Octreotide in prevention of complications after pancreatic resection

University Association for Surgical Research

Octreotide in preventing abdominal complications after pancreatic resection

6 controlled randomized trials

- Buchler (1992)
- Pederzoli (1994)
- Montorsi (1995)
- Friess (1995)
  (chronic pancreatitis)

Useful

- Lowy (1997)
  (cancer et DPC)
- Yeo (2000)
  (DPC)

Unuseful

Methods (I)

- **Multicentric trial**
- **Controlled, randomized, simple blind**
- **Main endpoint : number of patients with one or more complications**
- **Subsidiary endpoints : severity of complications (reoperations, mortality, duration of hospital stay)**

Methods (II)

- **Randomization by a phone-call**
- **Intra-operative (after resection)**
- **Stratification as regards 3 risk factors :**

  Type of resection : PD or DSP

  Type of deseases : Cancer or ou Chronic pancreatitis

  Type of pancreatic parenchyma : Normal or Fibrotic

Inclusion criteria

- All pancreatic resections for cancer or benign disease
- Extended resection to the vessels or to other organs
- Surgical technique not imposed
- Use of Glue available
- Exclusion of pancreatic trauma and acute pancreatitis

Patients

- From August 1992 to January 1997
- 20 centers (13 University Hospital, 7 Comunity Hospital)
- From 1 to 31 patients were included per center
- Median number of patients included per center : 8

Results

- **230 patients included**
  122 octreotide group ; 108 control group

- **No patient excluded**

- **Pancreatoduodenectomy (PD) : 177 (77%)**
- **Distal splenopancreatectomy (DSP) : 53(23%)**

- **Cancer : 200 (87%)**
- **Chronic pancreatitis : 30 (13%)**

Results : Comparison of groups

- **Pre-operative characteristics (gender, age, weight loss, pathology) : no difference**
- **Intra-operative characteristics (kind of resection, texture of pancreatic remnant, diameter of main pancreatic duct, use of glue) : Larger use of glue in octreotide group**

Results
Main endpoint

Octreotide group

- Complications in 27 patients (22%*)

Control group

- Complications in 35 patients (32%*)

* p = 0,08 ; same results after homogenisation of groups

Main endpoints
(complications)

Octreotide group

- **Pancreatic fistula**
  N = 21 (17%)
- **Biliary fistula**
  N = 5 (4%)
- **Collection**
  N = 18 (15%)
- **Hemorrhage**
  N = 16 (13%)

Control group

- **Pancreatic fistula**
  N = 20 (19%)
- **Biliary fistula**
  N = 5 (5%)
- **Collection**
  N = 23 (21%)
- **Hemorrhage**
  N = 10 (9%)

Results : Subsidiary endpoints

Octreotide group

- **Reoperation : 24 20%***
- **Mortality : 15 12%§**
- **Median duration stay : 21 days £**

Controle group

- **Reoperation : 21 19%***
- **Mortality : 8 7%§**
- **Median duration stay : 22 days £**

*** p = 0,94 ; § p =0,21 ; £ p =0,31**

Risk factors (I)

- The rate of patients with complications was higher in case of normal parenchyma : 32% vs 19%; p=0,04
- In the other strata : no significant differences
- Every strata : no significant efficacity of Octreotide

Risk factors (II)

Octreotide lowered significantly the rate of intra-abdominal complications in both subgroups

- **Main pancreatic duct < 3 mm : 24% vs 45%***
- **Pancreatojejunostomy : 21% versus 40%***

*** P = 0,02**

Conclusion

- **Octreotide decreases the frequence of intra-abdominal complications after pancreatic resections but does not lower their gravity**
- **Particularly in case of narrow main pancreatic duct and after pancreatojejunostomy in case of pancreatoduodenectomy**
- **Preoperative administration could optimize its action.**

Wirsung duct occlusion by Fibrin Glue in the prevention of complications after pancreatic resection

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Wirsung duct occlusion

- **No controlled studies***

***Waclawisczek 1996 ; Van Gulik 1995 ; Cavallini 1991**

Fibrin Glue in the prevention of complications

- **Multicentric trial**
- **Simple blind study randomized**
- **Main endpoint : number of patients with one or more IAC**
- **Subsidiary endpoints : severity of complications (reoperations, mortality, duration of hospital stay)**

Methods (II)

- **Randomization by a phone-call**
- **In intra-operative period (after resection)**
- **Stratification according to 3 risk factors :**

  Type of resection : PD or DSP

  Type of deseases : Cancer or Chronic pancreatitis

  Type of pancreatic parenchyma : Normal or Fibrotic

Inclusion criterias

- Every partial pancreatic resection for cancer or chronic pancreatitis
- Extended resection to the vessels or to other organs
- Surgical technique not imposed
- Use of Octreotide possible
- Exclusion of pancreatic trauma and acute pancreatitis

Patients

- From January 1994 to december 1998
- 15 centers (10 UH, 5 CH)
- 1 to 32 patients included for different centers
- Median number of patients included per center : 11

Results

- **182 patients included**
  102 Glue group ; 80 Control group
- **No patients excluded**
- **PD : 141 (77%); DSP :41 (23%)**
- **Cancer : 150 (82%) ; Chronic pancreatitis : 30 (18%)**

Results : Comparison between groups

- **Pre-operative factors (gender, age, weight loss, pathology) : No significant differences**
- **Intra-operative factors : 3 differences**
  - **Glue group : more fibrotic pancreas (p<0,05)**
  - **Glue group : more often Octreotide (p<0,05)**
  - **Glue group : more Glue on the anastomosis (p<0,05)**

Results
Main endpoint

Glue group

- 24 patients with complications 23,5%*

Control group

- 21 patients with complications 26%*

* p = 0,67 ; same results after homogenisation of groups

Main endpoint
(details of complications)

Glue group

- **Pancreatic fistula**
  N = 17 (17%)
- **Biliary fistula**
  N = 6 (6%)
- **Collections**
  N = 15 (15%)
- **Haemorrhage**
  N = 7 (7%)

Control group

- **Pancreatic fistula**
  N = 12 (15%)
- **Biliary fistula**
  N = 3 (4%)
- **Collections**
  N = 19 (24%)
- **Haemorrhage**
  N = 11 (14%)

Results: Subsidiary endpoints

Glue group

- **Re-operations :15 15%***
- **Mortality : 9 8,8%§**
- **Median hospital stay : 19 jours £**

Control group

- **Re-operations : 15 19%***
- **Mortality : 5 6%§**
- **Median hospital stay : 20 jours £**

*** p = 0,46 ; § p = 0,51 ; £ p = 0,8**

Results : risk factors

- More complications in patients with normal pancreatic parenchyma :

  32% vs 13%; p = 0,003
- More complications in patients with small pancreatic duct (< 3mm) :

  35% versus 15% ; p = 0,002
- No significant differences due to the Glue in every strata

Conclusion

Wirsung duct occlusion by Fibrin Glue does not modify the frequence and the severity of IAC after pancreatic resections