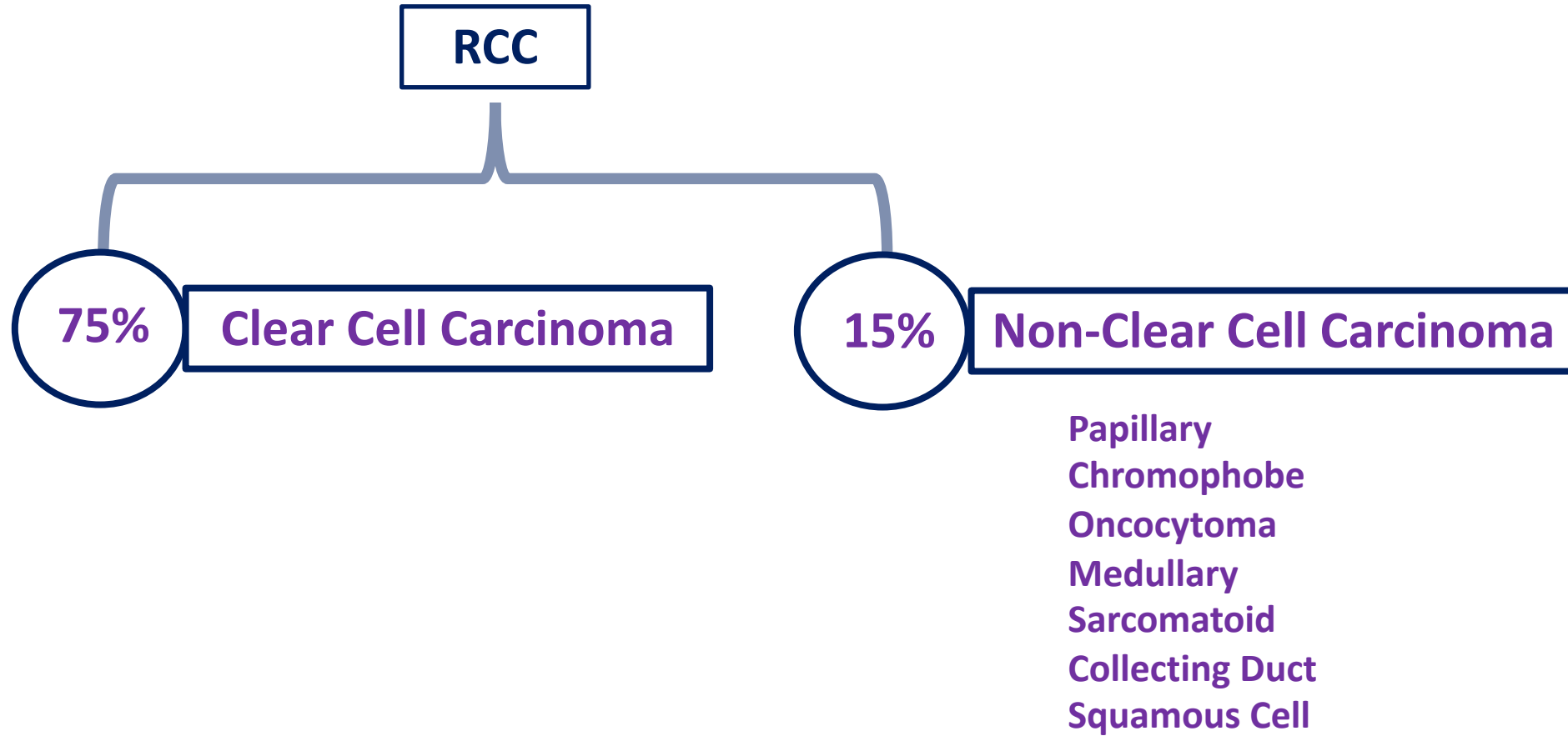


# Renal Cell Cancer

# Renal Cell Carcinoma



# Renal Cell Carcinoma: Risk Factors

## Clinical Risk Factors

### Medical Conditions

- HTN
- Obesity
- Smoking
- Male Gender
- Sickle Cell Disease (Medullary)
- Kidney Stones (Squamous)

### Exposures

- Smoking
- Cadmium
- Asbestos

## Genetic Risk Factors

### Genetic Conditions

- Von Hippel Lindau (Clear Cell)
- Tuberous Sclerosis (Clear Cell)
- Birt Hogg Dube (Chromophobe, Oncocytomas)

### Genetic Mutations

- MET (Papillary)

# RCC: Diagnosis

## DIAGNOSIS

### IMAGING:

CT or MRI

ONLY if symptoms: Brain MRI or skeletal survey

### BIOPSY:

Defer if planned nephrectomy

### IHC:

PAX2+

PAX8+

CK7-, CK20-

## STAGING

### T Stage

T1 = < 7 cm

T2 = > 7 cm

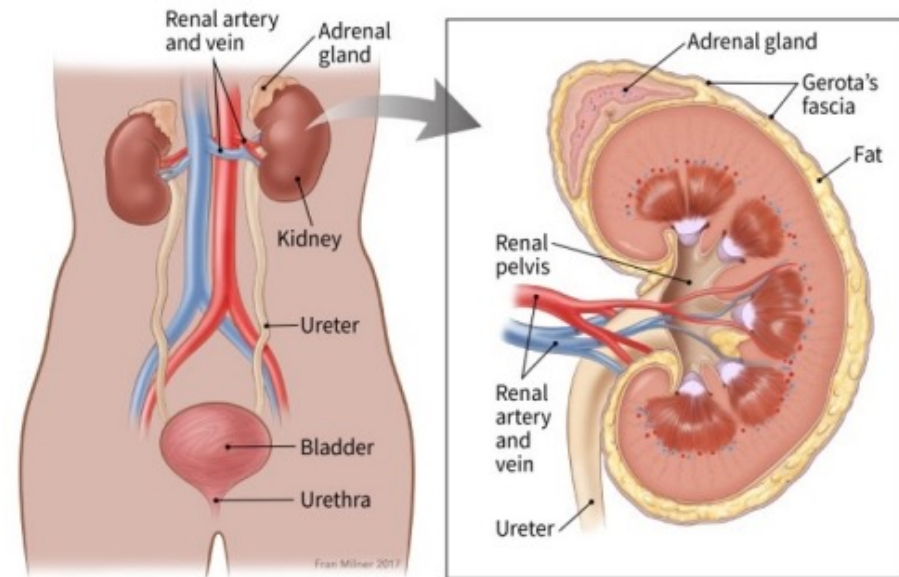
T3 = invasion into perinephric tissue or tumor thrombus

T4 = Extra-renal, beyond Gerota's Fascia

### Stages

Stage III = T3 or N+

Stage IV = T4



# Clear Cell RCC: Risk Stratification

IMDC Prognostic Criteria	
<b>Clinical Risk Factors</b>	< 1 year from diagnosis to systemic treatment Poor PS/ECOG
<b>Lab Risk Factors</b> Ca + CBC	Hypercalcemia Neutrophilia Anemia Thrombocytosis
<b>1 point per risk factor</b>	

## PROGNOSIS

**Favorable [0 points]**

Avg OS = 37 months

**Intermediate [1-2 points]**

Avg OS = 28 months

**Poor [3-6 points]**

Avg OS = 9 months

# Clear Cell RCC: Early Stage Treatment

## Treatment Stage I-III

### 1. Observation

If small (< 2 cm)

If limited life expectancy

### 2. Partial or Radical Nephrectomy

Partial: small (<7 cm/T1), elderly pt for nephron sparing

Radical: large (>7 cm/T2), complex, vascular or LN involvement

### 3. Stage III: Consider Adjuvant Sunitinib

Consider adjuvant sunitinib for high-risk pts

Not routinely used: unclear OS benefit, significant side effects

# Clear Cell RCC: Metastatic Treatment Front-Line

## FAVORABLE RISK

### 1. Tyrosine Kinase Inhibitor + Immunotherapy

Axitinib + Pembrolizumab  
Lenvatinib + Pembrolizumab  
Cabozantinib + Nivolumab

## INTERMEDIATE RISK

### 1. TKIs + IO

Axitinib + Pembrolizumab  
Lenvatinib + Pembrolizumab  
Cabozantinib + Nivolumab

### 2. TKIs

Cabozantinib

### 3. IO

Ipilimumab + Nivolumab

## POOR RISK

## Oligometastatic Disease:

**all risk groups:** consider resection of metastasis: if solitary, resectable site (ex: lung lesion)

# Clear Cell RCC: Other Agents, 2<sup>nd</sup> Line or POD

## FAVORABLE RISK

Pazopanib  
Sunitinib  
Cabozantinib  
Axitinib + Avelumab  
Ipilimumab + Nivolumab

## INTERMEDIATE RISK

Axitinib  
Nivolumab  
Lenvatinib + Everolimus  
mTOR Inhibitors: Everolimus, Temsirolimus  
HD- IL2

## POOR RISK



# Non-Clear Cell RCC: Treatment

## Chromophobe/Oncocytoma

More indolent, rarely metastasize

Surgery +/- RT

## Collecting Duct/Medullary

Gemcitabine + Platinum

## Angiomyolipoma

Everolimus

## Sarcomatoid/Papillary

Gemcitabine + Sunitinib

Gemcitabine + Doxorubicin

# Renal Cell Cancer Reference Handout

## RCC Dx

RCC

Clear Cell Carcinoma (75%)

Non-Clear Cell Carcinoma (15%)

Chromophobe, Oncocytoma,  
Papillary, Sarcomatoid, Medullary,  
Collecting Duct

### STAGING

#### T Stage

T1 = < 7 cm

T2 = > 7 cm

T3 = Perinephric tissue/tumor thrombus

T4 = Extra-renal, beyond Gerota's Fascia

#### Stages

Stage III = T3 or N+

Stage IV = T4

## Clear Cell RCC Localized Tx Stage I-III

### 1. Observation

If small (< 2 cm) or limited life expectancy

### 2. Partial or Radical Nephrectomy

Partial: small (<7 cm/T1), elderly pt for nephron sparing)

Radical: large (>7/T2), complex, vascular or LN involvement

### 3. Stage III: Consider Adjuvant Sunitinib

Consider adjuvant sunitinib for high-risk pts

## Clear Cell RCC Metastatic Tx

### IMDC Prognostic Criteria

#### Clinical Risk Factors

< 1 year from dx to systemic tx  
Poor PS/ECOG

#### Lab Risk Factors

Ca + CBC

Hypercalcemia  
Neutrophilia  
Anemia  
Thrombocytosis

1 point per risk factor

### Favorable [0 points]

Avg OS = 37 months

### Intermediate [1-2 points]

Avg OS = 28 months

### Poor [3-6 points]

Avg OS = 9 months

### FAVORABLE RISK

#### 1. TKI + IO

Axitinib + Pembrolizumab

Lenvatinib + Pembrolizumab

Cabozantinib + Nivolumab

#### Oligometastatic:

Consider resection of metastasis:

if solitary, resectable site (ex: lung lesion)

### INTERMEDIATE RISK

### POOR RISK

#### 1. TKIs + IO

Axitinib + Pembrolizumab

Lenvatinib + Pembrolizumab

Cabozantinib + Nivolumab

#### 2. TKIs

Cabozantinib

#### 3. IO

Ipilimumab + Nivolumab