Screening and Prevention of Gynecologic Cancers

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Overview

• What is a screening test?

• Cervical Cancer
  • Risk Factor and Prevention
  • Screening

• Ovarian Cancer
  • Risk Factors and Prevention
  • Symptoms
  • Screening

• Endometrial cancer
  • Risk Factors and Prevention
  • Symptoms
Principles of Screening Tests

- Performed on an asymptomatic population
- Must capture “most” patients who have the disease
- Allowed to have a high false positive rate
- Screening test and diagnostic test have to be low risk
- Results in improved health in the tested population
Example

• Screening for cervical cancer with pap smear

• Screening for ovarian cancer with pelvic ultrasound
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Cervical Cancer
Cervical Cancer

• Cervical Cancer is caused by human papillomavirus (HPV)

• Other risk factor: smoking, not undergoing recommended screening

• Symptoms: Abnormal vaginal bleeding, pelvic pain

• Screening is accomplished via pap smear
Progression of cervical disease after HPV infection

- Normal epithelium
- HPV infection koilicytosis
- CIN1
  - Low-grade squamous intraepithelial lesion (ASCUS/LSIL)
- CIN2
  - High-grade squamous intraepithelial lesion (HSIL)
- CIN3
- Invasive carcinoma

Regression

* Probability increases with viral DNA integration. CIN: cervical intraepithelial neoplasia; ASCUS: atypical squamous cells of undetermined significance

What Happened to my Annual Pap Smear

• Cervical cancer does not occur without HPV

• Once a patient has HPV it takes years to develop pre cancer
A Word on Prevention

• There is a vaccine!!
  • Approved for ages 9-45yo in males and females
  • Best coverage if vaccinated by age 12

• Preventing exposure to HPV is very difficult
  • Some improvement with condom use
Ovarian Cancer
Ovarian Cancer

• Risk Factors
  • More lifetime ovulations
  • Presence of intact fallopian tubes
  • Family History
  • BRCA mutation or Lynch Syndrome

• Prevention
  • Decreasing lifetime ovulations
  • Removing fallopian tubes
  • Removing ovaries
Pathogenesis of Ovarian Carcinoma
Ovarian Cancer Symptoms

• Ovarian cancer has symptoms!
  • Abdominal pain
  • Abdominal swelling or bloating
  • Urinary frequency

• Women often undergo urologic or gastrointestinal work up before ovarian cancer is detected
Ovarian Cancer Screening

• There is no effective screening for the general population
  • Ultrasound
  • CA-125, ROMA, Ova1
  • Online risk assessment tools

• Ultrasound and CA-125 improves outcomes in women with known genetic mutation that predisposes them to ovarian cancer
Endometrial cancer
Endometrial Cancer

• Risk Factors
  • Excess estrogen
  • Diabetes
  • Lynch Syndrome
  • Tamoxifen

• Prevention
  • Decrease extra estrogens
  • Control or prevent diabetes
  • Hysterectomy
Endometrial Cancer Symptoms

- Post menopausal bleeding
- Irregular bleeding in premenopausal patients
- Don’t ignore irregular bleeding!
Endometrial Cancer Screening

- Recommended for women with Lynch Syndrome
- Otherwise not recommended
  - Typically detected in early stage
  - Diagnosed by office procedure
Take home points

• Don’t ignore your body

• You shouldn’t have hormonal symptoms when you don’t have hormones

• Find out your family history

• Not all bleeding is a “period”

• Pap smear and routine labs do not test for ovarian or endometrial cancer