CANCER IN PREGNANCY

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MSU SCS Board Review Course

IMAGING / LABS

• Ultrasound and MRI are preferred
• Ionizing scans (like CT scans) can be done with fetal shielding
• Keep radiation doses as low as possible and avoid if possible
• Avoid contrast agents
• CA-125 will be elevated in pregnancy
• Inhibin B, anti-mullerian hormone and LDH is not elevated in pregnancy

SURGERY IN PREGNANCY

• Second trimester is best time to operate
• When 20+ weeks then patient positioned in left lateral tilt position
• Laparoscopy up to 28 weeks
  • Max time of 90 min
  • Pneumoperitoneum with max pressure of 10-13 mmHg
  • Open technique
  • This is all to help avoid hypercapnia, uterine perforation and reduced flow to uterus with increase abdominal pressure
RADIATION IN PREGNANCY
• Effects include fetal malformations, growth restriction, microcephaly, mental retardation, and fetal demise
• Long term effects are increased risk of childhood cancer and leukemia
• Pelvic RT in the first trimester causes spontaneous AB
• Pelvic RT in second trimester causes death of the fetus within a month

CHEMOTHERAPY IN PREGNANCY
• Placenta protects fetus by reducing transplacental passage of the drug
  • Doxorubicin transfers <10%
  • Paclitaxel and docetaxel pass less than 2%
  • Cyclophosphamide and vincristine / vinblastine transfer at 20%
  • Carboplatin transfers at 60%
• Term delivery should be the goal
• Vaginal delivery is the goal
  • Except in cases of cervical carcinoma
  • Cesarean section should be classical incision to avoid lower uterine segment to avoid a met to the wound

CHEMOTHERAPY EFFECTS ON FETUS
• Short term
  • In first trimester
    • Spontaneous abortion, fetal death and major malformations to eyes, ears, palate and toes
  • After first trimester
    • No increased effects beyond normal population
• Long term
  • Studies thus far show general health, cognitive development and cardiac outcomes to be same as general population
CIN IN PREGNANCY

- Main treatment of CIN is observation
- Colposcopy and biopsy are ok during pregnancy
- ECC is contraindicated
- ASCUS and LSIL have low rates of finding CIN 2,3 thus you can delay colposcopy until 6 weeks PP
- HSIL then colposcopy is recommended
  - Ablation or excision is contraindicated in pregnancy
  - Only do a conization if suspicious of microinvasion
    - Try to do superficial, flat cone

CERVICAL CANCER IN PREGNANCY

- MRI without contrast will help to determine tumor size, parametral invasion and it is safe in pregnancy
- Examine lymph nodes via MRI or laparoscopic lymphadenectomy
- Stage IA
  - Cone to rule out invasive disease (14-20 weeks)
  - Can deliver vaginally if margins negative
- Stage IA2 – IB1 (tumor 2 cm or less)
  - Pelvic lymphadenectomy for tumor less than 2 cm and diagnosed before 22-25 weeks
  - Positive nodes then termination and treatment should be started
  - Negative nodes then large cone or trachelectomy
  - Radical trachelectomy is associated with 33% fetal loss
  - Other options include chemotherapy with radical hysterectomy post partum

CERVICAL CANCER IN PREGNANCY

- Stage IB1 (tumor >2 cm) – IV
  - If patient wishes to continue pregnancy and in first trimester then chemotherapy is given
  - If 22-25 weeks then can do pelvic lymphadenectomy and if positive then should terminate and do standard therapy
  - If in third trimester then can wait until fetal maturity and treat postpartum
OVARIAN CANCER IN PREGNANCY

- Most epithelial ovarian cancer will be found in early stage
  - If pregnancy is continued then USO and staging (pelvic and aortic LN) should be done
  - Carboplatin or cisplatin based chemo should be given after surgery
- Advanced ovarian cancer (stage III+)
  - Cannot properly stage and debulking without causing problems to fetal health
  - Neoadjuvant chemotherapy until fetal lung maturity and debulking postpartum is the best option
- Germ cell tumors and Sex Cord Stromal Tumors
  - Usually USO and staging appropriate
  - Chemo in advanced cases

VULVAR CANCER

- Treatment with radical vulvectomy and inguinal lymph nodes should be the same as in the non-pregnant patient