TP is a safe and feasible procedure with acceptable short-term outcome, related to high-volume care. Long-term outcome of metabolic insufficiency and QoL seem to be acceptable as well, but pancreatogenic diabetes is still challenging with substantial negative impact on QoL. Indications of TP has to be reconsidered, especially as treatment for premalignant pancreatic diseases and LAPC.

Introduction
For many years TP was rarely performed due to concerns for metabolic insufficiency and decreased QoL. Renewed interest is seen in the last decades, but large series on TP including metabolic insufficiency and QoL remain scarce.

Objective
To evaluate short- and long-term outcome and QoL after TP.

Method
All patients who underwent primary elective TP between 2008 and 2017 at Karolinska University Hospital were retrospectively analysed. Metabolic insufficiency and QoL were measured in patients still alive, using validated questionnaires.

Results
In total 145 patients (81 males, 74 females) were included. Overall in-hospital and 90-day mortality and major morbidity were 3.4% (5/145), 5.5% (8/145) and 35.2% (51/145), respectively. Univariate and multivariate logistic regression analysis revealed >20 TPs performed per year as independent prognostic factor for less major morbidity (OR = 0.248, 95% CI, 0.109-0.567, \( P < 0.001 \)). During a median follow-up of 14 months (range, 0-119), diabetes related mortality was 0% (0/145).

Metabolic insufficiency and QoL were assessed in 53 patients after a median of 21.0 months (range, 6.0-115.0) postoperatively. Symptoms of glucose fluctuations occurred in 90.6% (48/53) with a median of 10 times (IQR, 4-20) per month and 25% (12/48) ever experienced one or more episodes of loss of consciousness. PAID20 revealed that 13.2% (7/53) possibly had emotional burnout due to diabetes. However, diabetic treatment seems satisfactory according to DTSQs. Management of exocrine insufficiency was acceptable with a median stool consistency of 4.5 points (IQR, 4.0-6.0) on a scale from 1 (hard) to 7 (liquid), according to the BSFS.

Global health status was moderately reduced in comparison to a general Swedish population (65.9% vs. 76.4%; Δ10.5%), measured by EORTC QLQ-C30.

Conclusion
Management of pancreatogenic diabetes is still challenging with substantial negative impact on QoL. Increased volume of TP, related to IPMN and LAPC, may reduce morbidity and mortality.

Abbreviations
TP, total pancreatectomy; QoL, quality of life; PAID20, Problem Areas in Diabetes Questionnaire; DTSQs, Diabetes Treatment Satisfaction Questionnaire status; BSFS, Bristol Stool Form Scale; EORTC QLQ-C30, European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire; IPMN, intraductal papillary mucinous neoplasm; LAPC, locally advanced pancreatic cancer.