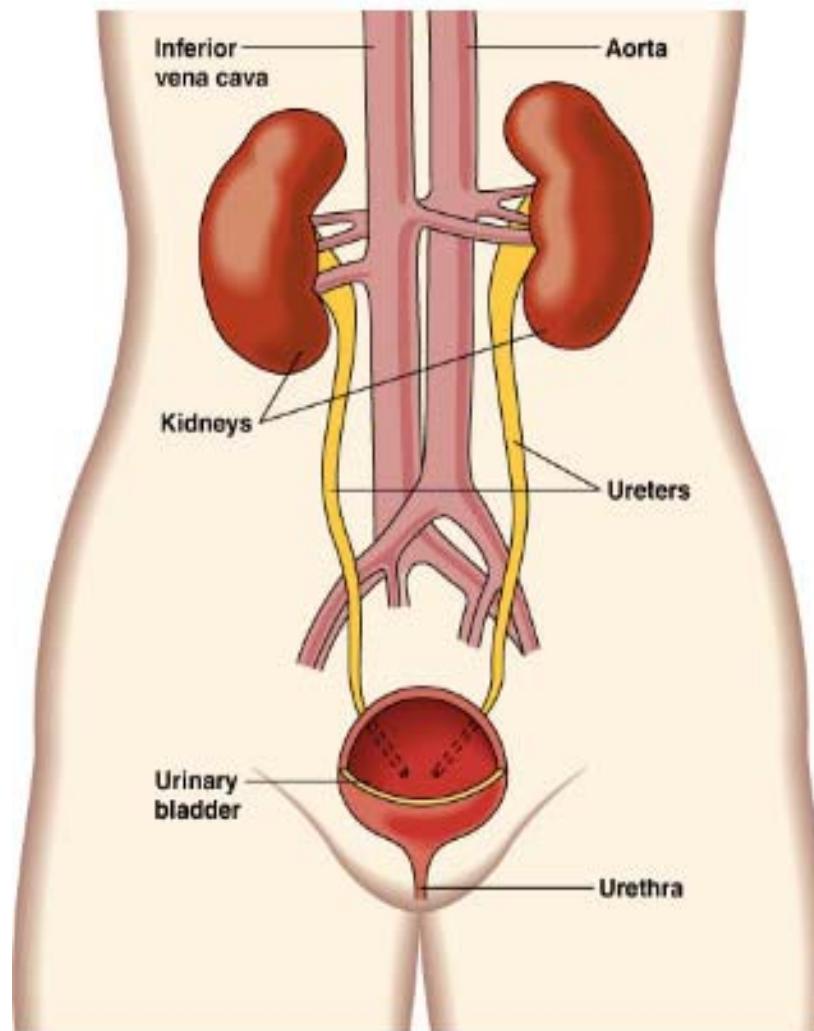


# Genitourinary Cancers: A Medical Oncology Perspective

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# Anatomy of the Genitourinary System



# Multidisciplinary Approach



# Medical Oncology:

## Types of Cancer Treatments

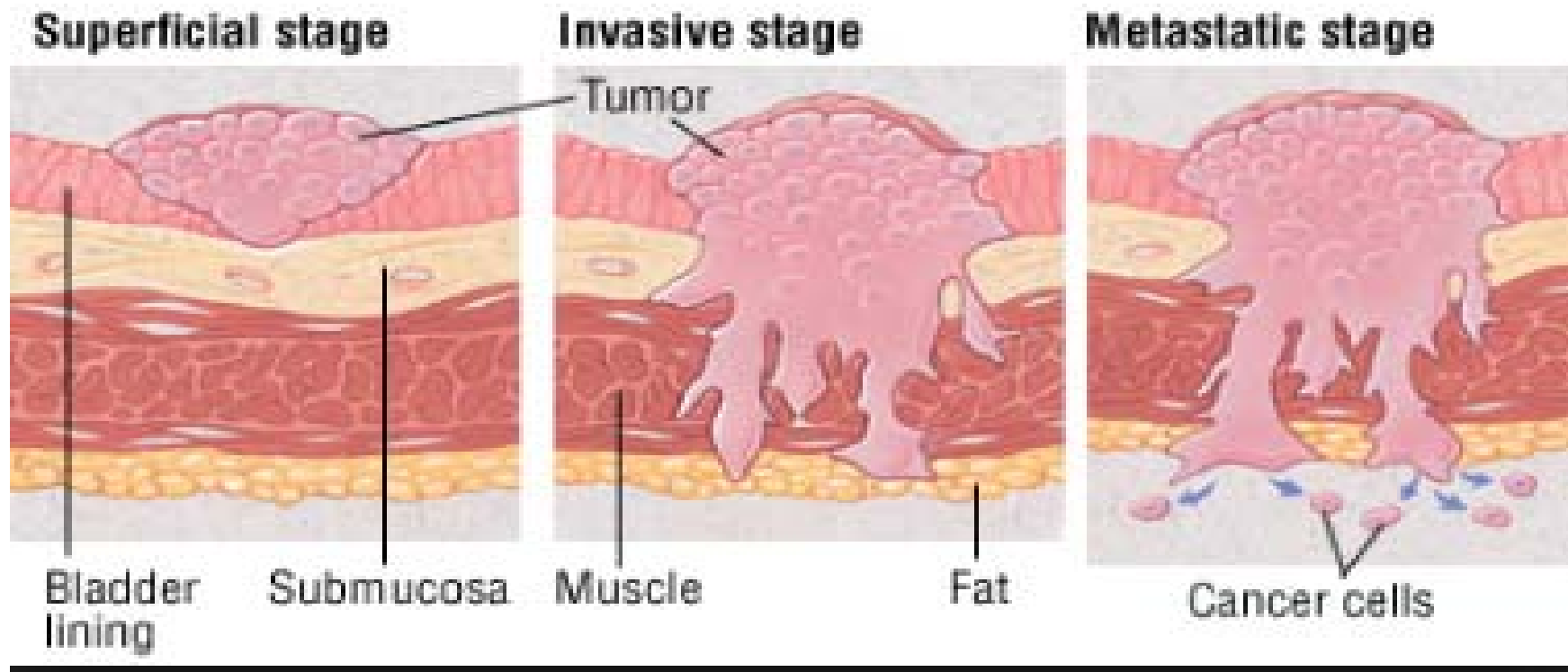
- **Chemotherapy:** Medicines that are 'cytotoxic', results in direct cell death. Given as a pill or infusion. Associated with multiple side effects including nausea, vomiting, and suppression of the immune system.
- **Immunotherapy:** Check point inhibitors are new medicines that use your own immune system cells to recognize the cancer and then kill the cancer cells. Given as an infusion.
- **Targeted therapy:** Medicines that stop cancer growth by targeting specific pathways or mutations which are driving the cancer. Given as a pill or infusion.

# Bladder Cancer

# Overview

- Average age at diagnosis is 73 years
- 4th most common cancer in men, less common in women.
- Smokers have 3X risk compared to non smokers
- Associated with occupational exposures: metal workers, painters, rubber, miners, cement workers, textile and electrical workers, leather workers

# Non Muscle Invasive (Low Risk) vs Muscle Invasive (High Risk)



Ref: Harvard Health Online

# Role of Chemotherapy Before Surgery

- Early treatment of micrometastases
- Possible tumor downstaging to a less complicated surgery
- Giving chemo after surgery can be delayed due to multiple postoperative complications
- Randomized trials and meta analyses show survival benefit for cisplatin based chemo before surgery for muscle-invasive bladder cancer.



# Treatment of Metastatic Disease (Stage IV)

- If patient is active with good kidney function, chemo with cisplatin is recommended.
- Many patients are not able to receive cisplatin , usually due to decreased kidney function or poor performance status.
- Chemo associated with multiple side effects and only modest response rates.
- Immunotherapy is now approved for patients ineligible for chemo!

# Preferred Chemotherapy Regimens

- Gemcitabine and cisplatin
- DDMVAC (dose dense methotrexate, vinblastine, doxorubicin, and cisplatin with growth factor support)

# Immunotherapy Options: 5 New Drugs Approved in 2017!

## 1<sup>st</sup> Line

- Atezolizumab
- Pembrolizumab

## 2<sup>nd</sup> Line

- Pembrolizumab
- Atezolizumab
- Durvalumab
- Nivolumab
- Avelumab

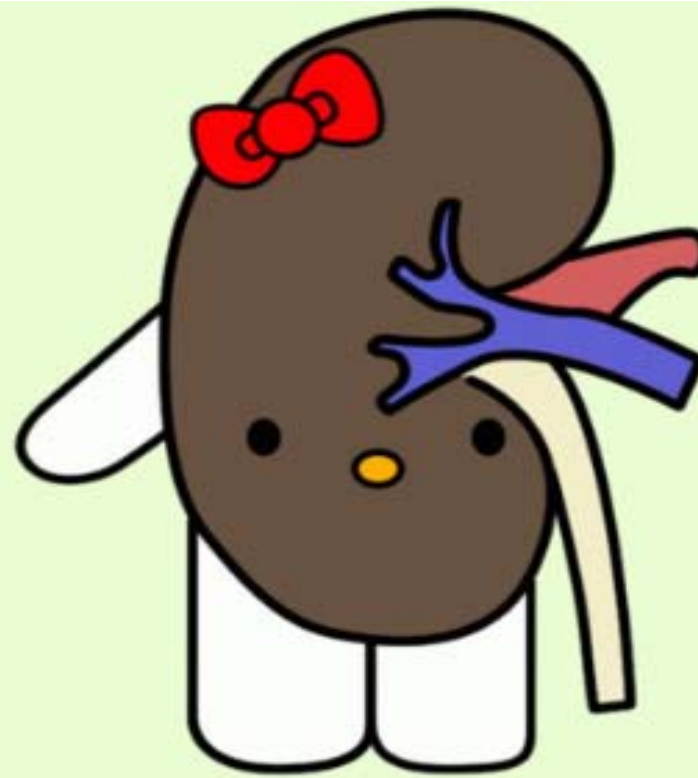
# 5-Year Relative Survival Rates by Stage for Bladder Cancer

- Stage 0: 98%
- Stage I: 88%
- Stage II: 63%
- Stage III: 46%
- Stage IV: 15%

Ref: National Cancer Institute's SEER database



# Renal Cell Carcinoma



**Hello Kidney**

# Overview

- Average age at diagnosis is 74 years old.
- 50% present with localized disease, 25% with locally advanced disease, 25% to 30% with metastatic disease.
- Sites of metastases: lung, lymph nodes, bone, central nervous system



# Role of Medical Oncology in RCC

- Consideration of targeted therapy with sunitinib after surgery for high risk disease
- Targeted therapy and immunotherapy for metastatic and relapsed disease
- Poor response with chemotherapy (except for some subtypes)

# Targeted Therapies for RCC

## 1<sup>st</sup> Line

- Pazopanib
- Sunitinib
- Cabozantinib
- Temsirolimus

## 2<sup>nd</sup> Line

- Axitinib
- Lenvatinib + everolimus
- Cabozantinib
- Pazopanib
- Sunitinib
- Sorafenib

# Immunotherapy for RCC

➤ 1<sup>st</sup> Line: Ipilimumab + Nivolumab

➤ 2<sup>nd</sup> Line: Nivolumab

# 5-Year Survival Rates by Stage for RCC

- Stage I : 81%
- Stage II: 74%
- Stage III: 53%
- Stage IV: 8%

Ref: National Cancer Institute's SEER database



We will always care for  
San Antonio. We will always  
educate healers. We will  
always search for answers.