Breast Cancer in Young Women

Advanced Health Education Center

Breast Cancer In Young Women

Mature female breast composed of essentially four structures: lobules or glands; milk ducts; fat and connective tissue.

Women’s breast sizes and shapes vary widely. Depends on age, if pregnant, having menses or post menopausal.

Fatty breasts provides 98% accuracy. Dense breasts accuracy goes down to 40-60%.

Breast Cancer In Young Women

Most common among women and the leading cause of cancer deaths in women between ages 15 to 54.

It is the second most common cause of cancer related mortality.

One third of women with breast cancer die from breast cancer.

Breast Cancer In Young Women

- Breast cancer extremely rare in women under 30, with a risk of only about 1 in 2500.
- In women up to age 40, the risk increases to about 1 in 250, and in women in their 40s it jumps to 1 in 70.
- Five percent of all breast cancers diagnosed in the US occur in women under age 40.
Breast Cancer in Young Women

- The number of young women diagnosed with breast cancer each year is between 11-12,000.
- Close to 1400 of those women will die each year.
- The survival rate for 5 years is 83% for younger women - lower than the survival rate for post-menopausal.
- Diagnosed before age 40 - poorer prognosis

According to the National Cancer Institute:

- One in 14 women with breast cancer is under age 40 when diagnosed
- One in eight women diagnosed with breast cancer is younger than 45 when diagnosed.
- Breast cancer now accounts for 26 percent of all cancer in women 15-39 years of age and 39 percent of all cancer in 35-39 year-olds.

Breast Cancer

- Combination of genetic, prenatal, environmental and lifestyle factors.
- Have the BRCA1 or BRCA2 mutations
- More aggressive and at a later stage.
- Different profile from middle age and treatment matches its more aggressive profile.

Breast Cancer in Young Women

- NCI estimates that 207,090 women were diagnosed with breast cancer in 2012.
- Included:
  - 4,000 under 34 years of age
  - Almost 22,000 women—one in 10 cases—were diagnosed between 35-44 years old
  - Double the statistics for women between 45-54 years of age
  - Add up all the women under age 54 with breast cancer diagnosis 2012 represent 30% of the total cases

Age-Specific Probabilities of Developing Invasive Breast Cancer

<table>
<thead>
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<th>Age</th>
<th>Probability</th>
<th>(or 1 in)</th>
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<td>20</td>
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<tr>
<td>70</td>
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<td>Lifetime risk</td>
<td>12.08%</td>
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Young women tend to ignore possible signs of cancer because they believe it happens to older women.

Some signs that are usually
- Pain in the breast
- Changes in breast size or shape
- Redness and swelling
- Nipple changes or discharge
- Swelling in the armpit
- Painless lump in the breast

Also noted is that some physicians then to think that young women don’t get breast cancer and don’t recommend getting a mammogram when they find a lump.

Breast cancer grows significantly faster in younger women under 50:

AGE AVERAGE TUMOR DOUBLING Time
- Under 50: 80 days
- Age 50 - 70: 157 days
- Over age 70: 188 days

Breast Cancer Outcomes and Age
- Lower survival rates
- Usually advanced stage and delays in diagnosis
- Have higher local/chest wall recurrence rates
- Higher local recurrence rates with increased frequency of “extensive intraductal component”, making margin control more difficult.

Just a few young women who have had breast cancer.

- Jennifer, age 27
- Nicole, age 24
- Jenny, age 27
- Jessica, age 19
- Tonya, age 34
- Darci, age 19
- Harvinder, age 23
- Angela, age 37

Race/Ethnicity-Associated Variation in Breast Cancer Among Young Women

White Americans
African Americans
Hispanic/Latina Americans
Asian Americans

Do we know how to appropriately define racial/ethnic identity???
Race/Ethnicity-Associated Variation in Breast Cancer Among Young Women

White American Caucasians
European ancestry

African American
African ancestry
Caribbean ancestry
South American ancestry

Asian Americans
Pacific Islanders
Japanese ancestry
Chinese ancestry

Heritable contributions from geographically-defined racial/ethnic ancestry to biology of breast cancer influenced by centuries of genetic admixture in the U.S.

- Young women account disproportionately for breast cancer mortality
- Advanced and more aggressive disease biologically
- African American women increased risk in premenopausal age range
- White American women increased risk for ER-neg/TNBC most notable in the premenopausal age range

Researchers took a detailed look at women in five Bay Area counties diagnosed with breast cancer between 1988 and 1992. The researchers tracked who survived and who died until 2001. Women who died from causes other than breast cancer were taken out of the statistics—not counted as either dying or surviving.

These figures for the five Bay Area counties do not necessarily reflect the picture for the entire state. Here are some things the researchers found:

Frank Vicini, MD, studied medical records of 146 young women and published his report in the Journal of Clinical Oncology:

- Treated with lumpectomy suggests not enough tissue removed.
- Reason “a cosmetic concern, hoping to preserve a good appearance.”
- Those with large excisions “were unlikely to have recurrences.” (meaning the surgeon removed a good border of healthy tissue around the tumor)
Some Breast Cancer Recurrence Associated With Younger Age

- Includes lumpectomies 20 years ago when not so careful about so-called margin around the cancer.
- Most likely not a problem if surgery was in the last 10 years.
- This past decade "surgeons and radiation oncologists have determined the necessity of good, clear margins."

Some Breast Cancer Recurrence Associated With Younger Age

- Margins need be at least 3 to 5 mm
- Outside edge of cancer is a concern in many skin cancers, and believe the same factor is an issue with DCIS.

Breast Cancer and Pregnancy

- Most common cancer in pregnant and postpartum women occurring in about 1 in 3,000 pregnancies.
- Average patient - 32 to 38 years of age
- Many choose to delay childbearing and breast cancer will likely increase.

What's Different About Pregnancy?

- Hormones
- Metabolic Changes
- Hemodynamics
- Immunology
- Increased vascularity
- Age
- Few cases – anecdotal (observations or indications) experience
- Inherent bias – breast, ovarian cancer

Breast Cancer and Pregnancy

- During pregnancy, enormous levels of progesterone and estrogen are released in the blood.
- Stimulates ER (estrogen-receptive)-positive tumors which grow faster in pregnant women than non-pregnant.
- Undergoing treatment options could adversely impact the child.
- Surgery, radiation and chemotherapy all pose potential risks to the fetus.

Breast Cancer and Pregnancy

- Chemotherapy infuses the body with poisons.
- Can cause miscarriage in early stages of pregnancy
- Poor growth of the fetus during late pregnancy.
- Having surgery, anesthesia can cause miscarriages.
- Radiation can cause mother to miscarry in first trimester
- Increases the child’s chance of developing cancer.
Breast Cancer and Pregnancy

• Not a good incubator when body is sick and bad nutrition for the child.
• Medications can make the fetus sick.
• Possible anemia since oxygen doesn't carry well
• More susceptible to infections.
• Adverse affect on the child.
• Faced with tough decision of undergoing treatment or terminating the pregnancy.
• Delaying treatment to end of pregnancy, cancer may advance, decreasing chances of survival.

Breast Cancer and Pregnancy

• Breast cancer has no impact on the fetus.
• The fetus is protected because it cannot cross the placenta.
• Other types can affect the fetus. There is placenta cancer but that is rare.
• Melanoma (skin cancer), however, is extremely common and can cross the placenta.

Breast Cancer and Pregnancy

• Radiation therapy not an option for pregnant patients.
• Surgery - only option a mastectomy.
• No lymph node dissection due to the blue dye.
• First trimester-no chemo should be administered.
• Some chemotherapy (adriomycin & cytocin) can be given in second and third trimester without risk to fetus.

Breast Cancer and Pregnancy

• Natural tenderness and engorgement of pregnant and lactating breast - difficult detection of discrete masses
• Diagnosis delays - 5 to 15 months from onset of symptoms.
• Cancers typically detected at later stage.
• Pregnant and lactating women need to do BSE and have breast exam as part of routine prenatal care.
• If abnormality - ultrasound and mammography may be used.
• Proper shielding poses little risk of radiation exposure to the fetus.
• Mammograms only to evaluate dominant masses if suspicious physical findings.

Breast Cancer and Pregnancy

• 25% have negative mammograms
• Biopsy essential for diagnosis of any palpable mass.
• Diagnosis with FNA or excisional biopsy under local anesthesia.
• Advise pathologist if patient is pregnant to avoid a false-positive diagnosis.

Breast Cancer and Pregnancy

• Suppressing lactation does not improve prognosis.
• If surgery, suppress lactation to decrease the size and vascularity of breasts.
• Do not breast-feed if taking chemotherapy.
• Anti-neoplastics-(specifically cyclophosphamide and methotrexate) occur in breast milk and affect a nursing baby.
• No damaging effects on fetus from maternal breast cancer.
• No reported cases of maternal-fetal transfer of breast cancer cells.
General Considerations

• Pregnancy does not have a proven negative effect on any cancer
• Maintaining pregnancy after diagnosis
  – Delay of treatment (assume delivery at 34th week)
    • First trimester - up to 28 week delay
    • Second trimester - up to 22 week delay
    • Third trimester - up to 10 week delay

Breast Cancer in Pregnancy
(2nd most common cancer in pregnancy-cervical is 1st)

• 20% of cases are in women <40 years old
• 1-2% of cases are pregnant at time of diagnosis
• One case in 1500-3000 pregnancies
• Often difficult to diagnose
• Low dose mammogram with appropriate shielding of fetus is "safe"
• MRI – probably best
• Diagnosis often delayed
• Increase incidence of positive nodes (80%)
• Termination of pregnancy is not beneficial
• No adverse effects on prognosis from subsequent pregnancies

Prognosis

• Use TNM staging
• Most women have stage II or III disease
• Same prognosis stage for stage
• Delay in diagnosis has impact
• 60-100% - 5 year survival
• 31-52% - 10 year survival

Chemotherapy

Cessation of periods common among premenopausal undergoing chemotherapy.

Women starting menstruating before age 12 are least likely to experience chemo-induced periods.

If periods persist throughout chemotherapy or quickly resume, have a poorer prognosis than those who experience permanent chemo-induced periods.

Some women remain fertile and could have children.

Some chemo can damage a woman's eggs or a man's ability to produce normal sperm

Radiation treatment after surgery appears to improve survival for those with a lumpectomy and or a mastectomy.

Radiation therapy near the reproductive organs, or to the brain, can harm fertility, as can hormonal therapies for breast, prostate and other cancers.
Should All Young Women With Breast Cancer Get Chemo?

- Women diagnosed with breast cancer in their 20s and 30s seem to have a poorer prognosis than those who are first diagnosed in middle age.
- Results of a large, retrospective study from Denmark published in 2000 suggests that all women under the age of 35 with breast cancer should be offered chemotherapy following surgery.

- Denmark has decades-old comprehensive health registries which offers a unique opportunity for the researchers to study the relationship between age and breast cancer survival rates.
- To see how stage of disease at time of diagnosis and treatment influenced the negative effect of young age on the survival of these women.

- The group looked at more than 10,000 women with primary breast cancer who were less than 50 years old at diagnosis.
- Detailed information on tumor characteristics, treatment regimens and survival were available from a database maintained by the Danish Breast Cancer Cooperative Group.
- Researchers measured the relative risk of dying within the first 10 years after diagnosis.

- Overall, young women -- those under 35 years of age at diagnosis -- who did not receive chemotherapy had a significantly increased risk of dying.
- These women also were twice as likely to die during the 10-year period when compared to those who were diagnosed between ages 45 and 49.
- However, this extra risk disappeared almost entirely when those under 35 were given chemotherapy.

- The study showed clearly that young women with what in the first place looks like a low-risk tumor, small in size and with no spread to lymph nodes, should be considered for treatment with chemotherapy.
- This might very well eliminate the negative effect on survival observed among young women below 35 years.

- Young women are also young mothers and for this group of women, time is probably more precious than for any other group.
- Anything we can do to improve the survival for just some of these women is a significant step forward.
Christina Applegate Fights for Young Women

• Just a few months before learning that she had breast cancer, Christina Applegate got a shocking insight into the struggles faced by other young women also at high risk for the disease -- and who don’t have the resources of a Hollywood celebrity.

Christina Applegate Fights for Young Women

• Her mother had battled breast cancer and ovarian cancer
• She had been going for regular mammograms since age 30.
• When she turned 36, she was told--"Your breasts are just too dense for mammography alone
• She began screening with MRI

Less than a year later, in 2008

• She had landed the starring role in ABC’s comedy series Samantha Who? -- was diagnosed with breast cancer –
• an early-stage cancer caught with the help of those MRIs.
• Barely out of treatment when she began putting together a new foundation
• “Right Action for Women (RAW)

Christina Applegate Fights for Young Women

• After her second MRI, the patient relations woman who’d been taking care of her told her that a lot of high-risk young women were opting not to have screening MRIs because they couldn’t afford it
• Cost about $3,000 each time
• Insurance does not cover it
• It really angered her!”

Advice for Young Women

• Know Your Breasts
• Breast cancer-the leading cause of cancer death in young women aged 15 to 34.
• Talk to your doctor about the pros and cons of breast self-exams.
  – If you know how your breasts “should” feel, you’ll know when there’s a significant change that means you should call your doctor.

• RAW, an Entertainment Industry Foundation initiative
• Raises money and awareness for support programs that provide free or low-cost screening MRIs to younger women who have a high risk of developing breast cancer because of significant family histories and cancer-causing genetic mutations.
• **Be Persistent**
  - If you think you feel “something,” and family or doctors dismiss your concerns because you’re “too young for breast cancer,” it might be tempting to believe them and not seek further answers.
  - Be your own advocate

• **Doctor Shop**
  - Don’t automatically go with the first doctor you see.
  - There is no rush—Most breast cancers are not like other cancers where you have to start treatment immediately

• **Research Your Options**
  - Learn about things like stage and grade, and what they mean to your treatment options
  - There are no stupid questions

• **Network with Other Young Women**
  - Breast cancer when you’re in your 20s, 30s, and even 40s can be so isolating
  - Women with breast cancer are amazing -- women who’ve never met are connected
  - It isn’t a group you’d ever sign up for, but it’s a group that can make dealing with cancer as a young woman so much less lonely and difficult

• **One of the youngest patients seen was 18 when she felt a mass**
  - 22 when she was found to have stage IV breast cancer.
  - She kept telling doctors that she felt something and was worried about it, but they dismissed it because she was ‘too young.’”

• **The patient should be comfortable with their treatment team**
  - aware of all the newer approaches, such as genetics, neoadjuvant therapy (chemotherapy before surgery), and looking at molecular markers of their tumor to figure out individual risk.
Case Study #1

Diagnosed at age 27,
Diagnosis: Right IDC Stage 1
Left Tubular carcinoma

When I found out I had breast cancer, I was a nursing student and did not have any insurance. I had no idea what to do at that point. The lady at the school helped me get treatment without cost to me. Then I find out I had breast cancer in both breasts! I wondered how did this happen to me??

I graduated nursing school and now work in a Breast Surgical department. I knew I had to work with breast cancer patients so hopefully I can give them courage. I try to keep a positive outlook and this helps me make it easy.

Treatment: Lumpectomy, chemotherapy, radiation and Tamoxifen for 5 years

IDC  right breast & Tubular on left 2007

IDC

Tubular - great catch by radiologist
Case Study #2

Diagnosed at age 34
Diagnosis: ILC and DCIS Stage 2

Treatment: Pre-surgery chemo, lumpectomy, XRT, and Tamoxifen

I had no idea that women in my age group could be at risk and found my lump quite by accident. I wasn't sure I heard correctly when my doctor told me.

Once I finished my treatment, I expected life to return back to normal but it wasn't like that at all. Even now, I still don't seem to be able to get through a day without thinking about it. The emotional scars will take a lot longer to heal than the physical ones but I am getting there.

July 2009
Case Study # 3

Diagnosed at age 19
Diagnosis: IDC/DCIS Grade 3
two positive nodes

Treatment: Double mastectomy, reconstruction, chemo, Tamoxifen

I was diagnosed just before Christmas in 2006. I was petrified. I am a BRCA1 gene carrier and other family members had already lost their lives to breast cancer.

I went on the most amazing journey. I traced my mother’s family to forewarn them and ended up in South Africa. My research has brought me so much happiness.

It has been my way forward. Now I have lots of incredible people in my life. They are my strength. One relative in South Africa is healthy now 10 years.
Three months after chemo

After 3 months of Chemo

Case Study #4

Diagnosed at age 19
Diagnosis: Cystosarcoma Phylloides

Treatment: Mastectomy and had no response with chemotherapy.
I was shocked to find out I had a rare type of breast cancer. I was told there were no options for treatment.
I had the mastectomy and node removal, then had bad lymphedema in my left arm.
I ended up with cancer spreading to my lungs, bones and liver.
I am in so much pain and not sure how long I have to live.
I keep trying to go on, I want to live.
She died 1 ½ years after diagnosis.
Case Study #5

Diagnosed at age 23
Diagnosis: Right ILC – Stage 2

Treatment: Pre-chemo, lumpectomy, Tamoxifen

I found it hard to believe I had breast cancer – I was only 23! I still occasionally get pain and very tired as well. I know that eventually I will get back to “normal”.
Cancer changes you but I always look on the bright side of life. Positive thing to come out of all this is that I am aware of every moment and minute of my life.