



SCHOOL OF PUBLIC HEALTH
UNIVERSITY AT ALBANY State University of New York

Ovarian Cancer

Issues for Public Health and Primary Care Providers

**Produced by
School of Public Health
University at Albany**

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Evaluations

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Ovarian Cancer

- A malignant tumor that most commonly arises from the surface epithelium of the ovaries

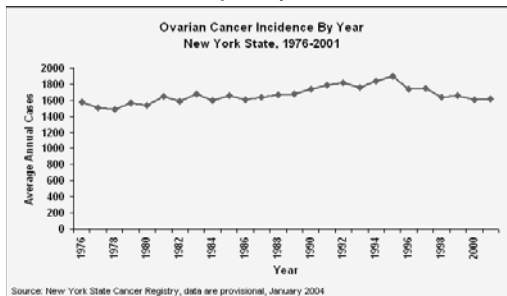
Female Cancers

Selected Sites – 2006 Estimates

Cancer	New Cases	Deaths
Breast	212,920	40,970
Lung & Bronchus	81,770	72,130
Colon & Rectum	75,810	27,300
Uterine Corpus	41,200	7,350
Non-Hodgkin Lymphoma	28,190	8,840
Ovary	20,180	15,310
Pancreas	16,580	16,210

American Cancer Society

Ovarian Cancer Incidence by Year (NYS)



Ovarian Cancer Incidence and Mortality Rates Black vs. White Women (1999-2003)

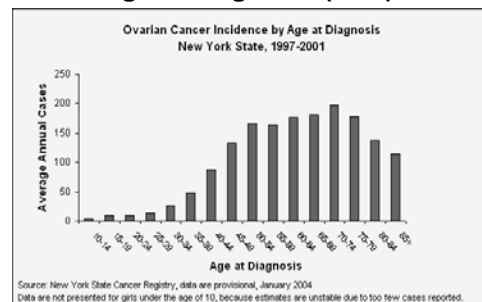
		Incidence	Mortality
National	All Races	13.7	9.9
	Whites	14.5	9.3
	Blacks	10.1	7.4
NYS	All Races	14.8	8.9
	Whites	15.7	9.5
	Blacks	10.1	6.7

Data from SEER and NYS Cancer Registry, Rates per 100,000 women

Risk Factors

Increase	Decrease
Age	Oral Contraceptives
Personal and/or family history	Pregnancy
Genetic status	Tubal ligation
Infertility/low parity	Breast-feeding

Ovarian Cancer Incidence Age at Diagnosis (NYS)



Hereditary Risks

Family History of Ovarian Cancer	Lifetime Risk
None	1.5%
1 first-degree relative	5%
2 first-degree relatives	7%
Hereditary ovarian cancer syndrome	40%
Known BRCA1 or BRCA2 germline mutation	35-65%

Clues that a Cancer-Susceptibility Mutation is Present

- A positive family history of breast and/or ovarian cancer (in three or more 1st or 2nd degree relatives on the same side of the family)
- Early age of onset (especially <45) of breast or ovarian cancer in the patient
- A patient or family member with ovarian cancer at any age in addition to one or more family members with breast cancer at any age

Clues that a Cancer-Susceptibility Mutation is Present

Cont.

- Bilateral or multifocal breast disease or multiple primary tumors (at least one involving the breast) in the patient or family member
- Breast cancer in a male patient or a male family member
- Ashkenazi Jewish ethnicity plus appropriate history

Symptoms of Ovarian Cancer

- Abdominal bloating, increased girth, pressure
- Unusual fatigue
- GI disturbances such as nausea, indigestion, gas, constipation or diarrhea
- Urinary frequency or incontinence
- Unexplained weight loss or gain
- Shortness of breath

Symptoms of Ovarian Cancer

...Consider ovarian cancer when one or more of these symptoms is present for a month or more.

Women with Ovarian Cancer DO Have Symptoms

- Goff study of 1,725 women with ovarian cancer
- 70% recalled having symptoms for 3 months or more before diagnosis
- 35% recalled symptoms for at least 6 months
- Only 5% were asymptomatic (including only 11% in Stage I or II)

Reasons for Delayed Diagnosis

- Vague symptoms common to other diseases
- Menopause
- Aging
- Dietary changes
- Stress
- Functional bowel problems

Making the Diagnosis

- History: present illness, family history
- Physical exam, including pelvic & rectal exams
- Tumor markers (CA-125)
- Transvaginal sonogram (ultrasound) and/or CAT/MRI
 - Rule out other cancers
 - Evaluate extent of disease and plan surgery
- Exploratory laparotomy by appropriate surgical team

Ovarian Cancer Surgery

- Vertical incision
- Multiple cytologic washings
- Intact tumor removal
- Total abdominal hysterectomy & removal of both fallopian tubes & ovaries
- Omentectomy
- Lymph node sampling
- Biopsy adhesions and suspicious areas

Ovarian Cancer Surgery

Cont.

- Optimal cytoreduction – “tumor debulking”
- Resection of as much tumor as possible
- Ovarian cancer differs from other solid tumors
- Theoretical and clinical benefits of cytoreduction have been demonstrated
- 30% of “early disease” cases in fact have metastases

Ovarian Cancer Staging

- I: Tumor confined to ovaries
- II: Extension to other pelvic structures
- III: Abdominal or lymph node involvement
- IV: Distant metastases (examples: liver parenchyma, cytology-confirmed pleural effusion)

Ovarian Cancer: Stage Distribution and Survival

Stage	Percent	Survival
I	24	95%
II	6	65%
III	55	15-30%
IV	15	0-20%
Overall		50%

(American Cancer Society, 2000)

Ovarian Cancer Treatment

- Cisplatin
- Carboplatin
- Paclitaxel
- Etoposide
- Ifosfamide
- Adriamycin
- Doxil
- Hexamethylmelamine
- Vinorelbine
- Topotecan
- Docetaxel
- Gemcitabine
- Oxaliplatin
- Tamoxifen
- Megace
- Femara

Improved Survival with New Treatments

- 1975: 12 months (Alkeran, Gyn Onc specialty)
- 1983: 14 months (multidrugs, eg. CTX/Adria)
- 1986: 24 months (Cisplatin: CAP)
- 1996: 37 months (Paclitaxel)
- 2006: 66 months? (Intraperitoneal therapy, other reasons?)

Reasons for Improved Survival

- New therapies
- Practice guidelines on referral to gynecologic oncologists
- Compliance with these guidelines
- Better education of patients and providers

Importance of Referral to Specialty Care

- 80% of ovarian cancer patients receive inadequate surgical staging from non-gynecologic oncologist surgeons
- Gynecologic oncologists five times more likely to completely remove ovarian cancer
- Survival outcomes vastly improved by use of gynecologic oncologists

How to Locate a Gynecologic Oncologist

- Referral from gynecologist or other health care provider
- Search through Women's Cancer Network www.wcn.org "Find a Doc" feature
- Access through NYS DOH Ovarian Cancer web page

Distribution of Gynecologic Oncologists in Practice in NYS



**CA-125 and Pelvic Ultrasound Are
Not General Population Screening Tests**

- Tests not sufficiently sensitive or specific
- High false positive rate
- Unacceptable number of unnecessary surgeries
- No evidence of reduced mortality
- Expensive public health initiative without proven benefit

Reasons for False Positive CA-125

- Fibroids
- Peritoneal inflammation
- Pregnancy
- Ovulation
- Endometriosis
- Menstruation
- Liver disease

False Negative CA-125

- Up to 50% of early-stage cancers do not elevate CA-125 level
- Most advanced ovarian cancers are associated with elevated levels

Ultrasound Screening of General Population vs. High-risk Women

- Screening of 5,000 women
 - 65 exploratory surgeries for every case of ovarian cancer
- Screening of 1,600 women with a family history
 - 12 exploratory surgeries for every case of ovarian cancer
- Survival benefit unproven

**1994 NIH Consensus
Conference on Ovarian Cancer**

“There is no evidence available yet that the current screening modalities, CA-125 and transvaginal sonography, can be effectively used to reduce the mortality of ovarian cancer, nor that their use will result in a decrease rather than an increase in morbidity and mortality.”

Proteomics

- Pattern of proteins in blood
- Promising preliminary results
- Original results not yet validated by other researchers
- Stay tuned!

Options Available to High-Risk Women

- Genetic counseling and testing
- Oral contraceptives
- Appropriate surveillance
- Risk-reduction surgery
- Enhanced awareness of signs and symptoms
- Empowerment and support

Ovarian Cancer: Future Directions

- Cost-effective screening
- Early detection
- New preventive strategies
- Improved chemotherapeutics
- Immunotherapy
- Gene therapy
- Strengthening education efforts

Public Health Messages

- Ovarian cancer is not a “silent killer”
- There is not currently an appropriate screening test for the general population
- Women and providers need to be aware of the often subtle signs and symptoms
- Women must be educated and empowered to seek appropriate care when they have symptoms or become aware of their high-risk status

Public Health Messages, cont.

- All women, regardless of risk status, should have regular recto-vaginal pelvic exams throughout their lives and discuss risk-reducing strategies such as use of oral contraceptives with their health care providers

Cont.

Public Health Messages, cont.

Cont.

- Women at high risk due to personal and/or family history should be identified, enabling them to consider various options to reduce morbidity & mortality
- Immediate referral to a gynecologic oncologist when ovarian cancer is being considered

NYS DOH Ovarian Cancer Program

- Mission is to reduce morbidity and mortality and improve quality of life
- NYS Ovarian Cancer Education, Awareness & Support Initiative
- Symposium – “Ovarian Cancer in NYS: Opportunities and Challenges”
- Survey on workforce/access issues
- “Survivors Teaching Students” Program
- NYS Ovarian Cancer email list

