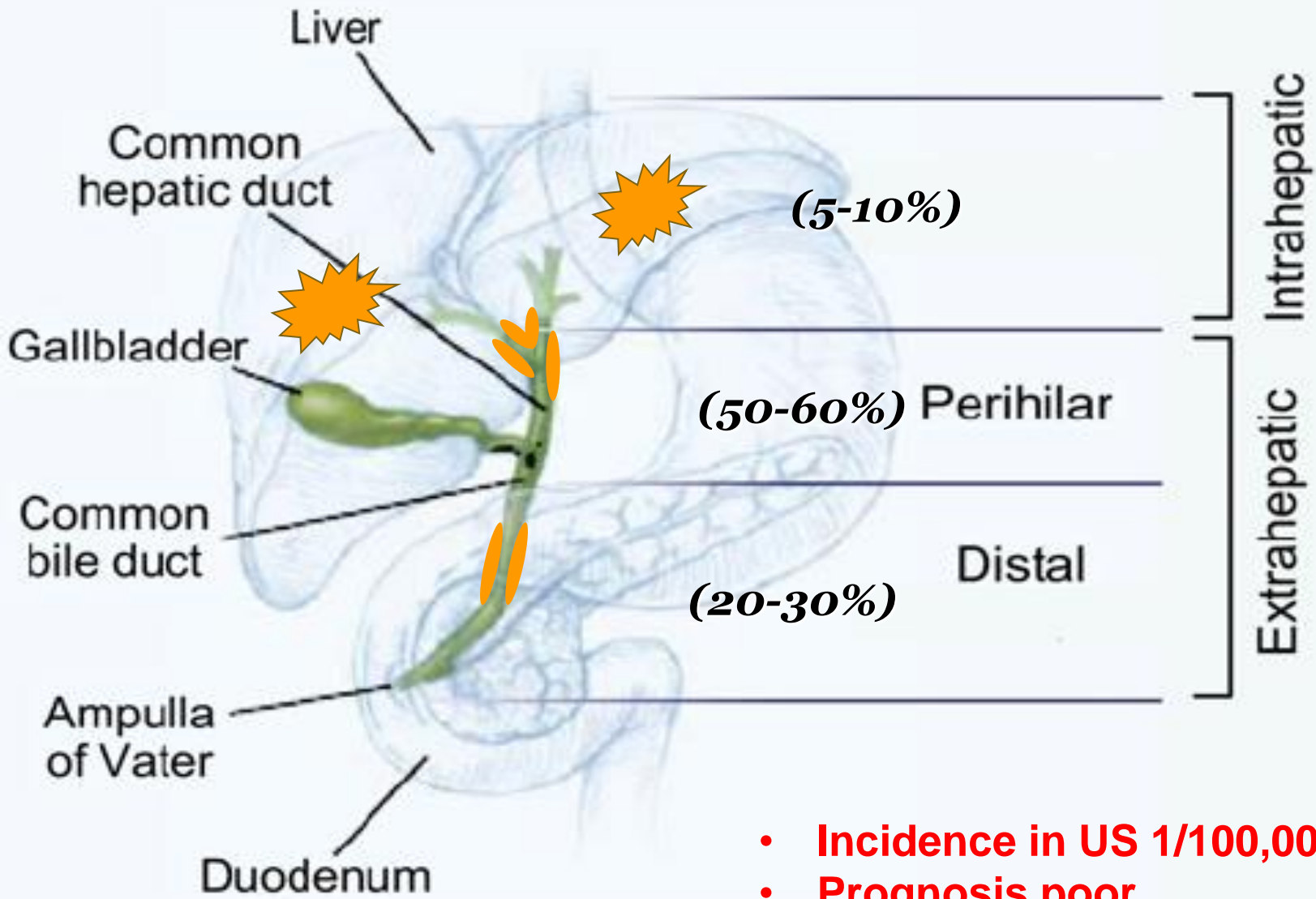


# LIVER TRANSPLANTATION FOR CHOLANGIOCARCINOMA



- **Incidence in US 1/100,000**
- **Prognosis poor**

# Liver Transplant for Cholangiocarcinoma

- Patients who are not surgical resection candidates  
AND/OR
- Have underlying liver disease (PSC)  
AND
- Meet highly selective criteria

# Liver Transplant for Cholangiocarcinoma

- Protocols for liver transplantation for CCA primarily focus on unresectable peri-hilar CCA
- Patients are eligible for standard MELD exception points if the center has a United Network for Organ Sharing (UNOS)-approved protocol
  - Most protocols include: Neoadjuvant chemoradiation therapy and staging laparotomy/laparoscopy

# UW Protocol: Liver Transplantation for

## Peri-Hilar CCA

Age 18+ years

Must satisfy UNOS criteria for diagnosis of CCA:

- Malignant appearing peri-hilar stricture plus at least one of the following:
- Malignant cytology or histology (not just dysplasia)
- CA 19-9 > 100 U/mL (no cholangitis)
- Polysomy by FISH
- If a peri-hilar mass is present, it is not > 3cm in radial direction on cross-sectional imaging

The peri-hilar CCA is

# UW Protocol: Liver Transplantation for

## Peri-Hilar CCA

- Negative metastatic work-up (Cross sectional imaging and EUS with node sampling)
- Patient must otherwise be a suitable LT candidate as per the standard UW LT evaluation criteria

# UW Protocol: Liver Transplantation for

## Peri-Hilar CCA Exclusion Criteria

- Mass lesion on cross-sectional imaging  $> 3$  cm in radial direction
- Intrahepatic CCA
- Metastatic disease outside the liver
- Prior biliary resection or surgery with disruption of the tumor plane
- Trans-peritoneal biopsy of the primary tumor (very high risk for tumor recurrence post-LT)

# UW Protocol: Liver Transplantation for

## Peri-Hilar CCA Neoadjuvant Therapy

- External beam radiation therapy
- 5FU/Leucovorin
- Capecitabine



# UW Protocol: Liver Transplantation for

## Peri-Hilar CCA

### As patient nears time for liver transplant

#### Staging laparotomy/laparoscopy

- Assess for peritoneal or nodal metastatic disease that would preclude complete resection of the tumor
- If staging lap is negative, then patient is cleared for allograft offers

# UW Protocol: Liver Transplantation for

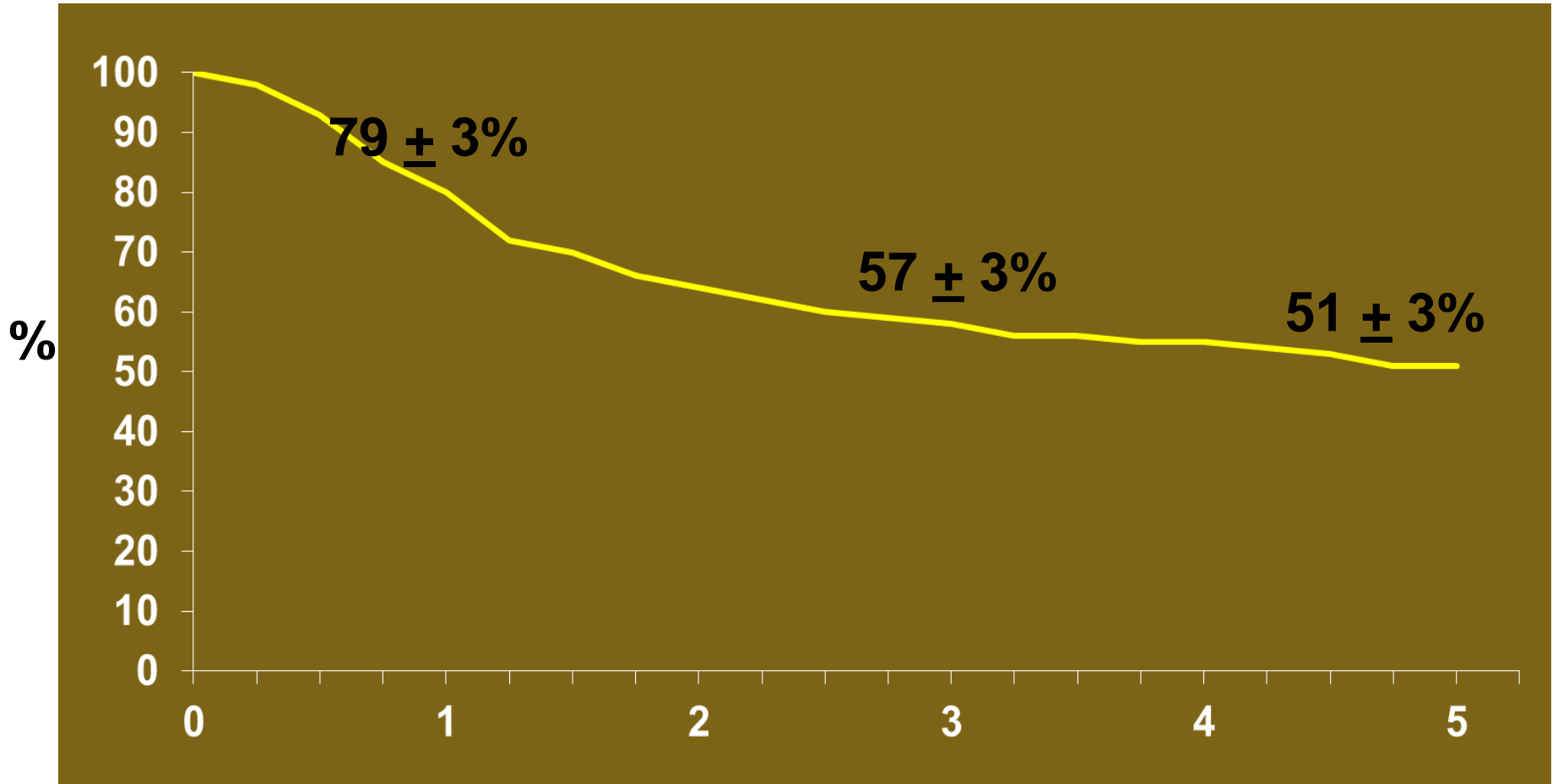
## Peri-Hilar CCA

### Drop-Out Criteria

- Evidence of metastatic disease on interval imaging
- Positive node on EUS
- Positive staging lap
- Disease progression on treatment protocol
- Fails transplant evaluation

# PATIENT SURVIVAL AFTER START OF THERAPY

1993 – 2016 (INTENTION TO TREAT)



# PATIENT SURVIVAL AFTER TRANSPLANTATION

1993 – 2016

N=181

