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# Pancreatic Cancer: Define Unresectable

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# Pancreatic cancer: define unresectable

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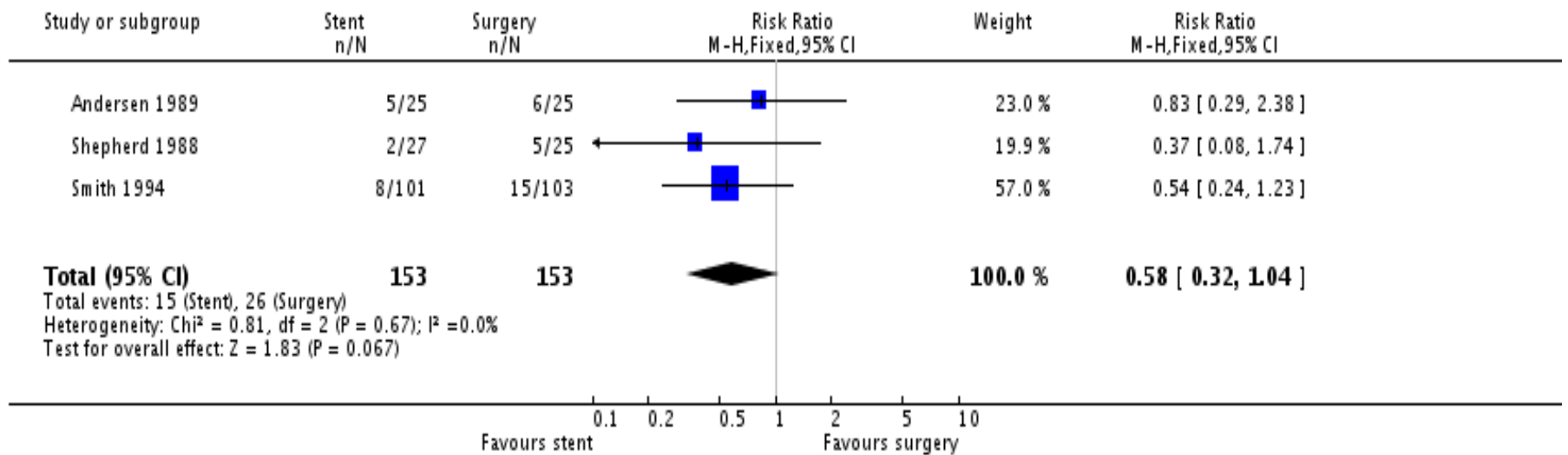
SWOSA 2009

Cochrane Database Syst Rev. 2006 Jan 25;(1):CD004200.

**Palliative biliary stents for obstructing pancreatic carcinoma. (Moss AC, Morris E, Mac Mathuna P )**

- 21 trials (1,454 patients) of endobiliary stent *versus* surgical bypass
- 30 day mortality: RR 0.58, 95% CI 0.32, 1.04
- Complications: RR 0.60, 95% CI 0.45 - 0.81
- Recurrent biliary obstruction: RR 18.59, 95% CI 5.33 - 64.86
- Biliary obstruction - metal versus plastic stent: RR 0.52, 95% CI 0.39 - 0.69

Review: Palliative biliary stents for obstructing pancreatic carcinoma  
 Comparison: 1 Stent versus Surgery  
 Outcome: 4 30-day mortality



- Resectable
- Curable
- Resection for cure
- Resection for improvement in length and quality of life
  - *Unresectable*: the mortality/morbidity of resection is not substantially less than the gain in quantity and quality of life

Proceedings of the Consensus Conference  
(American Hepato-Pancreato-Biliary Association ,  
Society for Surgery of the Alimentary Tract, the  
Society of Surgical Oncology, the Gastrointestinal  
Symposium Steering Committee, and the University  
of Texas M. D. Anderson Cancer Center)

*Ann Surg Oncol (2009) 16:1727–1756*

# Pre-operative staging

- CT remains the diagnostic modality of choice but must be expertly performed
- CT poor at seeing pancreatic lesions < 2 cm, tiny liver lesions and peritoneal implants
- CT prediction of unresectability: 90 – 100% accurate
- CT prediction of resectability: 70 – 90 % accurate

# Definition of resectable; borderline and unresectable pancreatic carcinoma

- *Unresectable* if distant metastases, portal vein thrombosis (major) or circumferential encasement of celiac, hepatic or SMA
- *Resectable* if no metastases, no abutment or distortion of portal vein or SMV and clear fat planes around celiac, hepatic and superior mesenteric arteries



# Pre-op evaluation: tissue

## CONSENSUS STATEMENT

1. A tissue diagnosis is mandatory in any patient who is being considered for neoadjuvant therapy.
2. If the patient is a good surgical candidate, and if the clinical presentation and imaging are typical for resectable adenocarcinoma, the clinician may proceed without a tissue diagnosis.
3. EUS-guided FNA is the best modality for detecting tumor and for obtaining a tissue diagnosis, even if the tumor is poorly visualized by other imaging modalities.

Biopsy of possible distant metastasis  
preferential to pancreas biopsy

# Borderline resectable

2. Tumors considered borderline resectable include the following:
  - a. No distant metastases.
  - b. Venous involvement of the SMV/portal vein demonstrating tumor abutment with or without impingement and narrowing of the lumen, encasement of the SMV/portal vein but without encasement of the nearby arteries, or short segment venous occlusion resulting from either tumor thrombus or encasement but with suitable vessel proximal and distal to the area of vessel involvement, allowing for safe resection and reconstruction.
  - c. Gastroduodenal artery encasement up to the hepatic artery with either short segment encasement or direct abutment of the hepatic artery, without extension to the celiac axis.
  - d. Tumor abutment of the SMA not to exceed  $>180^\circ$  of the circumference of the vessel wall.

# Staging laparoscopy

## *Consensus Statement*

1. For apparent resectable pancreatic cancer, staging laparoscopy should be used selectively on the basis of clinical predictors that optimize yield. These predictors include:
  - a. Pancreatic head tumors of  $>3$  cm.
  - b. Tumors of the pancreas body and tail.
  - c. Equivocal findings on CT scan.
  - d. High CA 19-9 levels ( $>100$  U/mL).
  
2. For locally advanced unresectable pancreatic cancer without radiographic evidence of distant metastasis, staging laparoscopy may be used to rule out subclinical metastatic disease to optimize treatment selection.

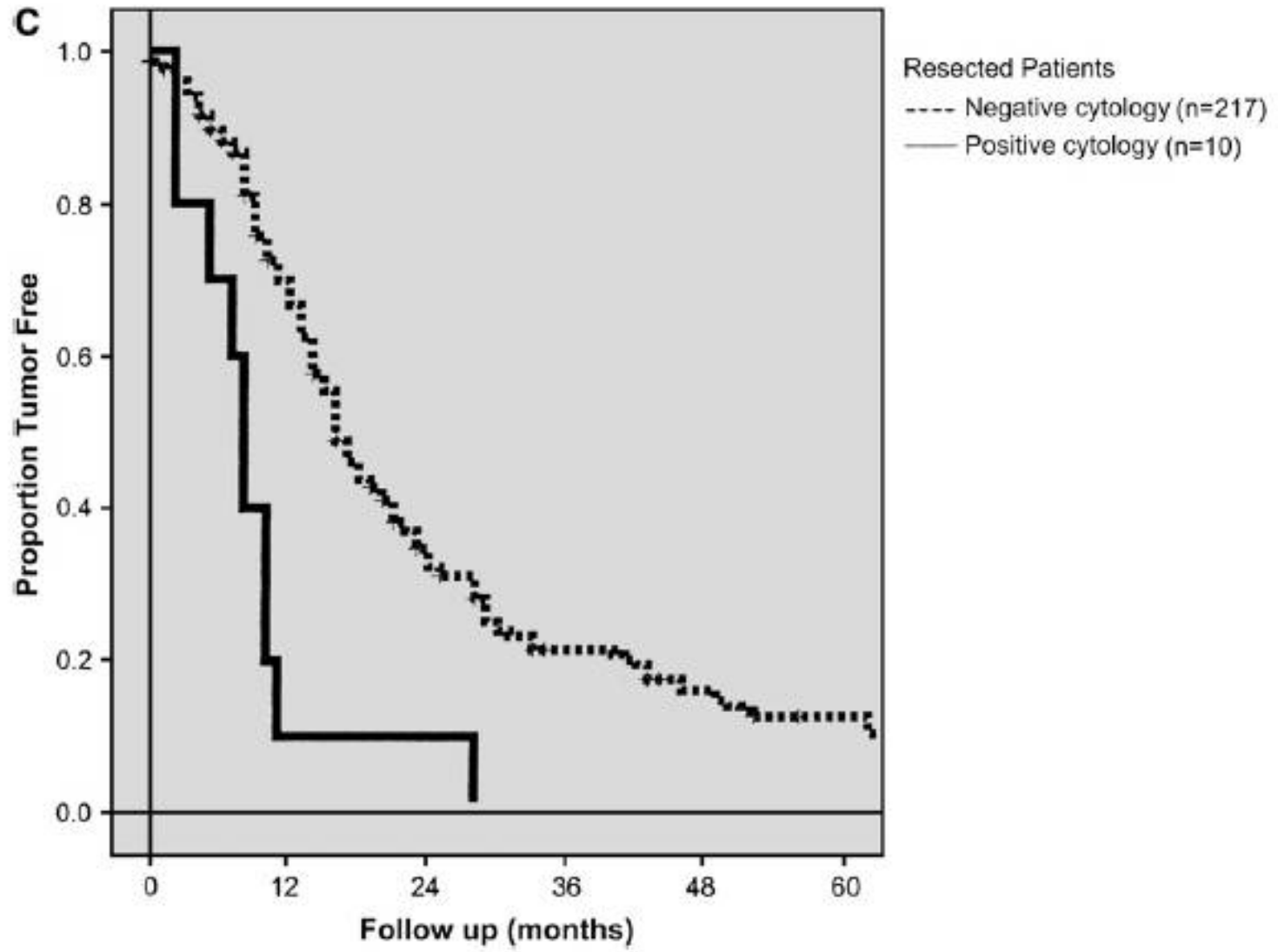


Table 2. Prevalence of positive peritoneal washings

	Resected (n = 217)	Locally advanced (n = 95)	Metastatic (n = 150)	Metastatic liver (n = 84)	Metastatic Peritoneal (n = 66)
Pos cytology	10 (5%)	10 (11%)	56 (37%)	21 (25%)	35 (53%)
Median survival	11 mo	10 mo	7 mo	6 mo	7 mo
Neg cytology	16 mo	10 mo	7 mo	6 mo	8 mo
Pos cytology	8 mo	6 mo	7 mo	6 mo	7 mo
2-yr OS	31%	7%	7%	5%	9.6%
Neg cytology	36%	5%	8%	3%	12%
Pos cytology	10%	20%	6%	5%	4%
	( $P < 0.001$ )	( $P = 0.7$ )	( $P = 0.9$ )	( $P = 0.06$ )	( $P = 0.11$ )

*Ferrone et al. J Gastrointestinal Surg 2006; 10: 1347-53*

# Would extended lymphadenectomy increase resectability?

TABLE 1 Prospective randomized trials of pancreaticoduodenectomy with standard versus extended lymphadenectomy for pancreatic head adenocarcinoma

	No. patients	Node dissection	R <sub>0</sub>	No. nodes harvested	Patients with positive N <sub>2</sub> nodes (%)	Morbidity	Mortality (%)	Adjuvant therapy	Quality of life	Actuarial survival
Pedrazzoli et al. <sup>14</sup>		En bloc	75%	<i>P</i> < 0.03	NA	Same		No	NA	4 year, NS
PD	40			13.3			5			12%
PD/ELND	41			19.8			5			6%
Yeo et al. <sup>16-19</sup>		Sequential	90%	<i>P</i> = 0.001	15%	LOS, DGE, fistula, wound infection		Yes	Validated tool, no change, mean 2 year	5 year, NS
PD	81			17			3.7			10%
PD/ELND	82			28.5			2.5			25%
Nimura et al. <sup>15</sup>		En bloc	NA		NA	Transfusion, diarrhea		No	No validated tool	3 year, NS
PD	51			13			0			28.5%
PD/ELND	50			40			2			16%
Famell et al. <sup>20</sup>		Sequential	79%	<i>P</i> < 0.01	29%	Transfusion, diarrhea, bowel control		Yes	Validated tool, poorer at 4 mo	5 year, NS
PD	38			15			0			16.5
PD/ELND	34			36			3			16.4

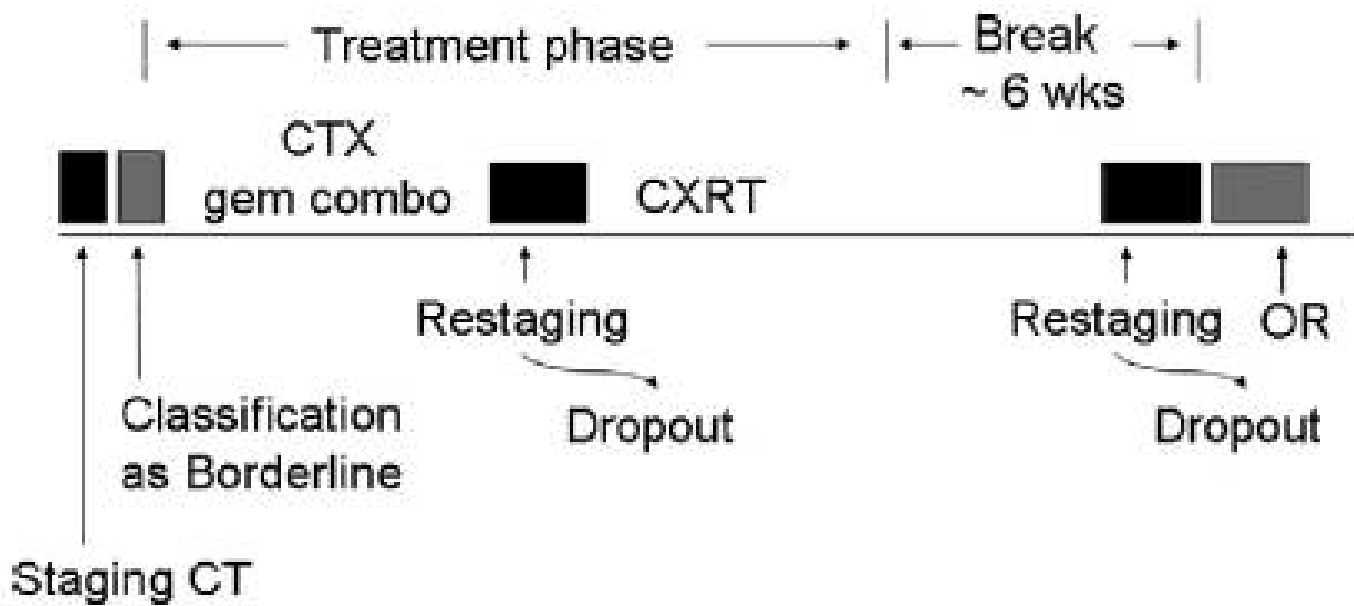
*pancreaticoduodenectomy* Standard pancreaticoduodenectomy, *LOS* length of stay, *pancreaticoduodenectomy /ELND* pancreaticoduodenectomy with extended lymphadenectomy, *DGE* delayed gastric emptying, *R<sub>0</sub>* margin negative resection, *mo* months, *QOL* quality of life, *NS* not significant, *NA* not available

# Would neoadjuvant therapy make borderline tumours resectable?

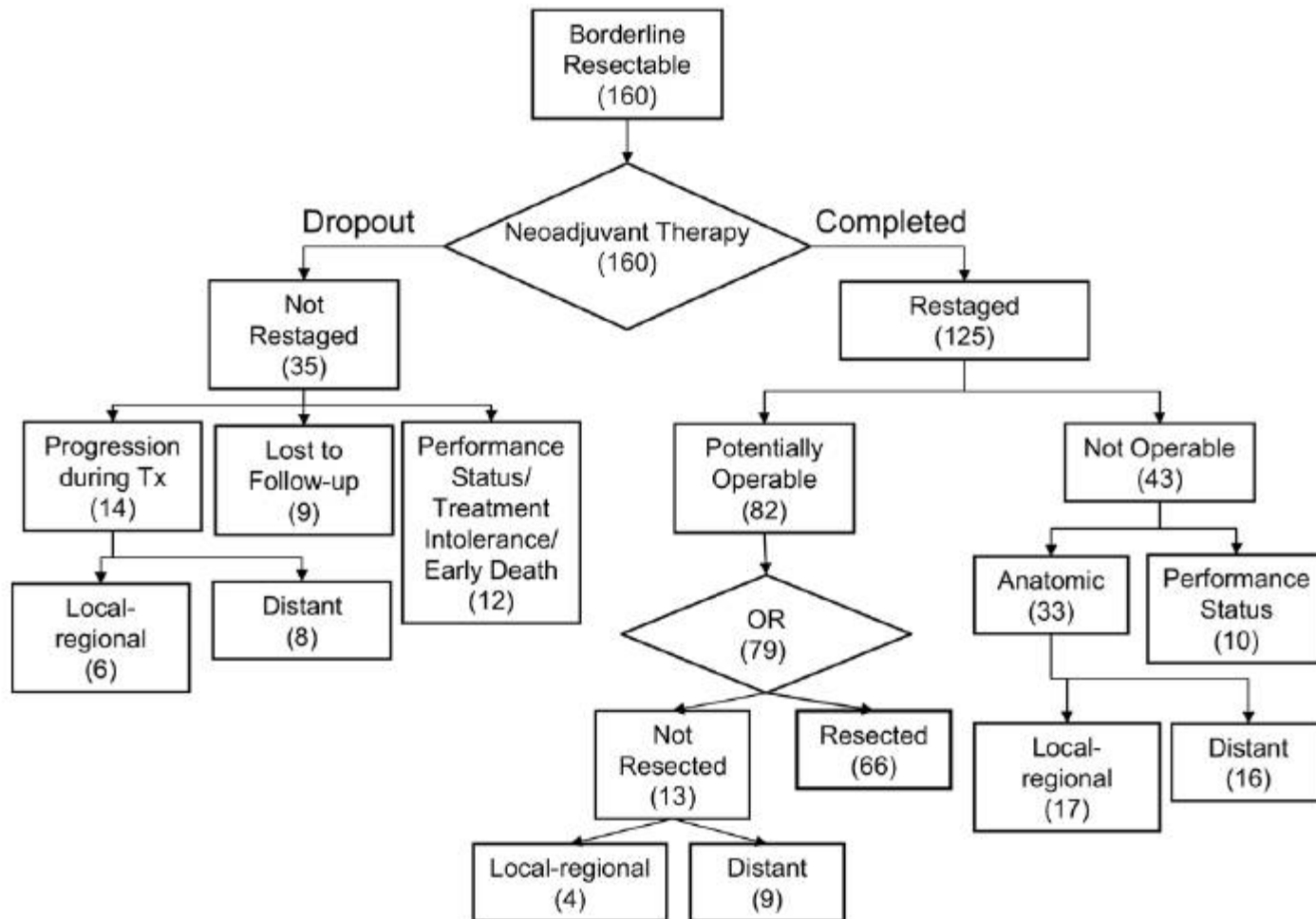
MD Anderson borderline type

- Group A: Borderline anatomically
- Group B: Possible metastatic disease
- Group C: Resectable anatomically but in patients with marginal performance status

*Katz et al JACS 2008; 206: 833-48*







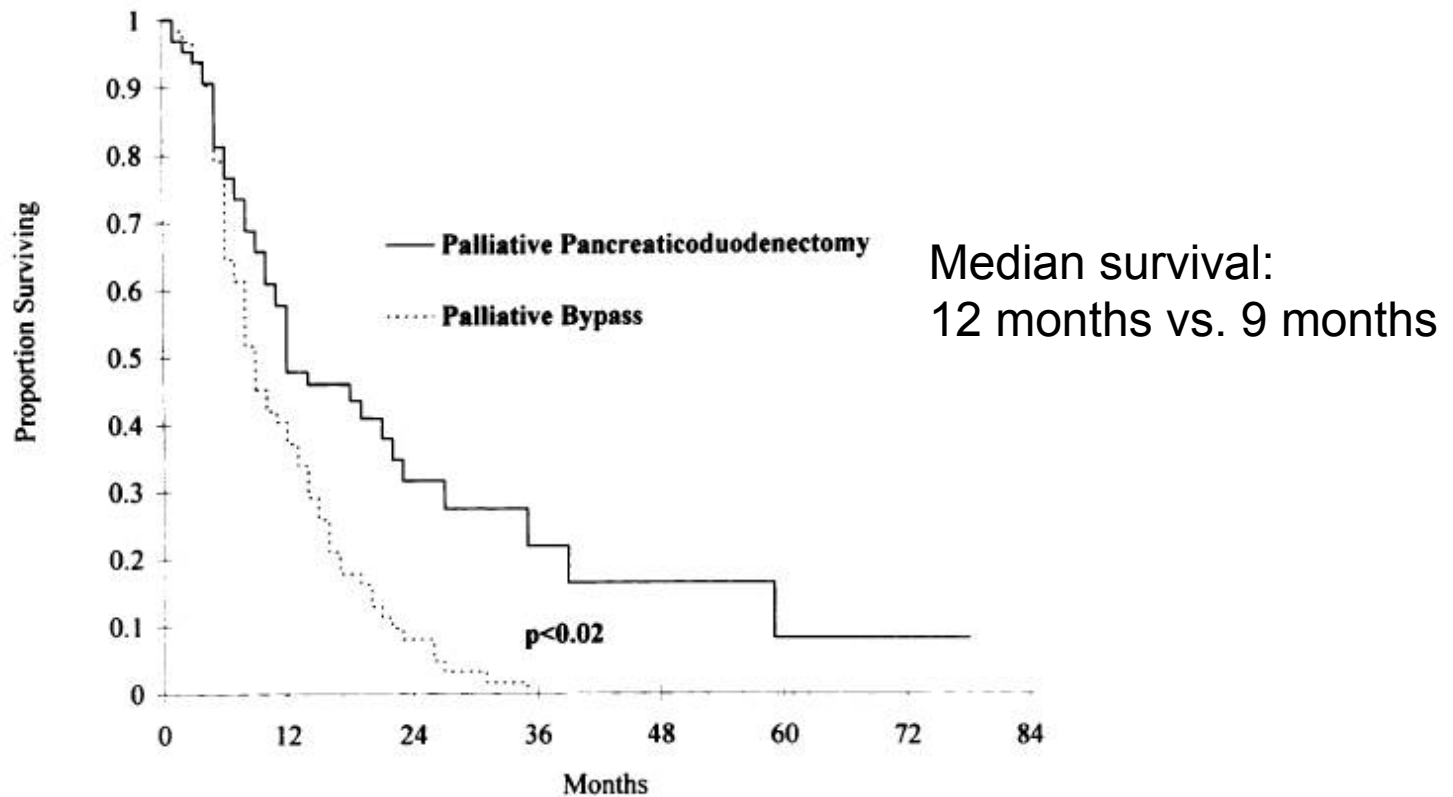
**Figure 3.** Treatment of 160 patients with borderline resectable pancreatic cancer. OR, operation; Tx, therapy.

## Neoadjuvant therapy for borderline resectable pancreatic cancer

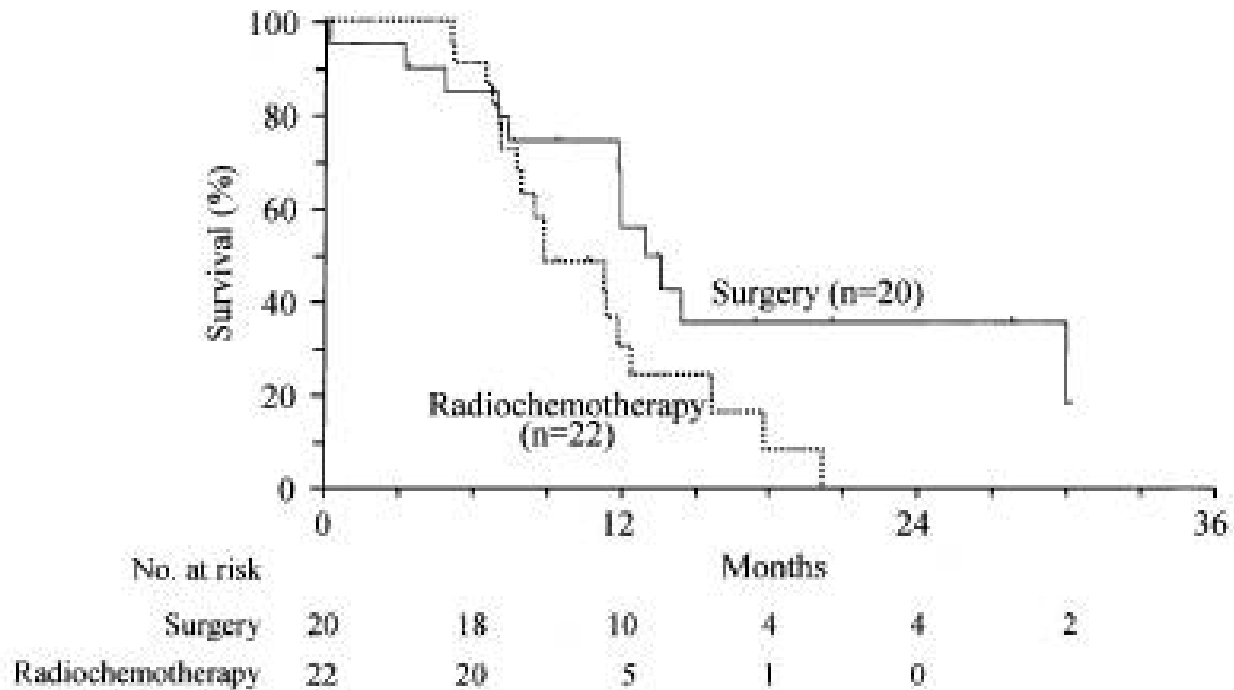
	Number of patients		Median survival months	
	All patients	Resected	Resected	Not resected
MD Anderson borderline type				
Type A	84	32	40	15
Type B	44	22	29	12
Type C	32	12	39	13
All types	160	66	40	13

# What is the best intra-operative strategy if R0/R1 resection not possible: palliative resection or bypass?

722 Lillemoe and Others



**Figure 1.** The actuarial survival curves (Kaplan-Meier) for patients undergoing palliative pancreaticoduodenectomy (N = 64) and palliative bypass (N = 62).



**Fig 2.** Survival curves of the resection group and radiochemotherapy group.

# Pancreatic cancer: define unresectable

- Biopsy proven metastases
  - U.S. guided biopsy liver lesion
  - E.U.S. guided biopsy lymph node
  - Laparoscopic biopsy peritoneal lesion, omental lesion or distant metastasis
  - Positive peritoneal lavage cytology
- Failure to complete neoadjuvant protocol with borderline resectable lesion (MD Anderson type B, C)
- Inability to complete R0/R1 resection