

Authors' reply: PBD treatment of cancer of the head of the pancreas

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We thank van der Gaag and Gouma¹ for their comments and interest in our article 'PBD—better stents in specialized centers are needed'.² Empirically, we know that biliary stents have a specific complication rate and that surgical resection has a certain complication and mortality rate. We agree that PBD by plastic stent has a high rate of septic complications and irrespective there is a high surgical mortality in low-volume centers.^{2,3} What has not been demonstrated in a randomized setting is whether there is a benefit from surgical resection with PBD in the best surgical centers using the best endoscopic practice. Unfortunately the trial by van der Gaag *et al.*³ has not been able to answer this question. The number of resections undertaken in this study was also too low (only 120) to permit any *post hoc* subgroup analyses with confidence.

Centralization of pancreatic services has been a key factor in driving down mortality rates. The mortality rates were high in both groups in the study by van der Gaag and colleagues.³ Adoption of short metal stents is cost effective and is now the standard of care in our institution for cases of potentially resectable pancreatic cancer. We routinely undertake PBD with an overall mortality of 3.6%, similar to high-volume centers in The Netherlands.⁴

The authors have confirmed that they were not dealing just with pancreatic ductal adenocarcinomas but a range of periampullary and pancreatic cancers adding further concerns to the poor surgical outcomes.^{1,3} The low-volume centers included in this study almost certainly adversely affected the overall outcome. Improvement of staging using selected laparoscopic

assessment increases the resection rate⁵ and is able to highlight those patients better served by palliation. Although blinding was not entirely possible between the groups in the Dutch study it could be implemented for the assessment of post-surgery complications as well as data collection and subsequent analysis.

Clear national guidelines pertaining to prophylactic antibiotic administration for gastrointestinal endoscopy have been published.^{6–9} Those patients undergoing a second procedure (25% in the present series³) should ideally have had antibiotic prophylaxis with a different agent to the treatment course. Not controlling for either prophylactic or therapeutic antibiotic administration has unnecessarily biased the results against the PBD group from the outset.

We agree with van der Gaag and Gouma¹ that patients with a pancreatic tumor obstructing the bile duct need early surgery but such surgery should be performed only in high-volume centers. Unfortunately the logistics of that process are manifold. The best practice is to undergo PBD using a short, non-foreshortening metal stent with resection in a high-volume center rather than have urgent surgery in a low-volume center as the increased mortality is not mitigated against, even in the light of stent-related complications.

We also agree that the best option is not to postpone surgery. Although this practice might be satisfactory for patients with mild jaundice it may not necessarily be the case for those with deep jaundice. The intrinsic biases in this study (lack of prophylactic antibiotics, use of plastic stents and treatment in

low-volume centers) may well have hidden the potential benefit of alleviating deep jaundice before surgery. The key pragmatic practice points remain the need to use better stents and treat in specialized centers.²

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Competing interests

The authors declare no competing interests.

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