Renal Cell Carcinoma

- Divided into cancers of the renal parenchyma and cancer of the renal pelvis.
- Renal parenchymal cancers are generally adenocarcinomas.
  - 4 histologic subtypes:
    - Clear cell – most common – 80%
    - Papillary or chromophilic – 10%
    - Chromophobic and collecting duct – 10%

Renal Cell Carcinoma

- Renal Pelvis Cancers
  - Transitional Cell tumors
Renal Cell Carcinoma

• Epidemiology
  – Estimated 63,920 new cases in 2014
  – Estimated 13,860 deaths in 2014
  – 5 year survival 72.4%
• More common in men
• Slightly more common in blacks

Renal Cell Carcinoma

• Risk Factors
  – Age – major risk factor
    • Presents in 6-8th decade of life
  – Cigarette smoking
  – Obesity
  – Polycystic Kidney Disease
  – Occupational Exposure
    • Heavy metals
    • Asbestos
    • Petroleum Products

Renal Cell Carcinoma

• Risk Factors
  – Hereditary forms
    • Von Hippel-Lindau syndrome – 2/3rd develop renal cell carcinoma
    • Familial Clear Cell Renal Cancer
    • Hereditary paraganglioma
    • Hereditary papillary renal carcinoma
    • Birt-Hogg-Dube
    • Hereditary leiomyomatosis
    • Renal Cell Cancer

Renal Cell Carcinoma

• Clinical Presentation
  – Majority are asymptomatic at time of diagnosis
  – Classic Triad (seen in less than 10% of patients)
    • Hematuria
    • Pain (abdominal)
    • Palpable Flank Mass
  – Hematuria is the most common finding
  – Other symptoms include fever, night sweats, malaise, and weight loss.
Renal Cell Carcinoma

- Work-up
  - Urinalysis
  - Renal Ultrasound
  - CT with IVP
  - MR
  - Biopsy
Renal Cell Carcinoma

- Estimated 73% cure rate if tumor is confined to kidney and surrounding tissue and surgically resected.
- Stage 4 disease has very poor prognosis.

Renal Cell Carcinoma

- Treatment
  - Localized disease
    - Surgery
  - Metastatic disease
    - Surgery
    - Immunotherapy
    - Targeted Therapy
      - VEGF
      - mTOR

Renal Cell Carcinoma

- Side Effect Management
  - Depends on type of therapy
    - Generally Supportive
    - May include dose holds, dose reduction, usually combination of both.
    - VEGF – Hand/Foot Skin Reaction
      - Moisturize!
    - VEGF - HTN
      - Antihypertensive

Genitourinary System
Bladder Cancer

• Malignancy of epithelium
  – Urothelia Carcinoma (transitional cell carcinoma)
  – Accounts for >97% of tumors
    • Subtypes include squamous cell carcinoma, adenocarcinoma, and small cell.
  – A field defect
    • from renal pelvis to urethra

Bladder Cancer

• Epidemiology
  – Prevalence is 3x higher in men than women
  – Usually presents in 5th and 6th decade
  – Estimated 74,690 diagnoses made in 2014
  – Estimated 15,580 deaths in 2014
  – 5 year survival 77.4%

Bladder Cancer

• Risk Factors
  – Smoking (twice as likely than a nonsmoker)
  – Gender (male)
  – Occupational Exposure
    • Aromatic amines in the dye industry
    • Rubber, leather, textile, paint, printing, and hairdressing industries
    • Squamous cell carcinoma subtype prevalent in endemic for schistosoma haematobium (uncommon in US)

Bladder Cancer

• Clinical Presentation
  – Hematuria most common (90% of patients)
    • Can be intermittent or constant
    • Frank or microscopic
  – Urinary symptoms
    • Frequency
    • Urgency
    • Dysuria
  – Unexplained hematuria in an adult >40 is renal cell or urothelial cell carcinoma until proven otherwise.
  – May also have constitutional symptoms
    • Night sweats, weight loss, anorexia, fatigue, pain
Bladder Cancer

• Work-up
  – Urinalysis
  – Urine cytology
  – Cystoscopy
    • Biopsy
  – CT with IVP
  – MR
Bladder Cancer

- 3 categories from which treatment is based
  - Superficial
  - Muscle Invasive
  - Metastatic

Bladder Cancer

- Superficial Urothelial Carcinoma
  - Treatment
    - Transurethral Resection of bladder tumor (TURBT)
      - Most will have recurrence within 5 years
      - BCG (Bacillus Calmette-Guerin) intravesicle therapy is most common
      - Other agents include mitomycin, interferon, and anthracyclins
      - None show superiority to BCG

Bladder Cancer

- Muscle Invasive Urothelial Carcinoma
  - Treatment
    - Radical cystectomy with pelvic lymph node dissection
    - Males undergo removal of prostate and seminal vesicles at time of cystectomy
    - Females undergo removal of uterus, ovaries, and fallopian tubes at time of cystectomy
    - Neoadjuvant chemotherapy (prior to cystectomy) has shown to improve outcomes
      - MVAC (methotrexate, vinblastine, doxorubicin, cisplatin)
      - Cisplatin based regimen such as Cisplatin plus Gemcitabine
Bladder Cancer

• Metastatic Disease
  – Confers poor prognosis, median survival is 12 months
  – Cisplatin based combination therapy is the treatment of choice
  – Radiation used for palliation

• Side Effect Management
  – Management of pain
  – Management of urinary symptoms
  – Management of any bleeding
  – Management of chemotherapy induced side effects
    • Neuropathy
    • Neutropenia
    • Thrombocytopenia
    • Rash
    • Fatigue
    • Nausea/Vomiting
    • Diarrhea/Constipation
    • Fatigue
    – Just to name a few

Genitourinary System

Prostate Cancer

• Most common non-cutaneous cancer in men in United States
• Second leading cause of cancer deaths in men after lung cancer
• Often indolent
• Adenocarcinoma most common >95%
  – Squamous cell subtype
  – Transitional cell subtype
  – Small cell subtype
Prostate Cancer

• Epidemiology
  – Estimated 233,000 diagnoses in 2014
  – Estimated 29,480 deaths in 2014
  – 5 year survival 98.9%

Prostate Cancer

• Risk Factors
  – Age
    • 2 of every 3 diagnoses found in men older than 65
  – Positive Family History
  – African American Descent
  – High fat and red meat diets
  – Some research to suggest obesity
  – BPH is NOT a risk factor

Prostate Cancer

• Screening
  – There has been much controversy over PSA screening
  – USPSTF recommends against screening in men older than 75 and conclude insufficient data to recommend for or against screening in younger men
  – AUA continues to recommend screening starting at the age of 40
  – It’s a discussion between the patient and his primary care provider.

Prostate Cancer

• Clinical Presentation
  – Often asymptomatic and found incidentally
  – May have urinary symptoms including frequency, hesitancy, decrease in stream, incomplete bladder emptying
  – Low back pain
  – Hematuria
**Prostate Cancer**

- It is not one size fits all
  - There are slow moving prostate cancers (turtles)
  - There are moderate moving prostate cancers (rabbits)
  - There are fast moving prostate cancers (birds)

**Prostate Cancer**

- Work-up
  - Physical Exam
    - DRE
  - PSA
    - <4 ng/ml
  - Transrectal ultrasound and biopsy
  - CT Scan
  - Bone Scan
  - MR

**Prostate Cancer**

- Biopsy is essential for diagnosis
  - GLEASON
    - Given 2 scores
      - 1-5 each score
      - Both scores are added and the sum gives you the Gleason Score
Prostate Cancer

- Treatment based upon stage
  - Localized Disease (confined to prostate)
    - Low Risk
      - Prostatectomy, EBRT, Brachytherapy
    - Intermediate Risk
      - Prostatectomy, EBRT, Brachytherapy
    - High Risk
      - Prostatectomy with pelvic lymph node dissection or EBRT with 2-3 year of androgen deprivation therapy

- Locally advanced disease
  - Prostatectomy with pelvic lymph node dissection or EBRT with 2-3 years androgen deprivation therapy

- Metastatic Disease
  - Surgery is usually not an option
  - Androgen Deprivation Therapy
  - Secondary Hormonal Manipulation
  - Chemotherapy
  - Novel Agents
    - Immune therapy
    - Bone targeted agents

Prostate Cancer

- Symptom Management
  - Disease
    - Pain
    - Fracture
    - Urinary symptoms
    - Pancytopenia
    - Anorexia
  - Disease Related Emergencies
    - Spinal Cord Compression
    - Hypercalcemia
    - PE/DVT
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