**Network meta-analysis comparing techniques and outcomes of stump closure after distal pancreatectomy**

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**ABSTRACT**

**Background**The incidence of pancreatic fistula (POPF) after distal pancreatectomy remains high, and different pancreatic stump closure techniques have been used to reduce the incidence. A network meta-analysis was conducted, comparing the most frequently performed pancreatic stump closure techniques after distal pancreatectomy to determine the technique associated with the lowest POPF rate.

**Methods**   
A systematic search of the Scopus, PubMed, Medline and EMBASE databases was conducted to identify eligible RCT’s. The primary outcome was the occurrence of clinically relevant POPF. Secondary outcomes were operative time, blood loss, intrabdominal collections, postoperative complications and 30-day mortality.

**Results**   
Sixteen RCTs including 1984 patients and eight different pancreatic stump closure techniques were included in the NMA. Patch coverage of the pancreas stump (round ligament or seromuscular patch) after stapler or suture closure ranked best with the lowest rates of clinically relevant POPF, lowest volume of intra-operative blood loss, fewer intra-abdominal abscess, lower rate of overall complications and 30-day mortality. Round ligament patch closure outperformed seromuscular patch closure in preventing clinically relevant POPF with a significantly larger cohort for comparative analysis. Pancreatico-enteric anastomotic closure consistently ranked poorly for most reported postoperative outcomes.

**Conclusion**

Patch coverage after stapler or suture closure has the lowest POPF rate and best outcomes among stump closure techniques following distal pancreatectomy.