



# A systematic review of pancreaticoduodenectomy for pancreatic cancer in randomised control trials to examine variations in operative technique

## Background


 Pancreatoduodenectomy (PD) : A complex surgical intervention comprising multiple components.

 Variations in delivery may introduce bias into randomised controlled trials (RCTs) & impair the accurate interpretation of results undertaken.


 To assess how PD, has been delivered & monitored within RCTs.


## Methods

 RCTs of PD: January 2020 to March 2023. **Technical components** of PD broken down into categories & subcategorised into **41 components**.

 Examination of the components described & standardised, and the delivery of PD was recorded.

## Inclusion & Exclusion Criteria

 All English-language RCTs published involving adult patients undergoing PD.

 **Non-English** language manuscripts. **Non-RCTs** pre-clinical or cadaveric studies. Studies published in **Abstract Format**. Distal or total pancreatectomy, Robotic PD.

## Results

**83 Screened articles**


**16 Countries**



**29 RCTs Included**

**3440 patients**



 **No studies** described all components of PD in the methods or trial protocol (table 1)

**5** RCTs: No Component Parts Described

**1** RCT: 15/41 Component Described (Best)

**3** RCTs with Operative Photographs.

**26** RCTs: PD Delivery was not Recorded

## Conclusion

 Descriptions of the PD were **inadequate** & standardisation **unclear**.

A clear description is warranted to:

- **Reduce variation** in outcomes
- **Reduce bias** in RCTs
- **Facilitate cross-RCT comparisons** in SR.



Component	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
<b>Pre-operative considerations</b>																													
Neoadjuvant chemotherapy																													
Pre-operative biliary stenting																													
Review of most up to date cross-sectional imaging																													
<b>Before skin</b>																													
Positioning																													
Prophylactic antibiotics																													
<b>Incision</b>																													
Kocherisation																													
Entry into the lesser sac																													
Mobilisation of right colon																													
Cholecystectomy																													
Dissection																													
Dissection of hepatoduodenal ligament																													
Dissection of middle colic vein and confluence of SMV																													
Assessment of portal vein involvement																													
Decision to proceed with resection																													
<b>Resection</b>																													
Dissection of gastroduodenal and right gastric vessels																													
'Pinch test' to confirm adequate blood flow to the liver																													
Division and transfixion of gastroduodenal and right gastric arteries																													
Division of common bile duct																													
Dissection of duodenum from ligament of Treitz																													
Division of stomach																													
Division of proximal jejunum																													
Division of pancreatic neck																													
Dissection of uncinate process from SMV																													
Dissection of uncinate process from retro pancreatic																													
Removal of specimen																													
Lymph node sampling																													
<b>Haemostasis</b>																													
<b>Reconstruction</b>																													
Pancreatico-jejunojejunostomy/gastrostomy																													
Use of pancreatic stent																													
Hepaticojejunostomy																													
Gastrojejunostomy																													
Vascular reconstruction																													
Washout																													
<b>Surgical Adjuncts</b>																													
<b>Closure</b>																													
Insertion of abdominal drain(s)																													
Fascial closure																													
Skin closure																													
<b>After closure</b>																													
Application of dressings																													
Post-operative antibiotics																													
Post-operative venous thromboembolism prophylaxis																													
Use of somatostatin analogues																													
Post-operative feeding plan																													

Table 1 - Description of component parts across trials. Green = component described, flexibility permitted; blue = component described, no flexibility permitted; yellow = component described, flexibility not specified; red = component not described.