Mammography

Risk Factors for Breast Cancer

MRT Program

What is Breast Cancer ?

- Breast cancer starts in the cells of the breast
- Malignancy is a group of cells that can grow into and destroy nearby tissue and can metastasize
- Cells sometimes change and no longer grow or behave normally and lead to benign conditions such as atypical hyperplasia and cysts
- Can lead to noncancerous tumours such as intraductal papillomas
- Changes to breast cells can cause cancer
- In the breast often starts in cells that line the ducts
- Known as lobular carcinoma
- Both ductal and lobular can be in situ and can also be invasive

Risk Factors

- Most occur in women because cells are exposed to female hormones estrogen and progesterone
- More common in high income developed countries such as Canada, US and some European countries
- Risk increases with age and mostly between 50 and 69 years of age

Personal History of Breast Cancer

- Had it previously at higher risk of developing again
- Can develop in same breast or the other
- Ductal carcinomas or lobular in situ have higher risk of developing second breast cancer

Family History

- One or more first degree relatives (mother, sister, daughter) especially if diagnosed pre menopause (doubles the chance)
- Second degree relative such as grandmother, aunt or niece
- A relative had bilateral breast cancer before menopause
- 2 or more relatives had breast or ovarian cancer
- A male relative had breast cancer

BRCA Gene

- Genetic mutations are changes to a gene
- Can increase the risk of developing certain cancers
- Inherited gene mutations cause 5-10% of breast cancers
- BRCA1 and BRCA2 found in the body
- Tumour suppressor genes as appear to play role in controlling growth in cancer cells
- Mutations in these cells affect them no longer control cancer growth
- Rare and occur in 1in 500 people

BRCA (cont.)

- Women with inherited BRCA1/BRCA2 gene mutations have up to 85 % chance of developing breast cancer and at a younger age than other women (premenopausal)
- If develop in one breast likely to in the other

Dense Breasts

- Have more connective tissue, glands and milk ducts that fatty tissue
- At higher risk of developing breast cancer
- Can be harder to read mammogram as it looks white compared to dark appearance of fatty tissue
  - Hides tumours

Reproductive History

- Estrogen is main hormone associated with breast cancer
- Affects growth of breast cells
- And believed to in breast cancer cell growth as well
- Type of exposure and how long cells are exposed to estrogen affects chances of cancer developing

Early Menarche

- Start of menstruation is 11 or younger
- Cells are exposed to estrogen for a greater amount of time
- Increases risk of cancer

Late Menopause

- If after age of 55 means cells are exposed to estrogen for greater amount of time
- Increases the risk for breast Cancer
- If at younger age decreases time breast tissue exposed to estrogen and decreases risk of developing cancer

Late Pregnancies or No Pregnancies

- Pregnancy lowers total number of menstrual cycles a woman has in her lifetime
- Women have first full-term pregnancy after the age of 30 slightly higher risk if cancer than earlier age
- The more children a woman has the greater the protection against breast cancer
- No pregnancies increases the risk

Exposure to Ionizing Radiation

- Women who have receives radiation therapy to chest, neck and armpit area have higher risk factor
- Fear that regular mammography will increase risk but modern equipment uses very low doses
- Benefits outweigh risks

Hormone Replacement Therapy

- If taken a long time can increase the risk especially if estrogen plus progestin (combined HRT)
- Risks increased 1 % for every year estrogen taken and 8% every year combines HRT taken
- Risk disappears a few after stopping HRT

Oral Contraceptives

- Ones that contain both estrogen and progesterone slightly increase risk of cancer especially in women who have taken them 10 + years
- Risk disappears after quit taking them

Atypical Hyperplasia

- Non cancerous condition where there is greater number of abnormal sells in breast tissue
- Increases rick of developing breast cancer

Alcohol

- Drinking alcohol increase risk for breast cancer
- Even low levels (just over 1 drink per day) can increase the risk and increases with amount consumed
- Alcohol thought to have high levels of estrogen
- May also lower some essential nutrients that protect cell damage such as Folate, vitamin A and C

Being Obese

- Increases risk in post-menopausal women
- After menopause fat tissue produces a small amount of estrogen

Possible Risk Factors

- Adult weight gain
- Smoking
- Greater birthweight
- Night shift work
- Some non-cancerous breast condition

No Link to Breast Cancer

- Significant evidences indicates no link between:
  - Antiperspirants, deodorants, abortion, breast implants or bras and a higher risk of breast cancer