td>
<td>3</td>
<td>50%</td>
<td>5</td>
</tr>
<tr>
<td>Upper gastrointestinal series</td>
<td></td>
<td>43%</td>
<td>3</td>
<td>20%</td>
<td>2</td>
</tr>
<tr>
<td>Proctoscopy</td>
<td></td>
<td>29%</td>
<td>2</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Intravenous pyelogram</td>
<td></td>
<td>43%</td>
<td>3</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Tumor markers done</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFP</td>
<td></td>
<td>14%</td>
<td>1</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>CA125</td>
<td></td>
<td>0%</td>
<td></td>
<td>60%</td>
<td>6</td>
</tr>
<tr>
<td>CEA</td>
<td></td>
<td>29%</td>
<td>2</td>
<td>20%</td>
<td>2</td>
</tr>
<tr>
<td>HCG</td>
<td></td>
<td>14%</td>
<td>1</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td>57%</td>
<td>4</td>
<td>30%</td>
<td>3</td>
</tr>
<tr>
<td>Recurrence</td>
<td></td>
<td>14%</td>
<td>1</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Never disease free</td>
<td></td>
<td>57%</td>
<td>4</td>
<td>80%</td>
<td>8</td>
</tr>
</tbody>
</table>

Kathy Bielinski
Cancer Registry
Long and Short Term Study
(continued)

Stage at Diagnosis

Stage Groupings

<table>
<thead>
<tr>
<th>Stage</th>
<th>T1a</th>
<th>T1b</th>
<th>T1c</th>
<th>T2a</th>
<th>T2b</th>
<th>T2c</th>
<th>T3a</th>
<th>T3b</th>
<th>T3c</th>
<th>Any T</th>
<th>Any N</th>
<th>MO</th>
<th>MO</th>
<th>MO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage IA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IIB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IIIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IIIB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IIIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage IV</td>
<td>Any T</td>
<td>Any T</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
<td>Any N</td>
</tr>
</tbody>
</table>

1983

1988
Survival Curve

Note: The survival rate of our patients has improved even though we are treating more patients with advanced stage of disease.

First Course of Treatment

Number of Patients

<table>
<thead>
<tr>
<th>Treatment</th>
<th>1983</th>
<th>1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biopsy only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery &amp; Chemo</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cancer Screening Programs

Head And Neck Screening Program

The total number of newly diagnosed cases of head and neck cancer in the United States is estimated at around 67,000. This represents about 5% of all new cancer cases in the United States.

Head and neck cancers seem to be associated with some known high-risk factors, smoking, alcohol use and use of smokeless tobacco. A screening program whose target population would encompass the high-risk groups might be effective in preventing head and neck cancer.

In January of 1990 a Head and Neck Cancer Screening Program was implemented at St. Luke's Medical Center. Thorough assessment and careful inspection of the oral and oropharyngeal were performed. An indirect laryngeal exam was also conducted during the screening. Following the screening, Vince Lombardi Cancer Clinic and Diagnostic and Treatment Center nurses, along with the clinical nurse specialists, conducted counseling and educational sessions for those screened. Information about stop smoking classes, cancer-related information and risk factor identification was made available.

To date, the program has screened 347 persons. Sixty percent of those screened had a previous family history of cancer; 25% of people screened were presently smokers, with an additional 12% who quit in the past year. Fifteen percent could be considered to have a moderate intake of alcohol.

Many people were found to have leukoplakia on the vocal cords, pharynx or oral cavity. All of the people were smokers! A recommendation to stop smoking was made along with a six (6) month follow-up screening. Appropriate referral and follow-up were recommended.

The Head & Neck Screening program needs to continue. Follow-up for those people already screened at high risk needs to be done. A goal of the future is to screen only those people who have significant risk factors.

This screening program is feasible, as well as useful, to our community. Through early detection, we hope to see morbidity of head and neck cancer minimized, survival rates increased and through prevention, incidence decreased.

Susan Nuccio, R.N., M.S.N.
Clinical Nurse Specialist
James R. Barton, M.D.
Otolaryngology
Prostate Cancer Awareness Week was held nationally during the week of September 16-21, 1990. The Section of Urology of St. Luke’s Medical Center participated in the prostate screening program seeing patients in the Diagnostic and Treatment Center with the cooperation of the nursing personnel there. Not only did the urologists of the section donate their time the nursing service did likewise. Together we were able to see 234 men during this period of time. After the men filled out questionnaires and they were processed by the Diagnostic and Treatment Center personnel the urologist examined the patient and did digital rectal examinations.

Of the 234 men who participated 52 men were found to have an abnormal examination which is approximately 22% of those examined. These men were referred to their private physicians, local urologists, or given the name of the urologist of our section. The majority of the men who participated in this screening program felt that the information they were given for the program was extremely useful and that they would come back for a second screening a year from this time.

We are very proud of the participation of the urologic and nursing staff in making this program successful. We look forward to continuing this participation in the future.

Barry Usow, M.D.
Urology
The growth of Emergency Medicine has been due in large part as the result of a failure of primary care."

Carl Yonkerman, M.D.,
Dean Froedtert Memorial Lutheran Hospital.

An estimated one million patients visit Emergency Departments each year in the United States. Acute chest pain of cardiac origin and acute injuries are the leading causes for these visits. Patients presenting with a myriad of complaints which ultimately result in a diagnosis of a neoplasm account for a small but significant portion of patients seen in the Emergency Department. This study was undertaken to describe the epidemiology of patients presenting to a community Emergency Department with acute problems, resulting in admission to the hospital and a diagnosis of a cancer made on discharge from the inpatient setting.

Materials and Methods
Cases were included which:
1. were newly registered in the tumor registry
2. entered the hospital through the Emergency Department and thus generated an Emergency Department record
3. had no known previous cancer or who had been free of cancer for greater than 5 years or who had a newly diagnosed primary cancer

Patient records were abstracted, data entered into a computerized spreadsheet and analyzed.

Results
One hundred and sixty-three patient records were reviewed for 1986 through six months of 1988. One hundred and thirty-one records met the case definition and were subsequently abstracted. Seventy-four of the cases were males, the mean age was 65. The crude rate of cancer patients presenting in the Emergency Department for 1986 was 58 cases for 29,460 visits. In 1987, the rate was 54 cases for 31,394 visits. And in 1988, there were 19 cases for 14,778 visits. Over the study period, there were 2,000 new cases of cancer which were entered in the tumor registry. The Emergency Department accounted for 131 of these cases, thus accounting for an estimated 5%.
Discussion
Emergency Medicine has evolved over the past 30 years to become the specialty of breath, acute care and resuscitation. In addition, the Emergency Department serves as the entry point to the health care system for individuals with urgent problems, no insurance or personal physician. The cancer patients in this study point to the problem of those patients whose neoplasms has progressed to the point where they have acute symptoms associated with them. Emergency Departments are not places in the health care systems set up for screening and early detection of cancer, yet patients present to Emergency Departments with a host of difficult and different complaints, some of which may be early signs of cancer. The authors are not advocating screening programs in the Emergency Department, but rather strong follow-up recommendations, as there were probably a number of patients who may have had early cancer problems, but were not detected in the Emergency Department. This study may also reflect a certain patient population which is particularly difficult to reach by standard educational approaches. They typically state that they "never go to doctors," or simply "hate doctors," or "hate hospitals." The poor prognosis of these patients as demonstrated in our results suggests that intensive identification of these patients would result possibly in early diagnosis of cancer.

Stephen Hargarten, M.D.
Emergency Medicine
Marcia J.S. Richards, M.D.
Radiation Oncology
Alfred Anderson
Data Registry

Cancer Detection
(continued)

| Total charts pulled - 163 |
| Total records used - 131 |
| Age Breakdown | Male | Female |
| 90+ 1889-1899 | 8 | 6 |
| 80-89 1909-1900 | 14 | 16 |
| 70-79 1919-1910 | 26 | 11 |
| 60-69 1929-1920 | 19 | 15 |
| 50-59 1939-1930 | 7 | 6 |
| 40-49 1949-1940 | 2 | 3 |
| 30-39 1959-1950 | 3 | 0 |
| 20-29 1969-1960 | 1 | 0 |
| Total ER 1986 - 29,460 |
| census 1987 - 31,394 |
| Jan 1 - June 30, 1988 - 14,778 |
| CA patients from ER 1986 - 58 |
| 1987 - 54 |
| 1988 - 19 |
| Total Female - 57 |
| Male - 74 |
Myelodysplastic Syndrome (MDS)

### Table 1: FAB Classification of MDS

<table>
<thead>
<tr>
<th>MDS Subtypes</th>
<th>Blast Cell (%)</th>
<th>Additional</th>
<th>Dyspoiesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDS I - RA</td>
<td>1</td>
<td>5</td>
<td>+</td>
</tr>
<tr>
<td>MDS II - RARS</td>
<td>1</td>
<td>5</td>
<td>± ringed sideroblasts ±15%</td>
</tr>
<tr>
<td>MDS III - RAEB</td>
<td>5</td>
<td>5-20</td>
<td>+</td>
</tr>
<tr>
<td>MDS IV - CMML</td>
<td>5</td>
<td>5-20</td>
<td>P. Monocyte + + count 1 x 10^9/L</td>
</tr>
<tr>
<td>MDS V - RAEBT</td>
<td>5</td>
<td>20-30</td>
<td>Auer rods + + regardless of the blast count</td>
</tr>
</tbody>
</table>

**Abbreviations:**
- RA - refractory anemia.
- RARS - RA with ringed sideroblasts.
- RAEB - RA with excess blasts.
- CMML - Chronic myelomonocytic leukemia.
- RAEBT - RAEB in transformation.
- Dyspoiesis:
  + mild,
  ± mild/none,
  + + moderate/severe.

The myelodysplastic syndromes (MDS) are a group of clonal hematopoietic stem cell disorders characterized by abnormal bone marrow differentiation and maturation, leading to peripheral cytopenia and high probability of eventual leukemic conversion.

**History**
A few decades ago, it was recognized that some of the patients with acute non lymphoblastic leukemia (ANLL), had a variety of pre-existing blood conditions and hematologic abnormalities preceding the onset of leukemia by months or years. These disorders have had various names in the past, such as refractory anemia, preleukemia, preleukemic anemia, preleukemic leukemia, refractory normoblastic anemia, sideroblastic anemia, smouldering leukemia, hemopoietic dysplasia, dysmegalopoietic syndrome, oligoblastic leukemia and preleukemia.

Because of the confusion with this nomenclature, in 1982, a group called the French-American-British (FAB) proposed the term a myelodysplastic syndrome or (MDS), which has been generally accepted. The classification is based on the following morphologic criteria (Table 1); (1) percentage of blast cells in the bone marrow (BM) and/or peripheral blood (PB); (2) presence of ringed sideroblasts in the BM; (3) absolute peripheral monocyte count; (4) presence of Auer rods.

Table 1 gives the current classification of refractory of myelodysplastic syndrome. It should be noted that while there is no doubt that the FAB classification was the first comprehensive attempt to set diagnostic and prognostic guidelines, there are still several problems using it.

1. This is a morphological classification, while clinical and hematological features do not always correspond to the morphological definitions.
2. Such classifications leads to subjective and not necessarily reproducible diagnosis, based on the personal skill of the person reviewing the smears.
3. The definitions are somewhat arbitrary.
4. Some people are questioning inclusion of the CMML in this.
5. The correlation between the morphology and cytogenetics or immune markers is limited.

**Clinical and Hematological Picture**
The typical patient is in his 70's. Both sexes seems to be equally affected. Common symptoms are fatigue, weakness, 30% to 80% related to the anemia, and the other symptoms include weight loss, anorexia, easy bruising, or bleeding episodes, fever, and recurrent infections. About 6% to 50% of the patients are asymptomatic and are diagnosed following abnormal blood counts, performed for unrelated reasons.
Physical examination is usually unremarkable, and may reveal pallor as the most common finding in about 60%, petechiae or purpura in the skin or mucous membranes in about 75%, splenomegaly in about 70%, hepatomegaly in about 10%, lymphadenopathy or skin nodules are found very rarely, and mostly in CMML patients. About quarter of the patients may have no physical finding.

The hallmark of the laboratory picture of MDS is anemia, and it is not wise to make a diagnosis in patients with a normal hematocrit. Anemia only is found in about 15% of the cases. About 50% present with pancytopenia, 20% with anemia and thrombocytopenia, 5% with anemia and leukopenia and less than 5% with isolated leukocytosis or monocytosis, leukopenia and thrombocytopenia.

Very rarely patients present with thrombocytosis, especially with a 5 q-syndrome. The lymphoid lineage is often affected with peripheral lymphopenia and decreased number of T-helper cells. The anemia is anemia with a reticulocyte count that is low to normal, usually normochromic, normocytic or macrocytic with a high MCV. Serum iron is normal to increased, iron binding capacity is normal to decreased, serum ferritin is high, consistent with increased iron stores in the marrow, Vitamin B12 and folic acid metabolism is usually normal. HbF levels are elevated in 80% of the patients. Erythrocytes from MDS patients occasionally have increased lysus in the sucrose hemolysis test and less frequently in the acidified serum test or the Ham's test. Erythrocyte cholinesterase activity is occasionally low. Changes in the blood group antigen expression were also described, i.e. an increase in erythrocyte i antigen and a decrease in A1 and H substances.

The abnormal laboratory features in the myelomonocytic series include low LAP score, myeloperoxidase (MPO) deficiency and increased monocyte type esterase. 20% of these patients have increased lysozyme (muramidase) activity in the blood or urine. Functional abnormalities of B, T and natural killer (NK) cells were reported.

Coagulation abnormalities may present, particularly with prolonged bleeding time, despite the platelet count being normal, due to decreased platelet function.

Cytogenetic abnormalities are detected in about 40% to 90% of patients, and in almost all patients with secondary to therapy-related MDS. The chromosomal changes may be single (simple) or multiple (complex). The common (although not specific) abnormalities are deletions of all or portions of chromosome 5 (-5, 5q-), and chromosome 7 (-7, 7q-), trisomy 8 (8+), and deletion 20 (20q-).

In summary, of the cytogenetic abnormalities, the presence of an abnormal karyotype usually indicates poor prognosis compared with a normal cytogenetic pattern. Multiple chromosomal changes often seen in secondary MDS patients is considered a poor prognostic factor.
Myelodysplastic Syndrome

Table 2: The Prognosis of MDS (2,4,6)

<table>
<thead>
<tr>
<th>MDS Subtype</th>
<th>Leukemic Conversion (%)</th>
<th>Median Survival (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RARS</td>
<td>0-10</td>
<td>60-71</td>
</tr>
<tr>
<td>RA</td>
<td>7-15</td>
<td>60-65</td>
</tr>
<tr>
<td>CMMML</td>
<td>20-30</td>
<td>8-25</td>
</tr>
<tr>
<td>RAEB</td>
<td>32-56</td>
<td>7-21</td>
</tr>
<tr>
<td>RAEBT</td>
<td>40-60</td>
<td>5-16</td>
</tr>
<tr>
<td>ALL MDS</td>
<td>22-27</td>
<td>7.5-27</td>
</tr>
</tbody>
</table>

Table 3: Prognostic Factors in MDS


In general, with exceptions (5q- syndrome and possibly monosomy 7 and secondary MDS), no specific chromosomal abnormalities have been associated with specific clinical or morphological subset, as described by the FAB criteria.

Management of MDS

Once the diagnosis of MDS has been established, the patient should be evaluated and classified according to favorable or unfavorable prognosis factors.

If the patient meets criteria for favorable prognosis, i.e. absence of the major criteria of unfavorable prognosis, then serial examinations with bone marrow is recommended. If the clinical course is stable, supportive care including red cell and platelet transfusions with antibiotic, when indicated, should be sufficient. A therapeutic trial with Pyridoxine is justified in patients with RARS. Folic acid and Vitamin B12 should be given only to patients with these deficiencies.

An unfavorable prognosis patient who is under 50 years of age, and has a compatible donor, should be offered allogenic bone marrow transplantation. Young patients with unfavorable disease who have no donor may benefit from aggressive anti-leukemic chemotherapy. Older patients with unfavorable prognosis may be offered low dose ARA-C, aggressive chemotherapy, or 13-cisretinoic acid. Danazol may be selected for thrombocytopenic patients with high platelet associated IgG, and corticosteroids may be administered to those in whom bone marrow cells show in vitro steroid sensitivity.

At the present moment, GM-CSF and G-CSF represent interesting possibilities for an MDS subgroup who have no alternative, or as an adjuvant therapy with BMT or chemotherapy. Patients who have no preferred regimen or who have failed other treatment should be offered investigational protocols, i.e. with CSFs, differentiating agents or low dose antienoplastic agents (i.e. 5-azacytidine, and Idarubicin).

Ajit Divgi, M.D.
Oncology, Hematology
The St. Luke's Medical Center Cancer Registry has been in existence since 1960, with over 15,000 total patients. In 1989, 1,216 new patients were accessioned into the registry: 1,069 analytic, 147 non-analytic.

With thoughts to the expanding uses of the registry in the future, computer software was updated during 1989. The CanSur 3.0 version released by the American College of Surgeons was implemented with the assistance of the Aurora Health Care Systems Development Department. CanSur features an expanded data set that exceeds the requirements of the Commission on Cancer. Additional fields are included for gathering special information. Changes in cancer case finding and follow-up insure that the maximum number of patients are accessioned into the registry, and the lowest possible lost to follow-up rate can be achieved. The 1989 lost to follow-up/not current rate was only 2%. Also improved were statistical reports which now analyze data in addition to listing data, including survival analysis. Questions or requests for information may be directed to 649-6720.

Kathy Bielinski
Cancer Registrar

1979 - 1989 ALL SITES DISTRIBUTED BY STAGE

In 1979, 397 patients were male, 51.8%
369 patients were female, 48.2%

In 1989, 585 patients were male, 48.1%
631 patients were female, 51.9%

Note: In site and local stages make up a large percentage of the patients diagnosed each year. Early eetion of cancer contributes significantly to long term survival.
## 1989 Morphology of Neoplasms by Frequency

<table>
<thead>
<tr>
<th>Neoplasm Type</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenocarcinomas</td>
<td>415</td>
</tr>
<tr>
<td>Papillary &amp; Squamous Cell</td>
<td>177</td>
</tr>
<tr>
<td>Ductal, Lobular, Medullary Epithelial</td>
<td>157</td>
</tr>
<tr>
<td>Basal Cell</td>
<td>111</td>
</tr>
<tr>
<td>Lymphomas</td>
<td>49</td>
</tr>
<tr>
<td>Transitional Cell Papillomas &amp; Ca</td>
<td>45</td>
</tr>
<tr>
<td>Neoplasms, Not Specified</td>
<td>34</td>
</tr>
<tr>
<td>Leukemias</td>
<td>24</td>
</tr>
<tr>
<td>Other &amp; Various Neoplasms</td>
<td>22</td>
</tr>
<tr>
<td>Gliomas</td>
<td>20</td>
</tr>
<tr>
<td>Cystic, Mucinous, Serous Plasma Cell</td>
<td>20</td>
</tr>
<tr>
<td>Melanomas</td>
<td>17</td>
</tr>
<tr>
<td>Hodgkin's Disease</td>
<td>15</td>
</tr>
<tr>
<td>Germ Cell</td>
<td>8</td>
</tr>
<tr>
<td>Complex Epithelial</td>
<td>6</td>
</tr>
<tr>
<td>Myomatous</td>
<td>5</td>
</tr>
</tbody>
</table>

## 1989 Distribution of Sites by Frequency

<table>
<thead>
<tr>
<th>Site Type</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>185</td>
</tr>
<tr>
<td>Breast</td>
<td>185</td>
</tr>
<tr>
<td>Colon, Rectum, Small Intestine</td>
<td>128</td>
</tr>
<tr>
<td>Skin</td>
<td>98</td>
</tr>
<tr>
<td>Prostate</td>
<td>48</td>
</tr>
<tr>
<td>Female Sites</td>
<td>43</td>
</tr>
<tr>
<td>Bladder</td>
<td>34</td>
</tr>
<tr>
<td>Lip, Oral Cavity, Pharynx</td>
<td>34</td>
</tr>
<tr>
<td>Hematopoetic &amp; Reticuloendothelial</td>
<td>31</td>
</tr>
<tr>
<td>Lymph Nodes</td>
<td>26</td>
</tr>
<tr>
<td>Stomach</td>
<td>23</td>
</tr>
<tr>
<td>Pancreas</td>
<td>16</td>
</tr>
<tr>
<td>Esophagus</td>
<td>16</td>
</tr>
<tr>
<td>Thyroid</td>
<td>10</td>
</tr>
<tr>
<td>Bone, Joint, Connective Tissue</td>
<td>11</td>
</tr>
<tr>
<td>Testis</td>
<td>8</td>
</tr>
<tr>
<td>Liver, Gallbladder, Bile Duct</td>
<td>7</td>
</tr>
<tr>
<td>Retropertoneal, Peritoneal</td>
<td>8</td>
</tr>
<tr>
<td>Other Sites</td>
<td>8</td>
</tr>
<tr>
<td>Eye &amp; Lacrimal</td>
<td>3</td>
</tr>
</tbody>
</table>

### Notes
- The Cancer Registry Report continues on the next page.
- The data represents the number of patients diagnosed with various types of neoplasms and at different sites in 1989.
CALGB #8361: Immunological Diagnostic Studies in Acute Myelogenous Leukemia
Dr. Hanson 12/14/84
CALGB #8393: National Intergroup Protocol Intermediate Thickness Melanomas 1.0 to 4.0 mm
Dr. Hanson 2/14/84
Photoradiation Therapy for the Treatment of Malignant Tumors
Dr. Mirhoseini 3/3/85
CALGB #8364: Immunological Diagnostic Studies in Adult ALL
Dr. Hanson 3/8/85
CALGB #8461: Cytogenetic Studies in Acute Leukemia
Dr. Hanson 12/85
CALGB #8582: A Comparison of Pentostatin and Alpha Interferon in Splenectomized Patients with Active Hairy Cell Leukemia.
Dr. Hanson 2/86
CALGB #8515: Pentostatin in Patients with Acute Hairy Cell Leukemia
Previously treated with Alpha Interferon: A Phase II Study.
Dr. Hanson 7/11/86
CALGB #8534: Combination Chemotherapy with Intensive ACE/PCE & Radiation Therapy to the Primary Tumor and Prophylactic Whole-Brain Radiation Therapy with or without Warfarin in Limited Small Cell Ca of the Lung: Phase III
Dr. Hanson 7/11/86
CALGB #8634: Chemotherapy, Radio Therapy, and Surgery for Resectable Stage III Non-Small Cell Carcinoma of the Lung (Limited Access Pilot Study)
Dr. Hanson 7/25/90
CALGB #8662: Monitoring Circulating Breast Cancer Associated Antigens with the 15-3 Radioimmunoassay in Metastatic Breast Cancer
Dr. Hanson 11-87
A Trial of Surgery Intra-operative Electron Beam and Post-operative Radiation Therapy in Limited Unresectable or Marginally Resectable Malignancies
Dr. Hanson 3/13/87
CALGB #8691: Cyclophosphamide vs Cyclophosphamide + Alpha 2 Interferon in the Treatment of Follicular Low Grade Lymphomas: Phase III
Dr. Hanson 11/87
CALGB #8362: Pharmacokinetics of ARA-C in Patients with NLL: A Dose Response Study
Dr. Hanson 7/25/90
CALGB #8642: A Master Protocol to Study Single Agent Induction Chemotherapy for Stage IV Breast Carcinoma Phase III
Dr. Richards 8/6/86
CALGB #8751: Etoposide, Vinblastine, Doxorubicin (EVA) as the Primary Treatment of Advanced Hodgkins Disease in Relapse from MOPP or MOPP Variants: Phase II
Dr. Hansel 7/11/86
CALGB #8692: Intergroup Phase III Randomized Study of Doxorubicin and Dacarbazine with or without ifosfamide and MESNA in Advanced Soft Tissue and bone Sarcoma
Dr. Hanson 8/14/87
CALGB #8763: Immunoglobulin and T-Cell Receptor Gene Rearrangement Studies in Adult ALL
Dr. Hanson 11/87
CALGB #8762: Molecular Subtypes in Philadelphia Chromosome Positive Acute Lymphoblastic Leukemia
Dr. Hanson 11/87
CALGB #8761: Prognostic Implications of the Philadelphia Chromosome Translocation in Chronic Myelogenous Leukemia
Dr. Hanson 11/87
CALGB #8711: Idarubicin, A New Analog of Daunorubicin in Acute Lymphoblastic Leukemia (ALL) at First Relapse or Following Failure of First Line Therapy - A Phase II Study
Dr. Hanson 11/87
Treatment of Malignant Gliomas with External Radiation Therapy, Chemotherapy, Resection, & Computer Assisted Stereotaxic Radioactive Implants
Dr. Bruckman 1/8/88
CALGB #8765: Analysis of Proto-Oncogene Expression in Acute Non-Lymphocytic Leukemia
Dr. Hanson 3/88
A Randomized Phase III Comparative Study of the Safety & Efficacy of Photodynamic Therapy (PDT) Utilizing PHOTOFORIN II vs. Thermal Ablation Therapy using the Nd: YAG Laser for Obstructing or Partially Obstructing Bronchogenic Carcinoma (Protocol D73 PI7)
Dr. Mirhoseini 6/88
St. Luke's Medical Center Cancer Research (continued)

A Randomized Phase III Comparative Study of the Safety & Efficacy of Radiation Therapy + Photodynamic Therapy (PDT) Utilizing PHOTOFRIN II vs. Radiation Therapy for obstructing or partially obstructing Bronchogenic Ca (Protocol D7 P18)

A Randomized Phase II Comparative Study of the Safety & Efficacy of Photodynamic Therapy (PDT) utilizing PHOTOFRIN II vs. Thermal Ablation Therapy using the Nd: YAG Laser for Partially Obstructing Esophageal Carcinoma (Protocol P73 P19)

A Randomized Phase II Comparative Study of the Safety & Efficacy of Photodynamic Therapy (PDT) utilizing PHOTOFRIN II vs. Thermal Ablation Therapy using the Nd: YAG Laser for Partially Obstructing Esophageal Carcinoma (Protocol P73 P19)

A Phase III Study of the Safety & Efficacy of Photodynamic Therapy (PDT) Photodynamic Therapy (PDT) Utilizing PHOTOFRIN II in Patients with Completely Obstructing Esophageal Carcinoma (Protocol P73 P19)

CALGB #8891: Trial of Cystectomy Alone vs. Neo-adjuvant M-VAC + CYSTECTOMY in Patients with locally Advanced Bladder Cancer

CALGB #8896: A Prospectively Randomized Trial of Low Dose Leucovorin + 5FU High Dose Leucovorin + 5FU or Observation Following Curative Resection in Selected Patients with Duke's B OR C Colon Ca

CALGB #8862: Population Pharmacodynamic Study of Amonafide

CALGB #8861: Monitoring CA 15-3 Antigen in Patients during & after Adjuvant Therapy for Stage II, Node Positive Ca of the Breast

CALGB #8869: Flow Cytometry Studies in Stage II Node Positive Breast Cancer

NSABP-20: A Clinical Trial to Determine the Worth of Chemotherapy and Tamoxifen over Tamoxifen alone in the Management of Patients with Primary Invasive Breast Ca, Negative Axillary Nodes and Estrogen Receptor Positive Tumors

CALGB #8961: RAS Mutations in Myelodysplasia

NSABP B-18: A “Unified” Trial to Compare Short Intensive Pre-Operative Systemic Adriamycin Cyclo-phosphamide Therapy with Similar Therapy Administered in Conventional Post-Operative Fashion

NSABP B-19: A Clinical Trial to Compare Sequential Methotrexate 5-Fluourouracil with conventional CMF in Primary Breast Ca Patients with Negative Nodes & Estrogen Receptor Negative Tumors

CALGB #8812: Didemnin B for Multiple Myeloma, A Phase II Study

CALGB #8837: Hyperfractionation Radiotherapy & Chemotherapy in Limited Stage Small Cell Lung Ca

CALGB #8951: Hydroxyurea + Cytosine Arabinoside for Relapsed or Refractory Non-Hodgkin's Lymphoma, A Phase II Study

CALGB #8841: Amonafide for Advanced Breast Ca, A Phase II Study

CALGB #8872: Randomized Study of Patient-Controlled Analgesia vs. Continuous IV Morphine for Severe Cancer Pain - A Limited Access Cancer Control Study
CALGB #8933: Trimetrexate for Malignant Mesothelioma: Phase II
CALGB #8991: Phase III Chemotherapy of Disseminated Advanced Stage Testicular Ca with Cisplatin + Etoposide with either Bleomycin or Ifosfamide
CALGB #8897: Phase III Comparison of Adjuvant Chemotherapy with or without Endocrine Therapy in High-Risk, Node Negative Breast Ca Patients + a natural history follow-up study in Low-Risk, Node Negative Patients
CALGB #8952: Treatment of Advanced Hodgkin’s Disease, A Randomized Phase III Trial Comparing ABVD Vs. MOPP/ABV Hybrid
NSABP B-21: A Clinical Trial to Determine the Worth of Tamoxifen & the Worth of Breast Radiation in the Management of Patients with Node-Negative Clinically Occult, Invasive breast Ca treated by Lumpectomy
Tumor Infiltrating Lymphocyte Therapy for Advanced Melanoma and Renal Renal Cancer (BRM 89-0001)
CALGB #8935: Tri-Modality Therapy for Stage IIIA (N2) Non-Small Cell Lung Ca: A Phase II Study Monoxide Intoxication
CALGB #8965: Utility of Flow Cytometric DNA Content and Reticulocyte Analysis as Progostic Indicators in Myelodysplastic Syndromes
Protocol No. STLMC BRM 890002: Alpha Interferon Pretreatment in IL-2/LAK Therapy for Advanced Ca
CALGB #8622 (Re-activated) Monitoring Circulating Breast Cancer Associated Antigens with the 15-3 Radioimmunoassay in Metastatic Breast Cancer
STLMC-BRM-90-01: IL-2/LAK Cell Therapy for Advanced Uroepithelial Cancers
CALGB #8923: GM-CSF vs. Placebo During Remission Induction and Mitoxantrone/ARA-C vs. ARA-C Intensification in Elderly Patients with Acute Myeloid Leukemia
CALGB #8966: Laboratory Studies on Frozen Tumor Tissue of Colorectal Carcinoma
Group C Protocol: Fludarabine Phosphate in Patients With Refractory Chronic Lymphocytic Leukemia
URCC 2988P: Anxiety in Chemotherapy: Methods of Control
URCC C-02: Managing Chemotherapy Side Effects
URCC 2182M: Predictor of Relapse for Women with Stage I, II, or III Breast Cancer
URCC C-01: Coping with Radiation Treatment for Prostate Cancer
Comparison of the Early Bolus and Late Bolus Stages of Contrast Enhancement in the Detection of Liver Metastases
CALGB #8971: A Dose Response Trial of Megestrol Acetate for the Treatment of Cachexia in Patients with Lung or Colorectal Cancer
CALGB #8867: A Case Registry and Biological/Pathological Evaluation of Small Cell Lung Cancer Presenting as a Solitary Pulmonary Nodule
CALGB #9061: Clinical Significance of Bcl-2 Rearrangements in Lymphoma Utilizing the Polymerase Chain Reaction

Dr. Hart 8/11/89
Dr. Hart 8/11/89
Dr. R. Hart 9/8/89
Dr. R. Hart 9/8/89
Dr. R. Hart 9/8/89
Dr. R. Hart 9/8/89
Dr. Hansom 9/8/89
Dr. Hart 10/13/90
Dr. JP Hanson 1/12/90
Dr. Hart 1/29/90
J.P. Hanson, M.D. 3/9/90
Dr. Hart 4/13/90
Dr. Hart 4/13/90
Dr. J. Hanson 4/13/90
Dr. Hart 5/11/90
Dr. Hart 5/11/90
Dr. Hart 5/11/90
Dr. Hart 5/11/90
Dr. Czamecki 6/8/90
Dr. Hart 6/8/90
Dr. Hart 6/8/90
Dr. Hart 6/8/90
St. Luke's Medical Center Cancer Research (continued)

The Milwaukee Community Clinical Oncology Program Community Compliance with Cancer Screening Recommendations - A Prospective Randomized Study

Study No. E302 CSF 39300: A Randomized, Double-Blinded, Placebo-Controlled Trial with Two Dosage Levels of Human Granulocyte-Macrophage Colony Stimulating Factor (Recombinant, E. Coli) following Autologous Bone Marrow Reconstitution for Lymphoma

Dr. Hart 6/8/90

Dr. Taylor 7/13/90

Study No. C85-049-29: Double Blind Phase III Study of Patients with Intermediate and High Grade Relapsing or Refractory Non-Hodgkin's Lymphomas Utilizing Intensive Chemotherapy with GM-CSF or Placebo

Dr. Taylor 7/13/90

CALGB #9051: A Phase II Study of Etoposide, Vinblastine, Doxorubicin EVA, and Subtotal Nodal Radiation in Poor Risk, Early Stage Hodgkin's Disease

Dr. R. Hart 9/14/90

CALGB #9071: House Officers Training in Smoking Cessation

Dr. R. Hart 9/14/90

CALGB# 8911: Carboplatin for Multiple Myeloma - A Phase II Study

Dr. R.Hart 11/9/90

CALGB# 8944: Intensive Doxorubicin, Surgery, CMF, and Radiation Therapy for Stage III Breast Cancer - A Study of Efficacy with Pharmacokinetic and Antigenic Monitoring - Phase II

Dr. Hart 11/9/90

CALGB #9081: Intergroup Rectal Adjuvant Protocol: A Phase III Study

Dr. R. Hart 11/9/90

CALGB #9011: A Phase III Comparison of Fludarabine Phosphate vs. Chlorambucil in Previously Untreated B-Cell Chronic Lymphocytic Leukemia

Dr. Hart 11/9/90

CALGB #9022: Intensive Post Remission Therapy with High Dose Cytocine Arabinoside, Cyclophosphamide/Etoposide and Mitoxantrone/Diaziquone in Patients with Acute Myeloid Leukemia in First Remission

Dr. Hart 11/9/90

CALGB #9021: High Dose Cytarabine with or without Concurrent GM-CSF in the Remission of Induction of Relapsed or Refractory Acute Myelogenous Leukemia and Untreated Blast Crisis of Chronic Myelogenous Leukemia - A Phase III Study

CALGB #9033: Oral vs. Intravenous Etoposide in Combination with Intravenous Cisplatin in Extensive Small Cell Lung Cancer: Phase III Includes Pharmacology Companion Protocol CALGB #9062

Dr. R. Hart 1/11/91

CALGB #9082: A Randomized Comparative Study of Adjuvant CAF Followed by Standard CPA/CDDP/BCNU vs. Intensive CAPA/CDDP/BCNU Plus Autologous Bone Marrow Support with Local Regional Radiation Therapy and Hormonal Therapy for Patients with Stage II/III Breast Cancer Involving 10 or more Lymph Nodes

Dr. R. Hart 1/11/91

CUI-019003: A Randomized, Double-blind, Parallel Group Study of MAROGEN Sterile Powder (100 IU/kg and 200 IU/kg) vs. Placebo in the Treatment of Anemia Associated with Chemotherapy

Dr. R. Hart 1/11/91

CALGB #9013: Subcutaneous Interferon Alpha-2b and Low Dose Cytarabine (LoDAC) in Previously Untreated Chronic Phase Chronic Myelogenous Leukemia-A Phase II Study of Philadelphia Chromosome-Positive Patients

Dr. Ron Hart 2/8/91
Conferences are held on the second and fourth Monday of every month at noon. This is a patient oriented, multi-disciplinary cancer conference. For more information or questions, please call 649-6225.

This is a conference to discuss selected difficult head and neck tumors from a multi-disciplinary approach. Conferences are held on the first and third Monday of every month at noon. For more information or questions, please call 649-3900.

February 16, 1989
THE BIOLOGY BEHIND AND EFFECTIVENESS OF NEUTRON THERAPY
Frank Hendrickson, M.D.
Chairman, Department of Radiation Therapy
Rush Presbyterian-St. Luke's Medical Center
Chicago, IL

June 8, 1989
INTRALUMINAL RADIATION THERAPY IN THE BRONCHUS AND OTHER SITES: PALLIATION & CURE
Mark F. Schray, M.D.
Assistant Professor of Oncology
Mayo Clinic
Consultant, Division of Radiation Oncology
Department of Oncology
Mayo Clinic
Rochester, MN

September 14, 1989
DIFFERENTIATED THYROID CANCER: FACTORS INFLUENCING PROGNOSIS AND THE IMPACT OF THERAPY
Ernest L. Mazzaferri, M.D., F.A.C.P.
Professor of Internal Medicine & Physiology
Chairman of Internal Medicine
Ohio State University
Columbus, OH

October 26, 1989
HYPERCALCEMIA IN CANCER: IMPLICATIONS FOR PATIENTS AND FOR HEALTH
Gordon J. Strewler, M.D.
Chief, Endocrine Service
VA Medical Center
San Francisco, CA
Glossary

Stage - Extent of disease determined at the time of diagnosis and/or initial therapy.

IN SITU - a tumor classified microscopically as in situ, non-invasive, pre-invasive, non-infiltrating, intraductal, intraepithelial or intraepidermal.

LOCAL - neoplasm restricted to the organ of origin, but may be invasive or infiltrating within the organ of origin.

REGIONAL - a tumor that has extended beyond the limits of the organ of origin into (1) surrounding organs or tissues by direct extension, (2) regional lymph nodes by metastasis, or a combination of (1) and (2) and appears to have spread no further.

DISTANT - a neoplasm that has spread to other organs or lymph nodes remote from the primary tumor.

First Course of Treatment - The tumor directed treatments started within the first four months after diagnosis.

ANALYTIC CASES - Cases which are first diagnosed and/or given their first course of treatment at St. Luke's Medical Center.

NON-ANALYTIC CASES - Cases which are seen at St. Luke's Medical Center after the first course of treatment and those cases where the patient is diagnosed at autopsy.

Treatment

SURGERY - the partial or total removal of the tumor excluding biopsy.

RADIATION - cancer-related beam and non-beam therapy (non-beam includes radium, cesium and radioactive isotopes).

CHEMOTHERAPY - treatment of cancer using drugs.

COMBINED THERAPY - refers to any combination of surgery, radiation, chemotherapy, hormone therapy or other therapy administered jointly as a single course of treatment.

DIAGNOSTIC ONLY - cancer-related treatment not given; this may occur for many reasons; for example, patient refused treatment, diagnosed at autopsy, or the patient's general condition is unsatisfactory for treatment.

References


