

Supplementary Tables

Microbiological colonization of the pancreatic tumor affects postoperative complications and outcome after pancreatic surgery

Esther Anna Biesel¹, Johanna Sundheimer¹, Mohamed Tarek Badr², Sara Posadas-Cantera²,
Sophia Chikhladze¹, Stefan Fichtner-Feigl¹, Uwe Alexander Wittel¹

Supplementary Table 1: Baseline characteristics and intraoperative parameters in association with colonization with *E. coli* at the time of surgery

| | No evidence of <i>E. coli</i> on pancreatic tumor (n = 168) | Colonization with <i>E. coli</i> (n = 10) | p-value |
|--|--|--|---------|
| Age , years (median, range) | 66 (20 – 86) | 72 (23 – 84) | 0.764 |
| Sex (n, %) | | | |
| - male | 100 (59.5) | 8 (80.0) | 0.198 |
| - female | 68 (40.5) | 2 (20.0) | |
| BMI , kg/m ² (median, range) | 25.2 (16.2 – 43.9) | 27.5 (21.8 – 64.3) | < 0.001 |
| ASA stadium (n, %) | | | |
| - ASA 1 | 1 (0.6) | 0 (0.0) | 0.807 |
| - ASA 2 | 46 (27.4) | 4 (40.0) | 0.388 |
| - ASA 3 | 114 (67.9) | 6 (60.0) | 0.607 |
| - ASA 4 | 7 (4.2) | 0 (0.0) | 0.510 |
| Comorbidities (n, %) | 155 (92.3) | 6 (60.0) | < 0.001 |
| - Coronary heart disease | 16 (9.5) | 2 (20.0) | 0.286 |
| - Hypertension | 97 (57.7) | 5 (50.0) | 0.631 |
| - Pulmonary disease | 36 (21.4) | 0 (0.0) | 0.101 |
| - Renal disease | 18 (10.7) | 0 (0.0) | 0.275 |
| - Liver disease | 27 (16.1) | 0 (0.0) | 0.169 |
| - Diabetes mellitus | 49 (29.2) | 3 (30.0) | 0.955 |
| Alcohol abuse (n, %) | 32 (19.2) | 2 (20.0) | 0.948 |
| Nicotin abuse (n, %) | 62 (36.9) | 3 (30.0) | 0.812 |
| Neoadjuvant therapy (n, %) | 18 (10.7) | 1 (10.0) | 0.943 |
| Bile duct stent preoperative (n, %) | 49 (29.2) | 8 (80.0) | < 0.001 |

| | | | |
|---|--------------------|--------------------|--------------|
| Preoperative leucocytes*10 ³ /µl (median, range) | 7.1 (2.9 – 17.4) | 7.1 (4.6 – 11.8) | 0.987 |
| Preoperative hemoglobin, g/dl (median, range) | 13.0 (8.9 – 20.4) | 13.4 (8.4 – 14.9) | 0.843 |
| Preoperative thrombocytes*10 ³ /µl (median, range) | 257.0 (41 – 589) | 275.5 (195 – 344) | 0.846 |
| Preoperative creatinine, mg/dl (median, range) | 0.82 (0.4 – 2.2) | 0.85 (0.4 – 1.3) | 0.750 |
| Preoperative bilirubine, mg/dl (median, range) | 0.6 (0.2 – 33.8) | 0.85 (0.2 – 1.9) | 0.279 |
| Preoperative serum amylase, U/l (median, range) | 25.0 (2.0 – 674.0) | 31.0 (9.0 – 211.0) | 0.267 |
| Preoperative INR (median, range) | 1.02 (0.90 – 1.85) | 0.99 (0.95 – 1.10) | 0.302 |
| Indication for surgery (n, %) | | | |
| - PDAC | 87 (51.8) | 3 (30.0) | 0.181 |
| - periampullary carcinoma | 22 (13.1) | 5 (50.0) | 0.002 |
| - IPMN | 13 (7.7) | 0 (0.0) | 0.361 |
| - Chronic pancreatitis | 14 (8.3) | 2 (20.0) | 0.210 |
| - Neuroendocrine tumor | 15 (8.9) | 0 (0.0) | 0.323 |
| - Other malign | 2 (1.2) | 0 (0.0) | 0.729 |
| - Other benign | 15 (8.9) | 0 (0.0) | 0.323 |
| Duration of surgery, minutes (median, range) | 372.5 (78 – 722) | 369.5 (162 – 446) | 0.665 |
| Surgical technique (n, %) | | | |
| - pancreatoduodenectomy (open) | 56 (33.3) | 4 (40.0) | 0.665 |
| - pancreatoduodenectomy (min. invasive) | 74 (44.0) | 6 (60.0) | 0.325 |
| - distal pancreatectomy (open) | 5 (3.0) | 0 (0.0) | 0.580 |
| - distal pancreatectomy (min. invasive) | 17 (10.1) | 0 (0.0) | 0.290 |
| - total pancreatectomy | 7 (4.2) | 0 (0.0) | 0.510 |
| - laparoscopic enucleation | 1 (0.6) | 0 (0.0) | 0.807 |
| - other surgery | 8 (4.8) | 0 (0.0) | 0.480 |
| Transfusion of red blood cells intraoperatively, ml (mean, SD) | 66.5 (300.1) | 0 (0.0) | 0.487 |
| Resection margin negative (R0) (n, %) | 106 (84.4) | 7 (87.5) | 0.836 |
| Histopathological classification (n, %) (n = 130) | | | |
| - T1 | 25 (20.5) | 2 (25.0) | 0.761 |
| - T2 | 47 (38.5) | 4 (50.0) | 0.520 |
| - T3 | 43 (35.2) | 2 (25.0) | 0.555 |
| - T4 | 7 (5.7) | 0 (0.0) | 0.486 |
| - N0 | 52 (43.0) | 3 (37.5) | 0.762 |
| - N1 | 38 (31.4) | 1 (12.5) | 0.259 |
| - N2 | 31 (25.6) | 4 (50.0) | 0.133 |

Supplementary Table 2: Complications depending on preoperative biliary stenting

| | Patients without preoperative biliary stenting (n = 121) | Patients with preoperative biliary stenting (n = 57) | p-value |
|---|---|---|----------------|
| Delayed Gastric Emptying (DGE) (n, %) | 45 (37.5) | 22 (40.0) | 0.752 |
| Postpancreatectomy Hemorrhage (PPH B/C) (n, %) | 11 (9.1) | 7 (12.3) | 0.510 |
| Pancreatic fistula (CR-POPF) (n, %) | 41 (33.9) | 22 (38.6) | 0.540 |
| Urinary tract infection (n, %) | 5 (4.1) | 3 (5.3) | 0.734 |
| Wound infection (n, %) | 17 (14.0) | 16 (28.1) | 0.025 |
| Thrombembolism (n, %) | 5 (4.1) | 2 (3.5) | 0.842 |
| Intraabdominal abscess (n, %) | 16 (13.2) | 6 (10.5) | 0.610 |
| Pneumonia (n, %) | 9 (7.4) | 2 (3.5) | 0.310 |
| Reintubation (n, %) | 11 (9.1) | 3 (5.3) | 0.376 |
| Sepsis (n, %) | 6 (5.0) | 3 (5.3) | 0.931 |
| Acute kidney failure (n, %) | 4 (3.3) | 5 (8.9) | 0.113 |
| Insufficiency BDA (n, %) | 0 (0.0) | 1 (1.8) | 0.144 |
| Revision surgery (n, %) | 16 (13.2) | 11 (19.6) | 0.269 |
| Postoperative interventional therapy (n, %) | 37 (30.6) | 23 (40.4) | 0.198 |
| Postoperative conservative therapy (n, %) | 85 (70.2) | 52 (91.2) | 0.002 |
| Postoperative mortality (n, %) | 2 (1.7) | 2 (3.5) | 0.436 |
| Length of hospital stay, days (median,range) | 14 (5 – 55) | 16 (9 – 73) | 0.917 |
| Length of ICU stay, days (median, range) | 5 (2 – 38) | 5 (3 – 41) | 0.657 |