



## QUALITY IN ENDOSCOPY: ERCP

**Post-ERCP pancreatitis is best prevented by limiting the number of ERCP-ists**

**PRO**

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# Post-ERCP pancreatitis (PEP)

## ESGE Guideline: Prophylaxis of post-ERCP pancreatitis

Pancreatitis is the most frequent complication after ERCP

with an incidence of 3.5 % in unselected patients.

It is of mild or moderate severity in approx. 90 % of cases.

*Dumonceau JM, Endoscopy 2010; 42: 503-15*

# Independent risk factors for PEP

## Patient related risk factors

	Odds ratio
<b>Definitive risk factors</b>	
Suspected SOD	4.1
Female gender	2.2
Previous pancreatitis	2.5
<b>Likely risk factors</b>	
Younger age	1.1 – 2.9
Absence of chronic pancreatitis	1.9
Normal bilirubin level	1.9

# Independent risk factors for PEP

## Procedure related risk factors

	Odds ratio
Definitive risk factors	
Precut sphincterotomy	2.7
Pancreatic injection	2.2
Likely risk factors	
High number of cannulation attempts	2.4 – 3.4
Pancreatic sphincterotomy	3.1
Biliary sphincteroplasty	4.5
Failure to clear bile duct stones	3.4
No evidence	
Hospital case volume	
Conflicting data	
Endoscopist case volume	

# Risk factors for PEP

## High – versus low- volume centers Methods

### Prospective multicenter trial

11 High-volume centers

10 Low-volume centers

3331 ERCP`s by expert operators

304 ERCP`s by less-skilled operators

*Testoni PA, AJG 2010; 105:1753-61*

# Risk factors for PEP

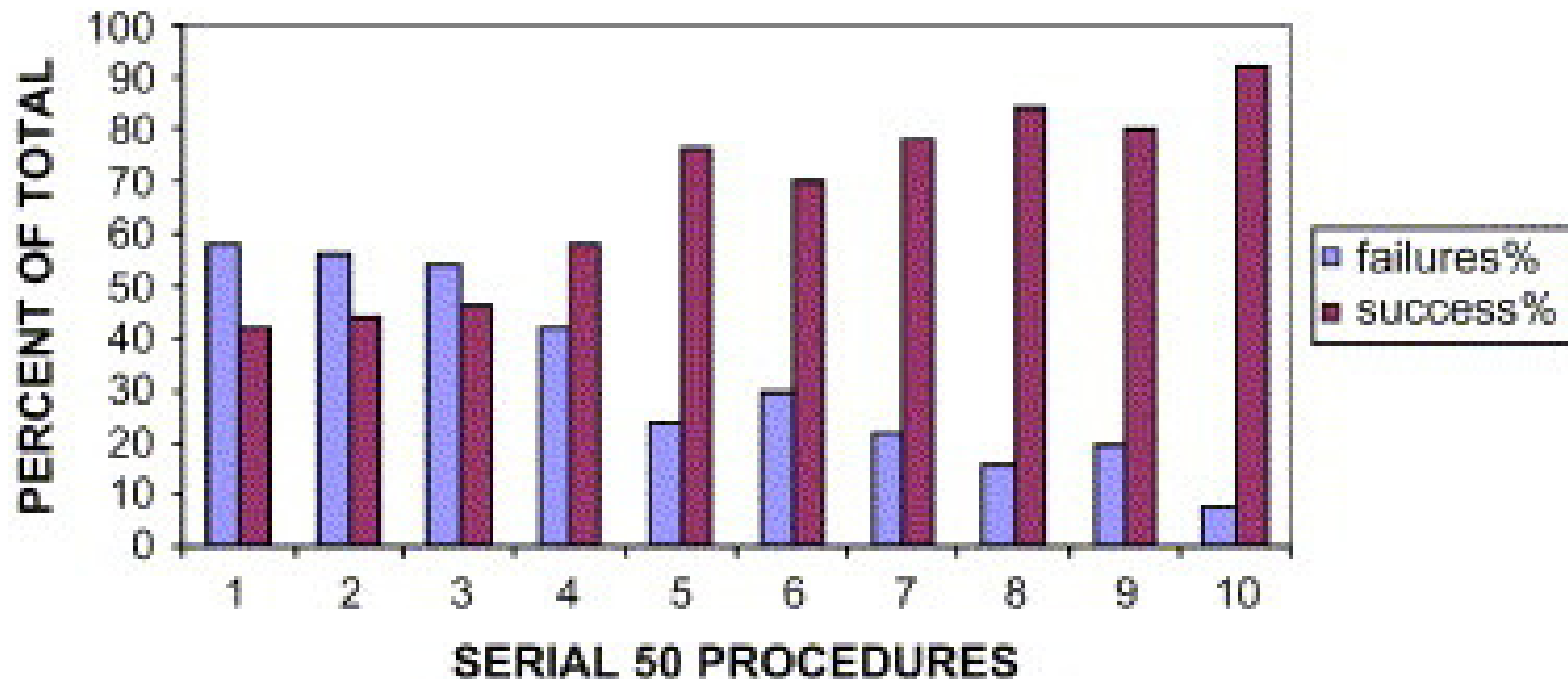
## High – versus low- volume centers Results

### Independent risk factors

- History of post-ERCP pancreatitis
  - Biliary pain
  - > 10 attempts of cannulation
  - Main pancreatic duct cannulation
  - Pre-cut technique
- 
- No association with the case volume
  - High volume centers:
    - larger portion of patients at high risk of PEP
    - greater number of difficult procedures

# Endoscopic competence in ERCP

Learning curve for deep biliary cannulation in patients with native papillary anatomy



*Verma D. GIE 2007; 65:394-400*

# ERCP related complications

## Case volume and outcome of ERCP Methods

### Nationwide Austrian benchmarking project

- Participation: 28 of 140 sites registered for ERCP
- Report on 3132 procedures representing 22 % of the total number

*Kapral C; Endoscopy 2008; 40:625-30*



# ERCP related complications

## Case volume and outcome of ERCP Results

	ERCP`s per year		P
	< 50	> 50	
Overall complications	13.6 %	10.2 %	0.007
Pancreatitis	5.6 %	4.9 %	n.s.
Bleeding	4.7 %	3.2 %	n.s.
Cholangitis	2.8 %	1.5 %	0.022
Perforation	0.6 %	0.5 %	n.s.
Cardiopulmonary compl.	1.6 %	0.6 %	0.014

# EST related complications

## Case volume and outcome of EST

	Complications	
	Freeman	Rabenstein
Patients for EST	2347	1335
<hr/>		
Endoscopists case volume		
High	8.4 % *	5.6 % **
Low	11.1 % *	9.3 % **

\* P < 0.05

\*\* P < 0.05

*Freeman ML. NEJM 1996; 335:909-18*  
*Rabenstein T. GIE 1999; 50:628-36*

# Prevention of PEP

Limiting the number of ERCP-ists

Higher case volume  
per individual ERCP-ist

More options for  
training and supervision

Higher success  
rates

Less cannulation  
attempts

Lower overall  
complication rates

Reduced incidence of PEP

# Prevention of PEP

## Low-volume ERCP-ists

- < 50 cases per year: consideration of discontinuing ERCP
- Training in high-volume centers
- Limitation to cases with complexity level\* 1-2 and no PEP related risk factors
- Supervision
- Prospective collection of performance data

\* Cotton PB. GIE 2011; 73:868-74