

Operation after CCRT in Patient with Locally Advanced Unresectable Pancreatic Cancer

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평소 특별한 질환 없는 46세 여자 환자가 복통을 주소로 본원 내원하였다. 본원에서 시행한 검사상 celiac axis를 involve 한 locally advanced unresectable pancreatic cancer로 진단받고, palliative chemotherapy (gemcitabine plus erlotinib)을 6 cycle 시행하였으며, chemoradiation을 시행하였다. 이후 재평가 하였을 때 병변의 크기 감소하였고, 타 장기로의 전이 관찰되지 않아 operable 한 것으로 판단되어 수술을 시행하였다. 수술은 R0 resection으로 성공적이었으며, 수술 후 8일째 stomach의 ischemic perforation이 발생하였으나, 보존적 치료 후 호전되어 현재 외래에서 NED state로 f/u 중이다.

Locally advanced pancreatic cancer의 치료는 환자의 performance status를 고려하여 chemotherapy나 CCRT를 고려할 수 있다. 한 연구에 의하면 neoadjuvant therapy 후 약 30%에서 resection이 가능하였다고 보고되었으며, 이 경우 유의한 생존율의 향상을 보였다. 또 neoadjuvant therapy로 CCRT가 항암 치료만 시행한 경우에 비해 더 우수한 것으로 알려져 있다. 하지만 현재는 제한적 상황에서 수술 전 항암 방사선 후 근치적 수술이 가능하며, 따라서 환자의 여러 상황을 고려하여 주의 깊게 선택되어야 하겠다.

46/F

- Chief complaints: Epigastric pain for several weeks

- Present Illness

복통으로 인근 병원에서 내시경 시행 후 약물 치료 중 증상 악화되어 응급실 방문 후 내원.

- Past History: DM/HTN/TB/Hepatitis - all denied
- Smoking/alcohol: (-)/social
- Family history: none
- Physical examination: none

Lab finding

CBC: 3700 (Seg 46.0%) – 8.3/26.6 – 188K

PT INR: 0.99/aPTT 33.0 sec

BUN/Cr: 8/0.68 mg/dL

LFT: AST/ALT 19/18 IU/L T-bilirubin 0.3 mg/dL

Amylase/Lipase: 50/122 U/L

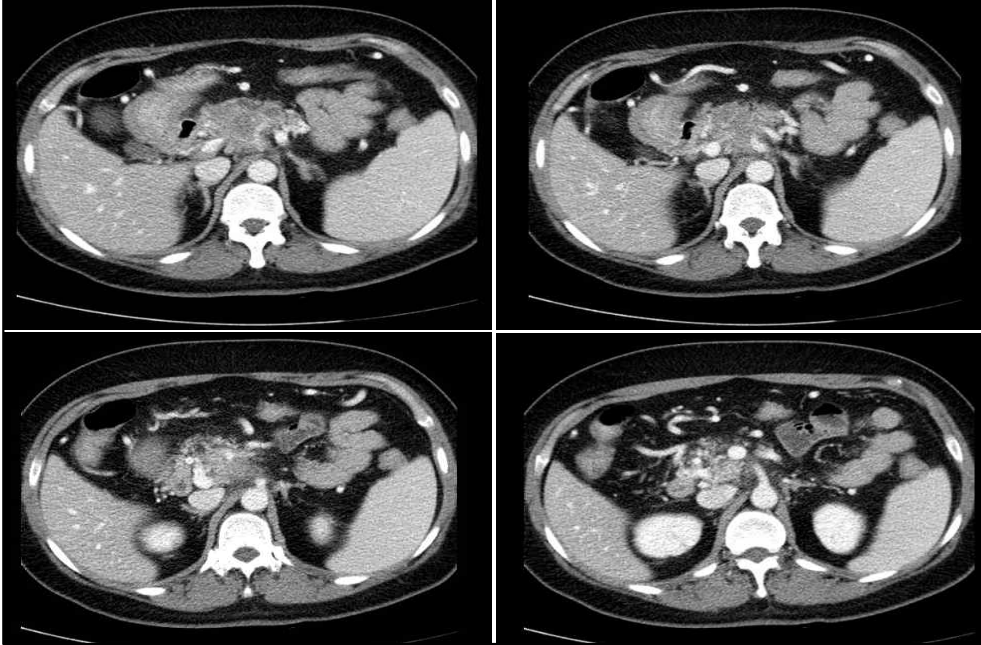
T-protein/albumin: 7.2/4.2 g/dL

Na/K/Cl: 138/4.2/105 mg/dL

CRP: 1.1 mg/dL

CA19-9: 430 U/mL CEA: 4.6 ng/mL

Initial CT (2011.2.6)



Assessment and Plan

- **Impression**
 - Locally advanced pancreatic cancer (cT4NxM0)

- **Plan**
 - Bx. Confirm 후 palliative CTx ± RT

Progress

- Gemcitabine + Erlotinib chemotherapy
 - 1st~2nd cycle: 2011. 2. 24 – 2011. 4. 21
- Palliative CCRT
 - RTx dose: 55.8 Gy/31Fx, capecitabine based
 - 2011. 5. 2 – 2011. 6. 16
- Gemcitabine + Erlotinib chemotherapy
 - 3rd~6th cycle: 2011. 7. 5~2012. 1. 17

f/u CT

2011.6.25 (after CTx & CCRT)



2011.2.6 (Initial CT)



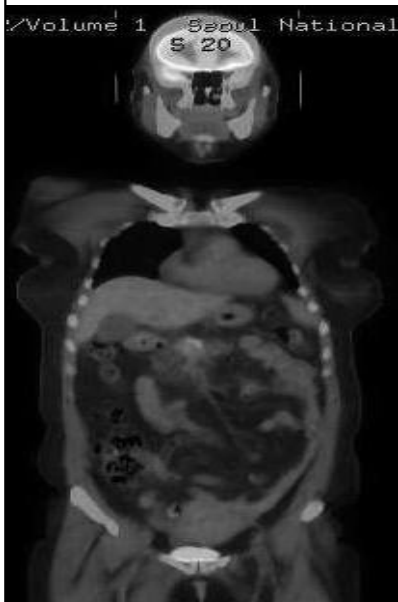
2012.1.31 (after 6th CTx)



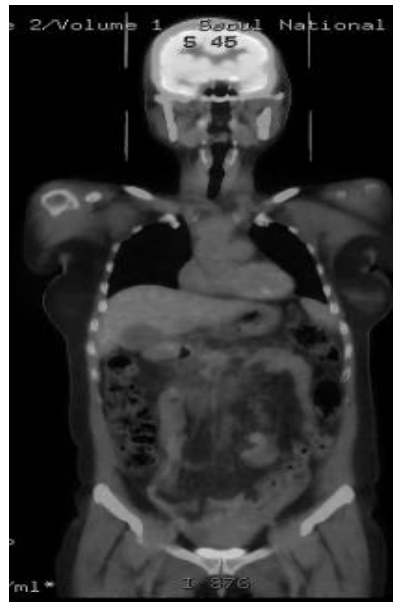
Evaluation of respectability

PET

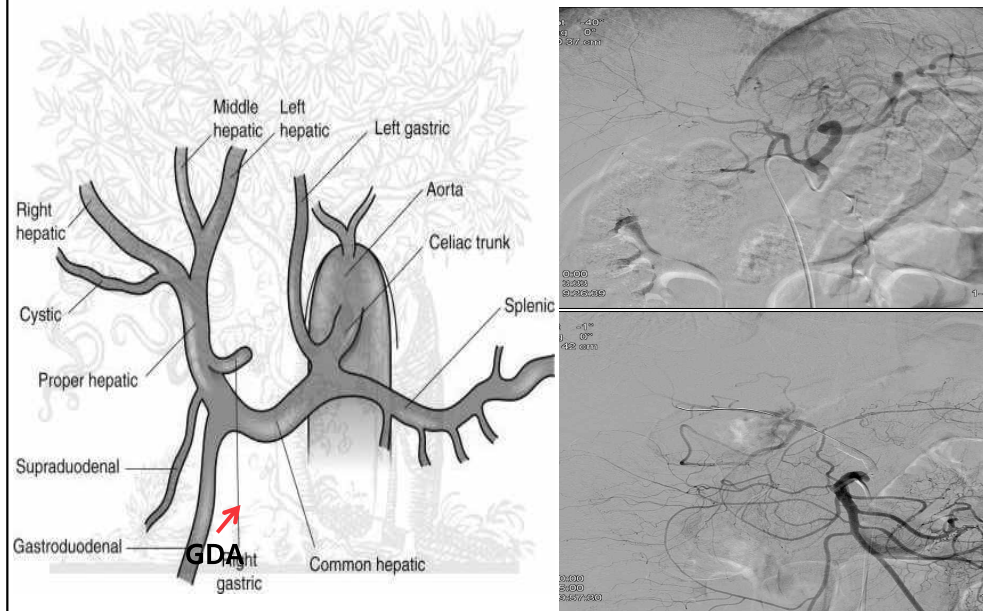
2011-2-11



2012-3-5

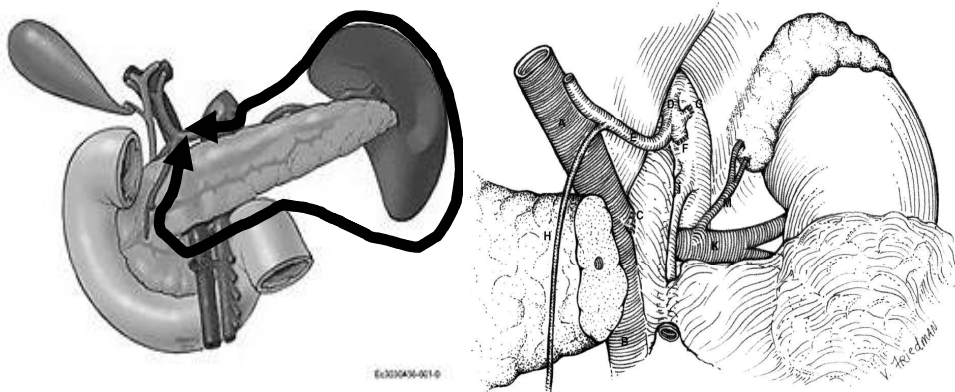


Diagnostic angiography (2012.2.27)



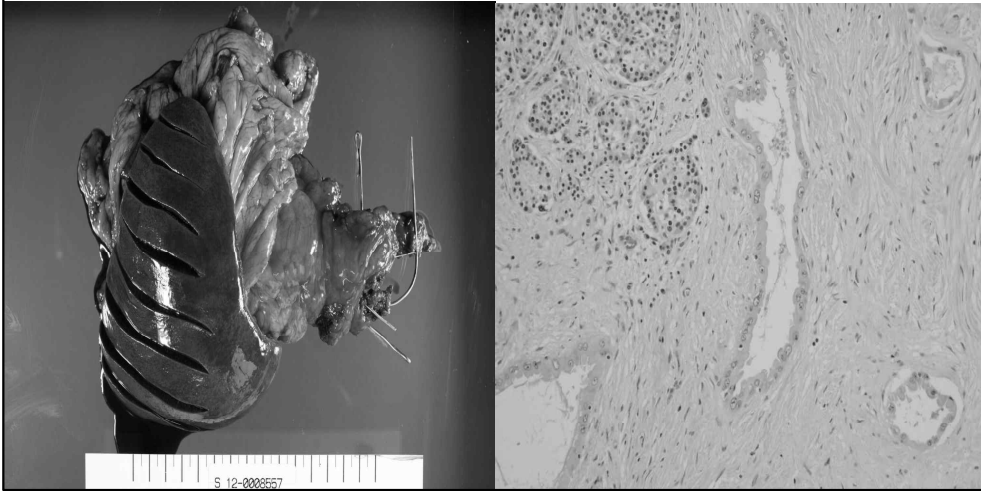
Operation (2012.3.8)

- Appleby operation/RAMPS (radical antegrade modular panreatosplenectomy)



Pathologic findings (I)

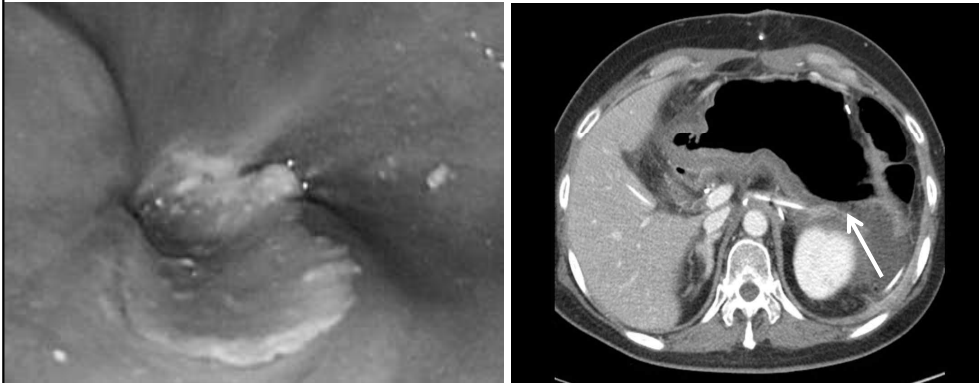
- Pancreas, Appleby operation:
 - adenocarcinoma, moderately differentiated



Pathologic findings (II)

- 1) Status post-chemotherapy and radiotherapy
- 2) Size of tumor: 3.3 x 2.8 x 2.6cm
- 3) location: head
- 4) Depth of invasion: peripancreatic soft tissue
- 5) main vessel invasion (CA/PV/HA): absent
- 6) Surgical margins: free of tumor
- 7) Lymph node: no meta. In 16 LN
- 8) Perineural invasion: not identified
- 9) Associated findings: dense fibrosis with mucin pool
- 10) Celiac a. & Portal vein: Fibrous adhesion to tumor without tumor invasion
- 11) Pathologic tumor stage (pTNM): ypT3N0

Post OP Progression

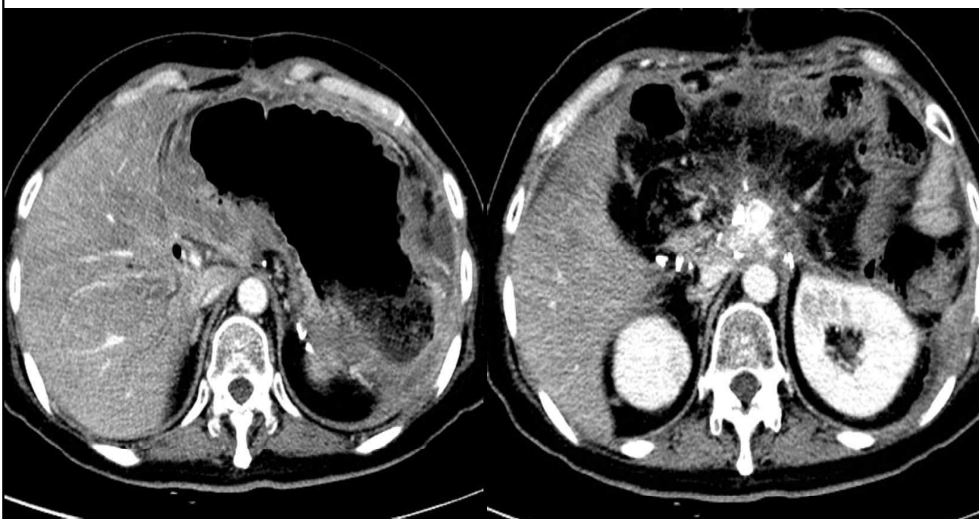


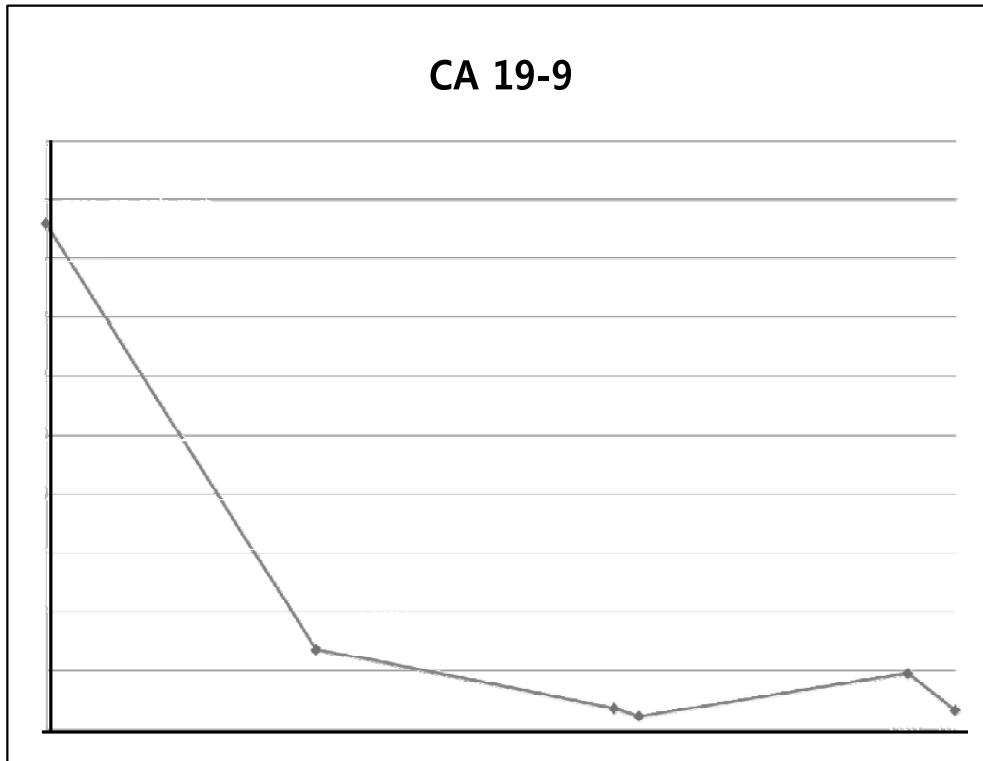
- 2012. 3.16(POD #8)
S: abdominal pain & febrile sense
O: BT 38.0 °C
abd. CT: perforation in HB-PW of stomach
A: ischemic perforation of stomach
P: NPO, antibiotics and PCD insertion

f/u CT

2012-4-5

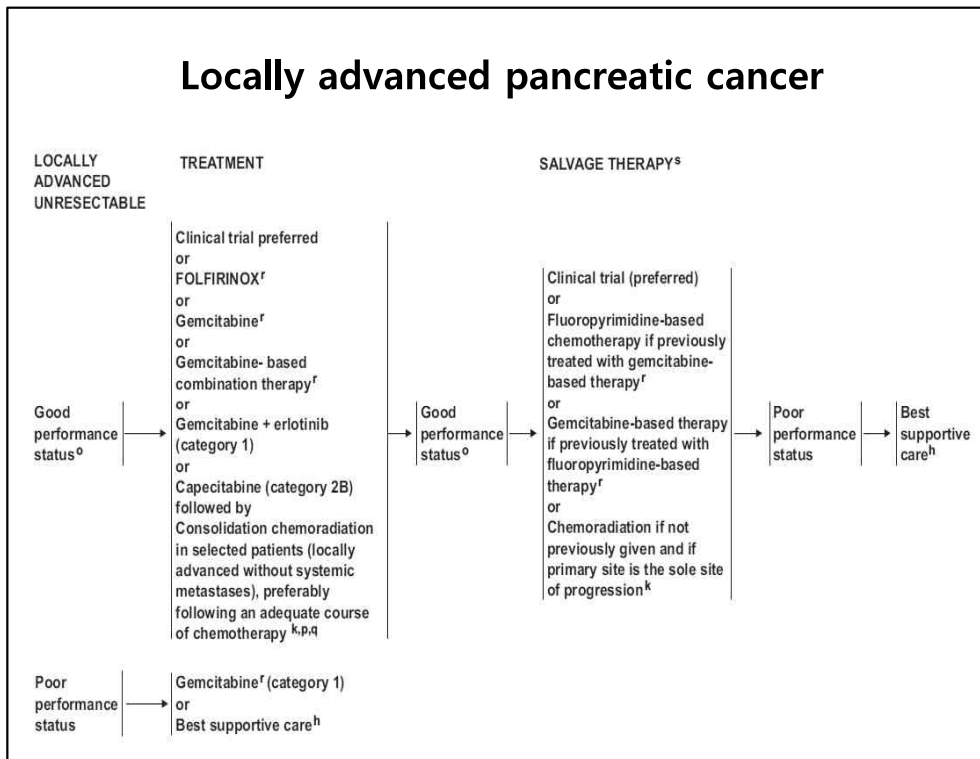
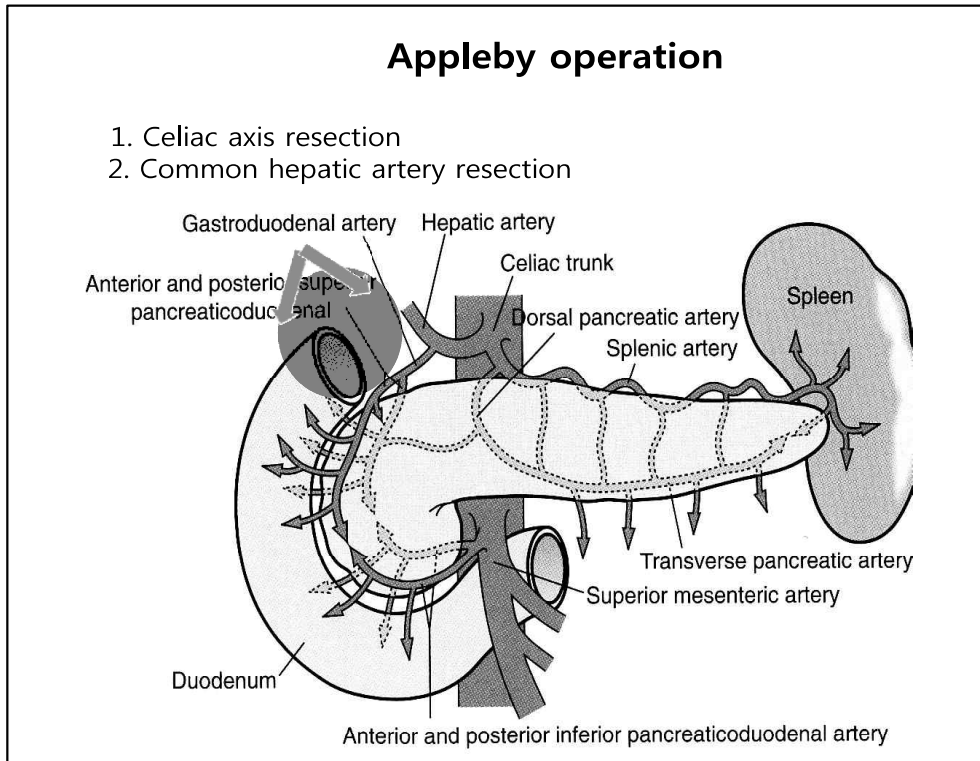
2012-12-5





Post OP Progression

- 현재 NED state로 OPD f/u 중임.



CRT in pancreatic cancer

1. Neoadjuvant/resectable
2. Bordeline resectable
3. Locally advanced/unresectable
4. Adjuvant/resectable
5. Palliative

2012 NCCN guidelines

Unresectable/Locally advanced (non-metastatic):

- ▶ Upfront fluoropyrimidine (CI 5-FU or capecitabine)-based chemoradiation (CRT) in select patients.
 - ▶ Upfront gemcitabine- based CRT in select patients.^{7,8}
 - ▶ Induction chemotherapy (2-4 cycles) followed by 5-FU or gemcitabine-based CRT.^{9,10}
- Options include:
- ▶ RT 45-54 Gy in 1.8-2.5 Gy fractions or
 - ▶ 36 Gy in 2.4 Gy fractions.¹¹
- Following CRT, additional maintenance chemotherapy is sometimes used, especially if tumors are still unresectable.

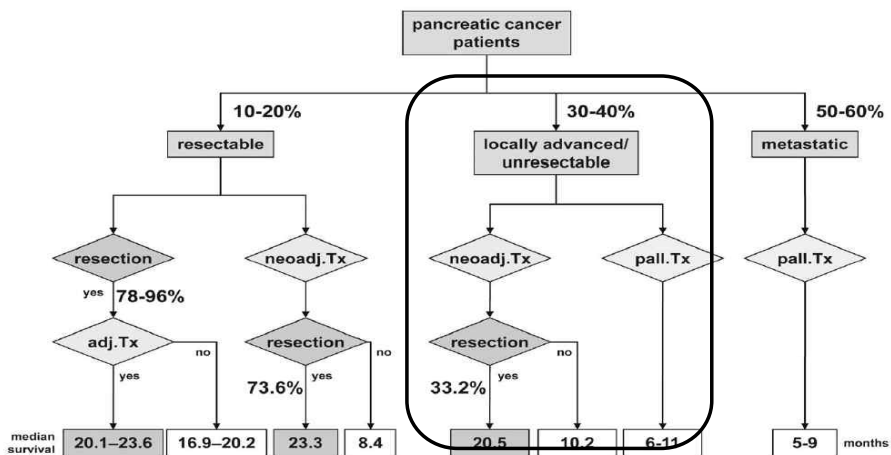
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Preoperative/Neoadjuvant Therapy in Pancreatic Cancer: A Systematic Review and Meta-analysis of Response and Resection Percentages

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Impact of CCRT after chemotherapy in locally advanced pancreatic cancer

