QUALITY IN ENDOSCOPY: ERCP

The Future of (Endoscopic) Pancreato-Biliary Therapy

Paul Fockens, MD PhD
Professor and Chair of Gastroenterology & Hepatology
Academic Medical Center, University of Amsterdam
The future of pancreato-biliary therapy

- Introduction
- Pancreatic therapy
  - Acute pancreatitis
  - Chronic pancreatitis
  - Pancreatic cancer
- Biliary therapy
  - Biliary access
  - Cholangiocarcinoma
- Conclusions
The future of pancreato-biliary therapy

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Introduction

• ERCP was 1st performed in EU in 1973, EST in 1974
• Biggest changes in the past 40 yrs:
  – Introduction of EUS ~ 1983
  – Metal stenting ~ 1992
  – Pancreatic duct stenting ~ 2005
• “Paradigm shifts” do not occur regularly
• Focus for the next decade:
  – Gather solid evidence and prevent adverse events
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Acute pancreatitis

• Value of ERCP in acute biliary (AST+) pancreatitis is still unknown

• Meta-analyses (+++) suggest beneficial effect in predicted severe AP

• Diagnostic ERCP? EUS pre-ERCP?

• Up-to-date evidence needed
EUS guided Pancreatic Fluid Collection Drainage
Pancreatic fluid collections

- Transmural endoscopic drainage

- Indications: GI-obstruction, jaundice, infection
Direct endoscopic necrosectomy

Gardner et al, Gastrointestinal Endoscopy 2011

• Multicentre retrospective study on 104pts with WOPN
• Primary, secondary or non-infected necrosis
• Success 95/104 (91%)
• Severe complications 14 (13%); 5 perforations
• Mortality 5/104 (5%), 2 intra-procedural

→ Necrosectomy accepted technique, complications can be severe
Do we always have to do necrosectomy?

- RCT for infected pancreatic necrosis (*surg vs. min inv.*)
- 40% of infected necrosis resolves with just drainage
- Necrosectomy to be performed after 72hrs
- Next study: step-up approach vs. endoscopy

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**Table 3. Primary and Secondary End Points.**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Minimally Invasive Step-up Approach (N = 43)</th>
<th>Primary Open Necrosectomy (N = 45)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Necrosectomies (laparotomy or VARD) — no. (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>17 (40)</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>19 (44)</td>
<td>31 (69)</td>
</tr>
<tr>
<td>2</td>
<td>6 (14)</td>
<td>8 (18)</td>
</tr>
<tr>
<td>≥3</td>
<td>1 (2)</td>
<td>6 (13)</td>
</tr>
</tbody>
</table>

Santvoort et al, NEJM 2010
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Chronic pancreatitis

• Strong need for evidence based medicine with multiple RCT’s

• ERCP-based treatment regimens should be combined with ESWL

• Endoscopic therapy is unlikely to become therapy of choice for late-stage CP

• Early intervention better than surgery?

• Multi-centre study in NL under way
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Pancreatic cancer

The future of endoscopy in pancreatic cancer

- Survival of pancreatic cancer is dismal with overall 5yr survival <5% and post-surgical survival <10%
- Surgery alone is not enough for cure
- Neo-adjuvant CRT will become future standard
- EUS-guided FNA + ERCP with biliary metal stenting in one procedure under deep sedation after multi-disciplinary meeting
The future of preoperative stenting

Who should do it?

• Well trained endoscopists:
  → Endoscopists performing >100 ERCP’s/year

• Centres with excellent endoscopy facilities and trained nurses with 24/7 availability

• Centres with 24/7 interventional radiology

• Concentration of patients in multi-disciplinary HPB-oncology units
The future of preoperative stenting

Is preoperative drainage less dangerous than other ERCP’s?

No! 11% severe adverse events.

vd Gaag et al, NEJM2010
Metal stents for all pancreatic cancer stenting?

- The incidence of cholangitis after preoperative drainage ~ 25% with plastic stents
  - Metal stents should be considered in all patients
- Preference for fully covered metal stents because of patency + easy removal in case of misplacement

Saleem et al, GIE 2011
Metal stents for all pancreatic cancer stenting?

- Sphincterotomy YES/NO?

### Endoscopic Biliary Sphincterotomy Is Not Required for Transpapillary SEMS Placement for Biliary Obstruction

<table>
<thead>
<tr>
<th></th>
<th>Sphincterotomy during ERCP</th>
<th>Naïve/No sphincterotomy during ERCP</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (%)</td>
<td>27 (26)</td>
<td>77 (74)</td>
<td></td>
</tr>
<tr>
<td>Success, n (%)</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td></td>
</tr>
<tr>
<td>Immediate complications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe pain</td>
<td>2</td>
<td>1</td>
<td>0.16</td>
</tr>
<tr>
<td>Small bowel obstruction</td>
<td>1</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>Sphincterotomy bleeding</td>
<td>5</td>
<td>0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Post-ERCP pancreatitis</td>
<td>1</td>
<td>0</td>
<td>0.3</td>
</tr>
</tbody>
</table>

→ Stay up to date with literature

Bannerjee et al, DigDisSci 2011
Stent/surgery in malignant duodenal obstruction

Jeurnink et al, GIE 2010
Endoscopic gastro-enterostomy

Magnetic Anastomotic Device

- Study stopped because of stent-related SAE’s, magnet redesign requested

Van Hooft et al, GIE 2010
Endoscopic gastro-enterostomy

Magnetic Anastomotic Device

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Van Hooft et al, GIE 2010
Endoscopic gastro-enterostomy

Magnetic Anastomotic Device – 2nd generation
EUS-guided placement of markers

- Targeted radiotherapy allows higher dosage
- Beam targeting on X-ray markers
- EUS-guided placement of “fiducial markers”

Sanders et al, GIE 2010, Park et al, GIE 2010
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Bilio-enteric anastomosis

- Interesting concept when ERCP fails
- Analogous to pseudocyst drainage but bile-duct wall is not attached to bowel!
- Puncturing bile duct is not difficult, dilatation of track important, leakage tends to occur
- Two options:
  - Immediate insertion of stent
  - “Springcoil” anastomotic device, pressure necrosis
Bilio-enteric anastomosis

Do Hyun Park et al, AmJGE 2009
Bilio-enteric anastomosis

Do Hyun Park et al, AmJGE 2009
EUS-guided drainage of PD
EUS-guided drainage of PD
EUS & Biliary tree – *DDW2010*

788i
Endo-Sonography-Guided Cholangio-Pancreatography (ESCP) As the Primary Approach for Ductal Drainage After Failed ERCP
Manuel Perez-Miranda, Carlos De La Serna, Pilar Diez-Redondo, Sara Gomez De La Cuesta, Paula Gil-Simon, Noelia Alcaide, Agustin Caro-Paton

- 2003-2009: 102 pts with failed ERCP for drainage
- Puncture performed in 96, technical success 75
- Complications: 16/96, 7 mild, 9 severe (*3 deaths*)
  - Compl. cautery vs mechanical dilation: 83% vs 7%
- Conclusion: technically feasible, complications high!
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Cholangiocarcinoma

• Hilar obstruction leads to difficult stenting and regular episodes of cholangitis influencing survival
• PDT interesting but not used much
• Radio-Frequency Ablation concept very interesting
• Habib/Westaby (London UK) pioneers
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Summary & conclusions

- Pancreatitis is a difficult disease, less seems more
- Pancreatic cancer is a systemic disease
- Interventional EUS is still under construction
- ERCP: Concentration, concentration!!!
- Radio Frequency Ablation changed the world in liver lesions and might also do in cholangioca (and in pancreatic cancer?)

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Faculty
Raf Bisschops
Michael Bourke
Jacques Devière
Helmut Messmann
Oliver Pech
Frank Vleggaar
Michael Wallace
Kenneth Wang
Hironori Yamamoto
Paul Fockens
Jacques Bergman
Evelien Dekker
Guido Tytgat