

# Consideration of Pancreaticoduodenectomy in Late Elderly Patients at A Community-Based Hospital

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## Introduction

Establishment of the Japanese Society of Hepato-Biliary-Pancreatic Surgery board certification system has decreased mortality subsequent to pancreaticoduodenectomy (PD) in Japan. However, not all patients live in proximity to board-certified centers. The aim of this study is to evaluate clinical outcomes of PD in octogenarians from a community-based low-volume center.

## Method

Between 2006 and 2023, a total of 97 PDs were performed. We analyzed clinicopathological data and short-term outcomes in octogenarians (Group O: n=29) compared with patients <80 years (Group Y: n=68).

## Results

### Clinicopathological characteristics

Variables	Octogenarians ≥80 (n=29)	Young < 80 (n=68)
Age, median (range)	83 (80-89)	71 (44-79)
Gender, male, n (%)	20 (69.0%)	41 (60.3%)
Disease		
Pancreatic cancer	5	24
Bile duct cancer	16	22
P-NET		4
IPMT	1	4
Papilla Vater cancer	6	6
Duodenal cancer		5
Gastric cancer		1
Other	1	2

### Preoperative morbidity

Variables	Octogenarians ≥80 (n=29)	Young < 80 (n=68)
Morbidity rate, n(%)		
Cardiovascular	17 (58.6)	24 (35.3)
Respiratory	4 (13.8)	5 (7.4)
Renal	2 (6.9)	4 (5.9)
Hepatic	1 (3.4)	5 (7.3)
DM	6 (20.7)	16 (23.5)

### Preoperative PNI

Variables	Octogenarians ≥80 (n=29)	Young < 80 (n=68)
Median PNI (range)	39.1 (26.3-51.9)	43.6 (22.6-56.7)

P=0.05

PNI : prognostic nutritional index  
10x serum albumin (g/dl) +0.005x lymphocyte counts (/mm<sup>3</sup>)

### Operative data

Variables	Octogenarians ≥80 (n=29)	Young < 80 (n=68)
Type of Operation		
SSPPD	27	65
PD	2	3
Operative time, (min) median(range)	419 (255-586)	431 (289-856)
Blood loss, (ml) median(range)	388 (100-1590)	455 (50-1350)
Transfusion, n (%)	4 (13.8%)	9 (13.2%)

### Postoperative complications

Variables	Octogenarians ≥80 (n=29)	Young < 80 (n=68)
Clavien-Dindo ≥IIIa	8 (27.6%)	6 (8.8%)
pseudoaneurysm bleeding	1	1
Pancreatic fistula (ISGPF)		
Grade A	1	1
Grade B	1	2
Grade C	1	1
Bile leakage	0	0
Intra-abdominal infection	1	2
Wound infection	1	2
Delayed gastric emptying	3	2
Pneumonia	2	1
Delirium	8 (27.6%)	2 (2.9%)
Diarrhea	0	2

P=0.026  
P=0.001

### Postoperative outcomes

Variables	Octogenarians ≥80 (n=29)	Young < 80 (n=68)
Postoperative hospital stay median (range) (day)	19 (11-210)	17.5 (11-60)
In-hospital Mortality, n (%)	0 (0)	1 (1.4%)
30-days Mortality, n (%)	0 (0)	0 (0)
Morbidity, n (%)	18 (62.0%)	22 (32.0%)

P=0.012

### Reports on the mortality of PD

Year	Author	No. of cases	Age (average)	≥80, n (%)	≥75, n (%)	30-days Mortality (%)	In-hospital Mortality (%)
2017	Aoki	17564	68.5			1.31	2.88
2017	Shiozawa	222		30 (13.5%)		4.1	
2017	Oguro	368	67	25 (7%)		0	
2016	Sho	1401		99 (7.1%)			2
2016	Okabayashi	134		19 (14.2%)		1.5	
2016	Sahora	1000	64	0 (0%)		1.4	
2016	Pecorelli	202	66.8	0 (0%)		5.9	
2016	Palani Velu	230				4.3	
2015	Beltrame	385		23 (6.0%)		3.9	
2015	Cameron	2000	59→66			1.6	
2015	Ven Fong	369	66	0 (0%)		0.9	
2014	Van Buren	137	63.2		0 (0%)	2.9	
2013	Correa-Gallego	739	65	0 (0%)		2	
2013	Mehta	709				2.3	
2012	Melis	200	66.7	25 (12.5%)			1
2011	Braga	700	66		0 (0%)	3.9	
	Our data	97	73	29 (29.9%)	51 (52.6%)	0	1.0

## Discussion

In our center, possibly due to regional factors, there is a higher proportion late elderly patients undergoing PD compared to previous reports. Nevertheless, the short-term outcomes of the surgery including safety, were adequately acceptable.

## Conclusion

Fortunately, our outcomes of PD were equivalent of high-volume centers. PD for elderly patients is believed to be safely performed with careful patient selection even in a community-based small hospital.