

Controversies in Advanced Endoscopy: Update in ERCP from DDW 2016



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Topics

- MDRO – An epidemic or mass hysteria?
- ERCP Safety and Technique – Do it better, faster and safer
- Cholangiocarcinoma – Paradigm-shifting Studies



News Headlines Everywhere...



FRONTLINE

HUNTING FOR
**NIGHT
BACTERIA**

TUESDAY, Oct. 22
Check your local listings for time



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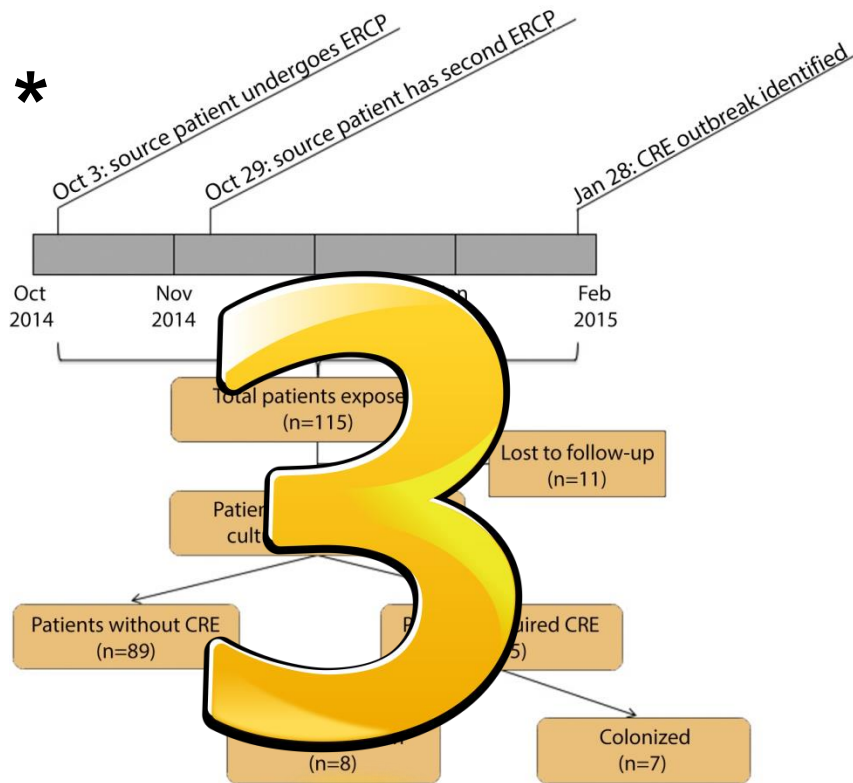
So How Common is this?

Culture Results	Total # Cx n(%) = 303	Clinically Indicated n(%) = 25	Surveillance Cx n(%) = 278
Gram Neg Organism	163 (53.8)	15 (60)	148 (53.2)
Gram Pos Organism	187 (61.7)	18 (72)	169 (60.8)
Fungal	34 (11.2)	3 (12)	31 (11.1)
Total MDRO	14 (4.6)	3 (12)	11 (4)
CRE	5 (1.6)	2 (8)	3 (1)
MRSA	2 (0.7)	0 (0)	2 (0.7)
VRE	7 (2.3)	1 (4)	6 (2.2)

Gaddam, et al DDW #208



Some sobering facts....



**Kim, S 2016; GIE 83(6):1121-1129.*

- 500,000 ERCPs/year
- 1.9 % scopes remain contaminated despite HLD
- 14.4% transmission rate*
- 53.3% of those colonized will become infected*

Not an isolated event



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How Can We Find It (Beforehand)?

- Rectal Swabs (2) in 76 patients
- Assay compared to PCR
- 100% concordance
- Only CRE + test in index patient with sx
- Implications:
 - Increased Safety
 - Decrease process time

Xpert Carba-R® (Cepheid, Inc)

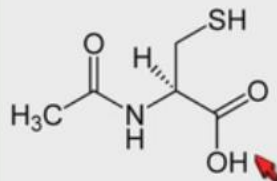


Pannala, et al DDW #276

How can we stop it?

N-acetylcysteine (NAC) – Biofilm Disruptor

- N-acetyl derivative of L-cysteine, naturally occurring amino acid
 - Generic available
 - Used regularly in clinical medicine / endoscopy
- Mucolytic
- Pregnancy class B
- Biofilm-disruption and antibacterial properties



Dinicola S 2014
El Feky et al 2009

Aslam et al 2011

6 May 21, 2015 | © 2015 Kaiser Foundation Health Plan, Inc.

KAISER PERMANENTE. thrive

Endoscopy

- Exam completed
- Scope removed

Intervention

- t=0; Elevator channel Cx w/ sterile swab
- Elevator channel submerged in 20% NAC or sterile water
- Channel Cx'ed q 5 minutes to 30 minutes

Reprocessing

- t=30, Scope reprocessed as usual

CFU

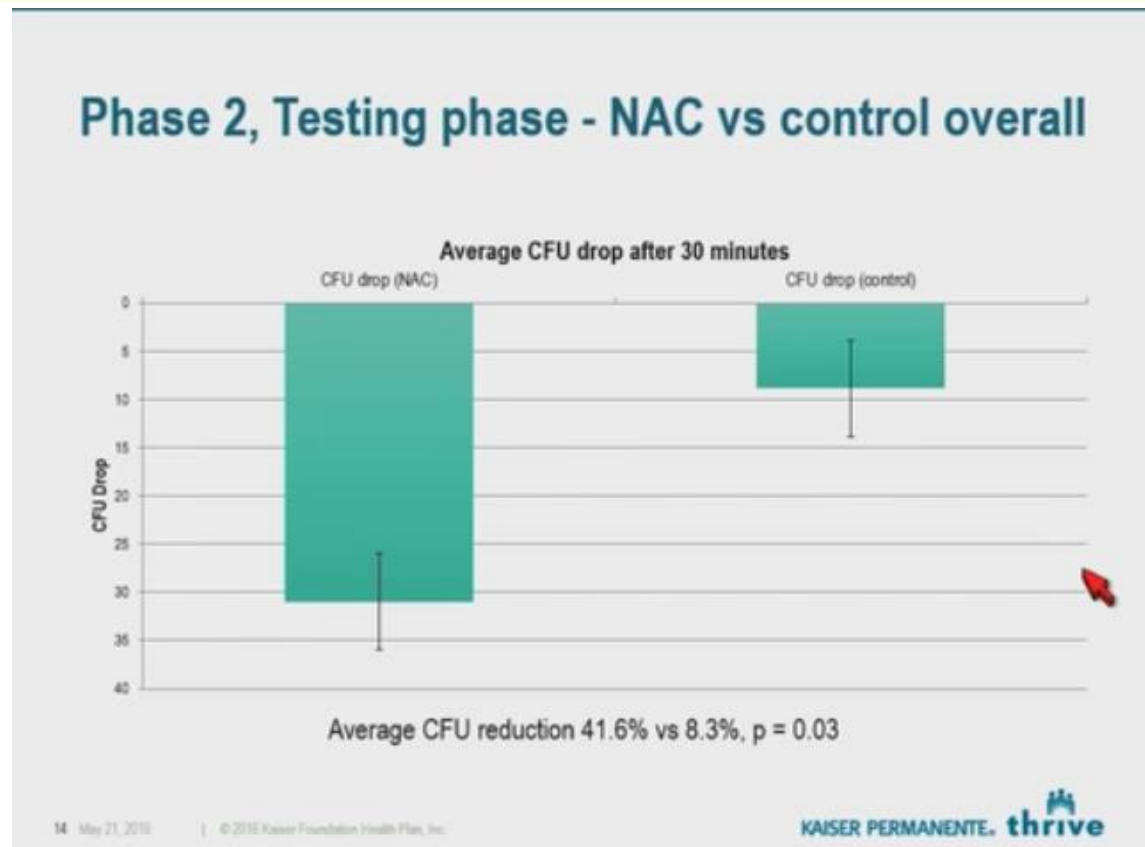
- Agar plates cultured for 48-72 hours
- Most optically dense ½ inch counted by 5x microscope

Kwok, et al DDW #210



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Results



Kwok, et al DDW #210

Rectal Indomethacin in ERCP

The NEW ENGLAND JOURNAL of MEDICINE

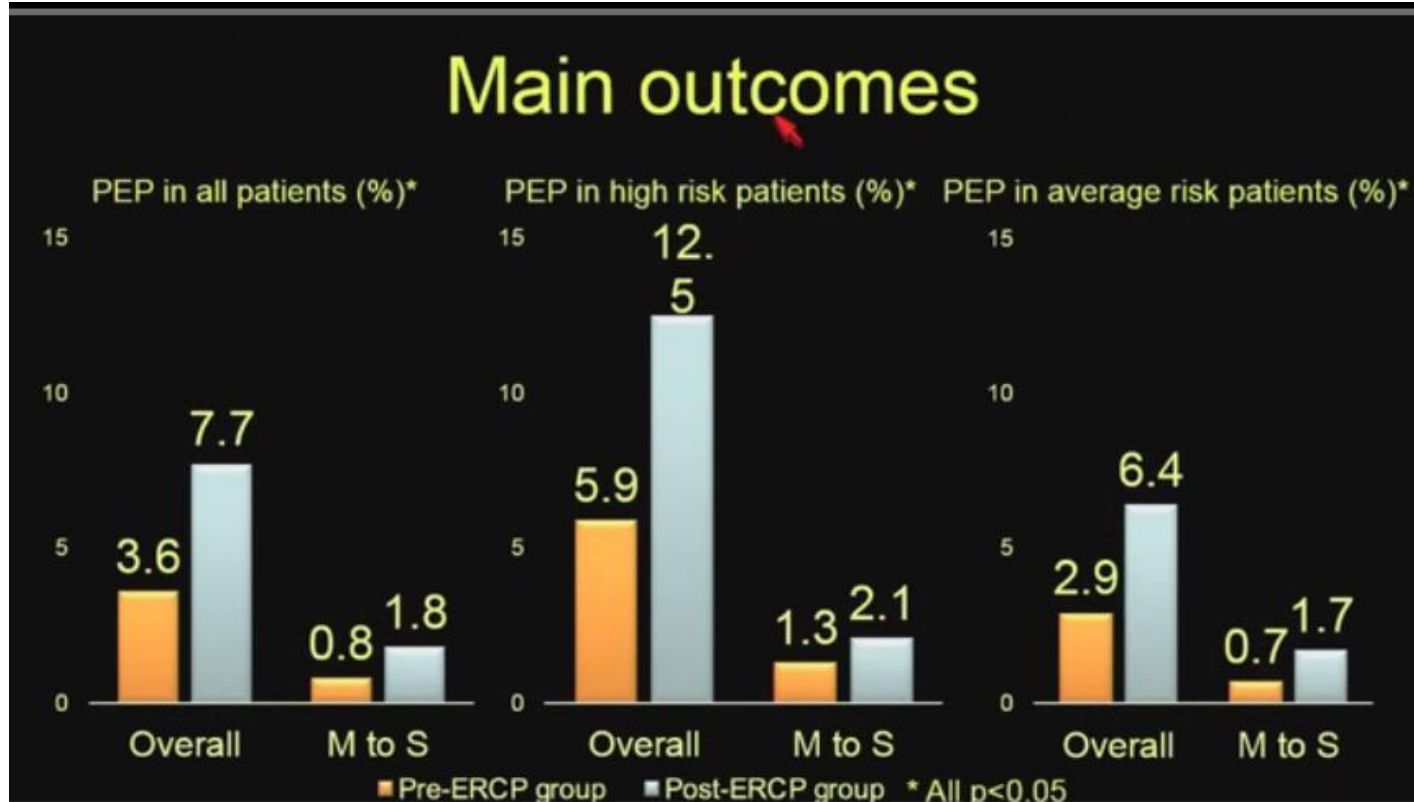
ORIGINAL ARTICLE

A Randomized Trial of Rectal Indomethacin to Prevent Post-ERCP Pancreatitis

B. Joseph Elmunzer, M.D., James M. Scheiman, M.D., Glen A. Lehman, M.D.,
Amitabh Chak, M.D., Patrick Mosler, M.D., Ph.D., Peter D.R. Higgins, M.D., Ph.D.,
Rodney A. Hayward, M.D., Joseph Romagnuolo, M.D., Grace H. Elta, M.D.,
Stuart Sherman, M.D., Akbar K. Waljee, M.D., Aparna Repaka, M.D.,
Matthew R. Atkinson, M.D., Gregory A. Cote, M.D., Richard S. Kwon, M.D.,
Lee McHenry, M.D., Cyrus R. Piraka, M.D., Erik J. Wamsteker, M.D.,
James L. Watkins, M.D., Sheryl J. Korsnes, M.A.,
Suzette E. Schmidt, B.S.N., C.C.R.P., Sarah M. Turner, B.S.,
Sylvia Nicholson, C.C.R.C., and Evan L. Fogel, M.D.,
for the U.S. Cooperative for Outcomes Research in Endoscopy (USCORE)

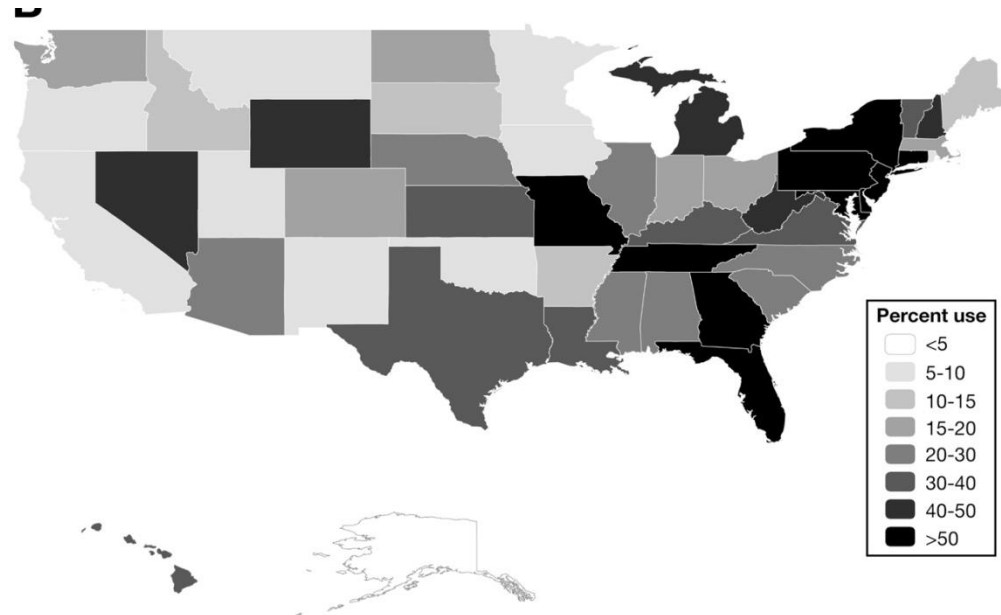


Pre- versus Post -ERCP Indomethacin



Luo, et al DDW #342

Prevalence of Anesthesia Use in the United States from 2010-2011



Wernli KJ, Brenner AT, Rutter CM, Inadomi JM. Risks Associated With Anesthesia Services During Colonoscopy. *Gastroenterology*. 2016 Apr;150(4):888-94.



Risk of AE with Anesthesia versus Standard Sedation in Colonoscopy

Table 2. Risk of 30-Day Outcomes by ORs and 95% CIs of the Association Between Use of Anesthesia Services and Standard Sedation

Outcomes	Overall		Polypectomy		No polypectomy	
	OR ^a	95% CI	OR ^a	95% CI	OR ^a	95% CI
Any complication	1.13	1.12–1.14	1.16	1.15–1.17	1.10	1.10–1.12
Colonic						
Perforation	1.07	1.00–1.15	1.26	1.09–1.52	1.04	0.88–1.24
Hemorrhage	1.28	1.27–1.30	1.38	1.33–1.39	1.23	1.22–1.26
Abdominal pain	1.07	1.05–1.08	1.10	1.08–1.11	1.04	1.02–1.05
Anesthesia-associated outcome						
Pneumonia	1.03	1.00–1.06	1.02	0.98–1.06	1.02	1.00–1.07
Infection	1.03	0.97–1.10	1.03	0.93–1.16	1.03	0.93–1.15
Complications secondary to anesthesia	1.15	1.05–1.28	1.19	1.04–1.37	1.10	0.96–1.20
Cardiopulmonary						
Hypotension	0.97	0.93–1.02	1.00	0.94–1.07	0.94	0.88–1.00
Myocardial infarction	0.98	0.95–1.01	0.98	0.94–1.02	0.98	0.94–1.03
Stroke and other central nervous system events	1.04	1.00–1.08	1.05	1.00–1.11	1.04	0.99–1.10

^aAdjusted for age, sex, Charlson comorbidity status, polypectomy status, provider/practice type, region, and year (continuous).

Wernli, K et al; *Gastroenterol* 2016 Apr;150(4):888-94



Use of MAC and GA Anesthesia Increases Risk of AEs

ORIGINAL ARTICLE

Increased Risk in EGD

Douglas G. Farger, MD

Cleveland, Cincinnati, Ohio; Portland, Oregon; Scottsdale, Arizona, USA

ORIGINAL ARTICLE: Clinical Endoscopy

A prospective assessment of
patient and endoscopic
adverse events and
administered sedation

21%

adverse events and
with anesthesiologist-

Tyler M. Berzin, MD, Sirish Sanaka, MD, Sheila R. Barnett, MD, Eswar Sundar, MD, Paul S. Sepe, MD,
Moshe Jakubowski, PhD, Douglas K. Pleskow, MD, Ram Chuttani, MD, Mandeep S. Sawhney, MD

Boston, Massachusetts, USA



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Optimal Sedation Type in ERCP

Adverse Event	Conscious Sedation (n=3615)	Monitored Anesthesia (n=1106)	General Anesthesia (n=1032)	P-value
Hypoxia, n(%)	18 (22)	5 (25)	0 (0)	0.18
Perforation, n(%)	12 (14)	4 (27)	4 (50)	0.07
Bleeding				
Unable to procedure, n(%)				
OVERALL	83 (2.3)	15 (1.3)	8 (0.8)	<0.01
Without “Fails”	1.8%	1.1%	0.0267	

General anesthesia but not MAC is associated with Risk Reduction

Kesar, et al DDW #882



Cannulation Techniques: Does the Device make a difference?

	WIRE SYSTEM		'TOME TYPE	
	Short (n=109)	Long (n=107)	Small (n=108)	Standard (n=108)
Safety Outcome				
Complication	3 (2.8%)	12 (11.2%)*	4 (3.7%)	11 (10.2%)
Post-ERCP Pancreatitis	3 (2.8%)	10 (9.3%)*	4 (3.7%)	9 (8.9%)
Efficacy Outcome				
Cannulation in < 8 attempts	81(74.3%)	80(74.8%)	80(74.1%)	81(75.0%)

*p<0.05

Buxbaum et al DDW #275



Complete ES plus Large Balloon dilation (Balloon) versus ES+Mech lithotripsy (Standard) for CBD stones

Study Design

- Multicenter, 150 patients
- Randomized – Balloon versus Standard
- Balloon – 12-20 mm
 - Mean 16.79 ± 4.7 mm
- No difference in 2 groups:
 - # and size stones
 - CBD diameter
 - Periapical diverticula

Results

Outcome	Balloon	Standard	P-value
Clearance	96%	74%	<0.001
Cost (€)	477.4	623.5	0.029
Time (min)	39.11	49.63	0.015
AEs (%)	8.11	9.26	0.837

Karensti, et al DDW #264



Pre-surgical ERCP in Pancreatic AdenoCA

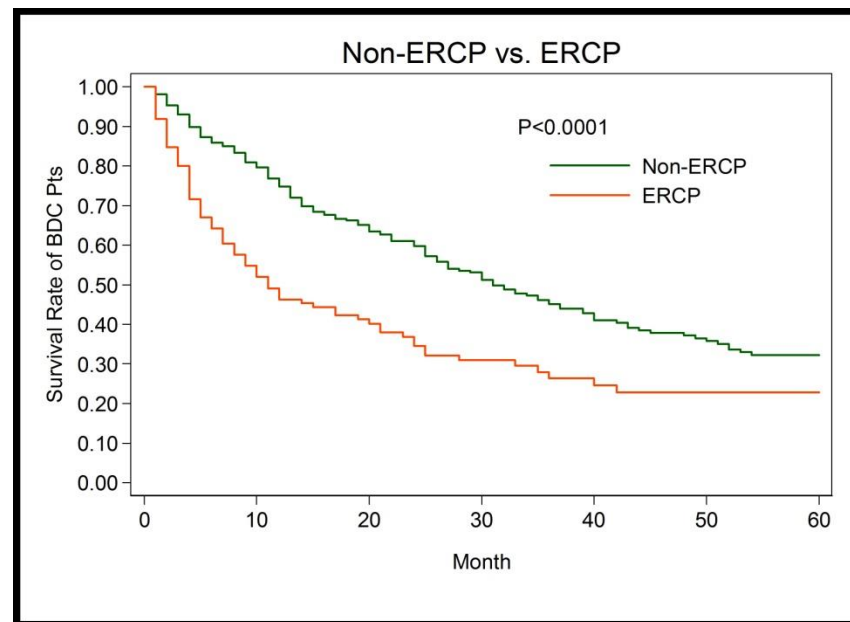
- Preop drainage: Assoc w/ severe morbidity¹
 - 73.5% versus 37.4% $p < 0.001$
- PTC independent predictor for²:
 - Decreased survival
 - PTC 11.5 mos/ERCP 22.4 mos/ND 28.9 mos
 - Hepatic recurrence –HR 1.76, 95% CI(1.05-2.99)
- Very high (>15 mg/dl) preop bilirubin assoc. with severe postop morbidity³

¹Fang, Cochrane 2012; Strom, ²Surg Endosc 2015; ³Uemura, Ann Surg Oncol 2015



Preoperative ERCP for CholangioCA is Associated with Decreased Survival

Variable	HR	95% CI	P-value
ERCP	1.478	1.097-1.991	0.010
STAGE			
local	1 (Ref)		
regional	2.133	1.575-2.888	<0.001
distant	4.707	3.138-7.060	<0.001
CHARLSON INDEX		0 (ref)	
1	1.066	0.727-1.562	0.745
2	1.831	1.240-2.705	0.002
≥3	1.448	1.043-2.010	0.027



**Median Survival (months – 95% CI):
11 (8-20) versus 31 (26-39)**

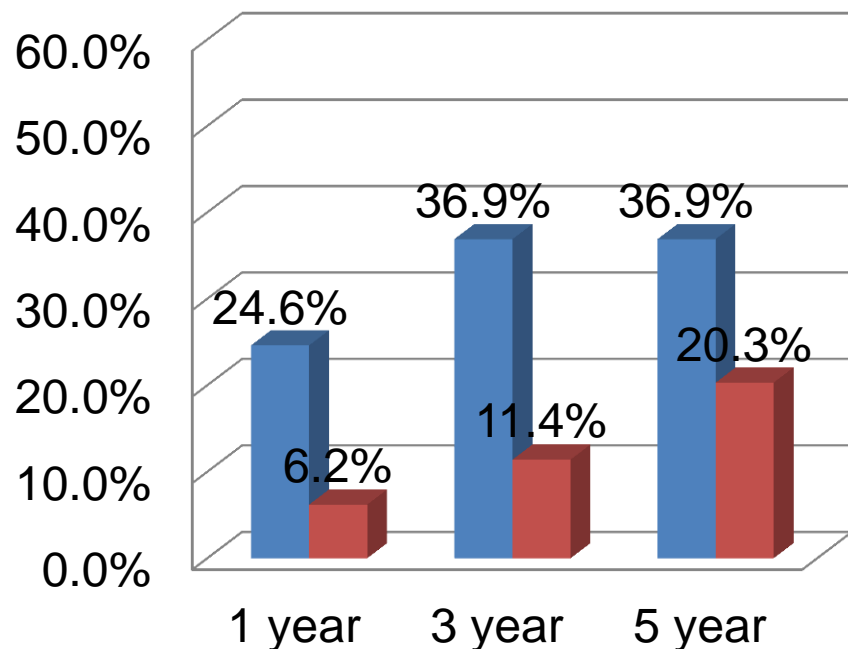
Navaneethan, et al DDW #122



Preoperative ERCP for CholangioCA is Associated with Intrahepatic Recurrence

Recurrence

■ Drainage ■ No Drainage



Multivariate analysis: age, gender, tumor differentiation, node status, lymphovascular invasion, preop bili level, preop drainage, CA 19-9 levels, post-op chemo and radiation therapy.

Factor	HR	95%CI	P-value
CA 19-9 > 200 IU	3.93	1.803-8.569	0.001
Pre-op Drainage	3.203	1.098-9.347	0.033

Jeong, et al DDW #123



Summary

- MDRO in ERCP scopes is rare; NAC may offer improved cleaning
- Pre- rather than Post- ERCP dosing of Indomethacin may be superior
- ERCP safer with Anesthesia-provided sedation
- Use of short-wires in ERCP decrease PEP
- Avoid pre-surgical ERCP in CholangioCA

