

# Double Pigtail Plastic Stents Are Cheaper and As Effective as Lumen Apposing Metal Stent for the Endoscopic Drainage of Walled-Off Necrosis: a Case Control Study

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**Conclusions: Double pigtail stents are not inferior to lumen apposing metal stents for the treatment of pancreatic walled-off necrosis and might represent a cheaper and as effective strategy**

**Background:** The presence of infected walled off necrosis (WON) increases morbidity and mortality in severe acute pancreatitis.

Endoscopic drainage allows necrotic drainage through the creation of a controlled fistula between GI tract and the WON

The patency of fistula is allowed by endoscopic stenting and both double pigtail plastic stents (DPS) or lumen apposing metal stents (LAMS) have been used for such a purpose

LAMS harbor wider diameter and allow necrotic tissue clearance through the execution of multiple sessions of endoscopic necrosectomy but are more expensive and with a non-unequivocally demonstrated safety and cost effectiveness over the classical DPS

Few and mostly heterogeneous studies, have compared DPS and LAMS, for the drainage of walled-off necrosis in terms of short and long-term outcomes

**Aim:** To compare short and long-term outcomes of plastic double pigtail and lumen apposing metal stents for the endoscopic drainage of infected walled off necrosis

## Materials and method

Single center, 1:1 case-control study. Participants were patients who have undergone drainages of infected or highly suspected infected WON through LAMS (cases) or DPS (controls)

Cases and controls were chosen according to timing of endoscopic treatment, since at our institution after 2016, all endoscopic necrosectomies have been performed through the placement of LAMS

**Cases:** participants who have undergone endoscopic necrosectomy through LAMS placement after 2016.

**Controls:** last patients, matched for sex, who had undergone endoscopic necrosectomy, for the same indication, through DPS up to 2016

**Outcomes:** short term and long term outcomes were recorded and compared through Fisher and Students t test

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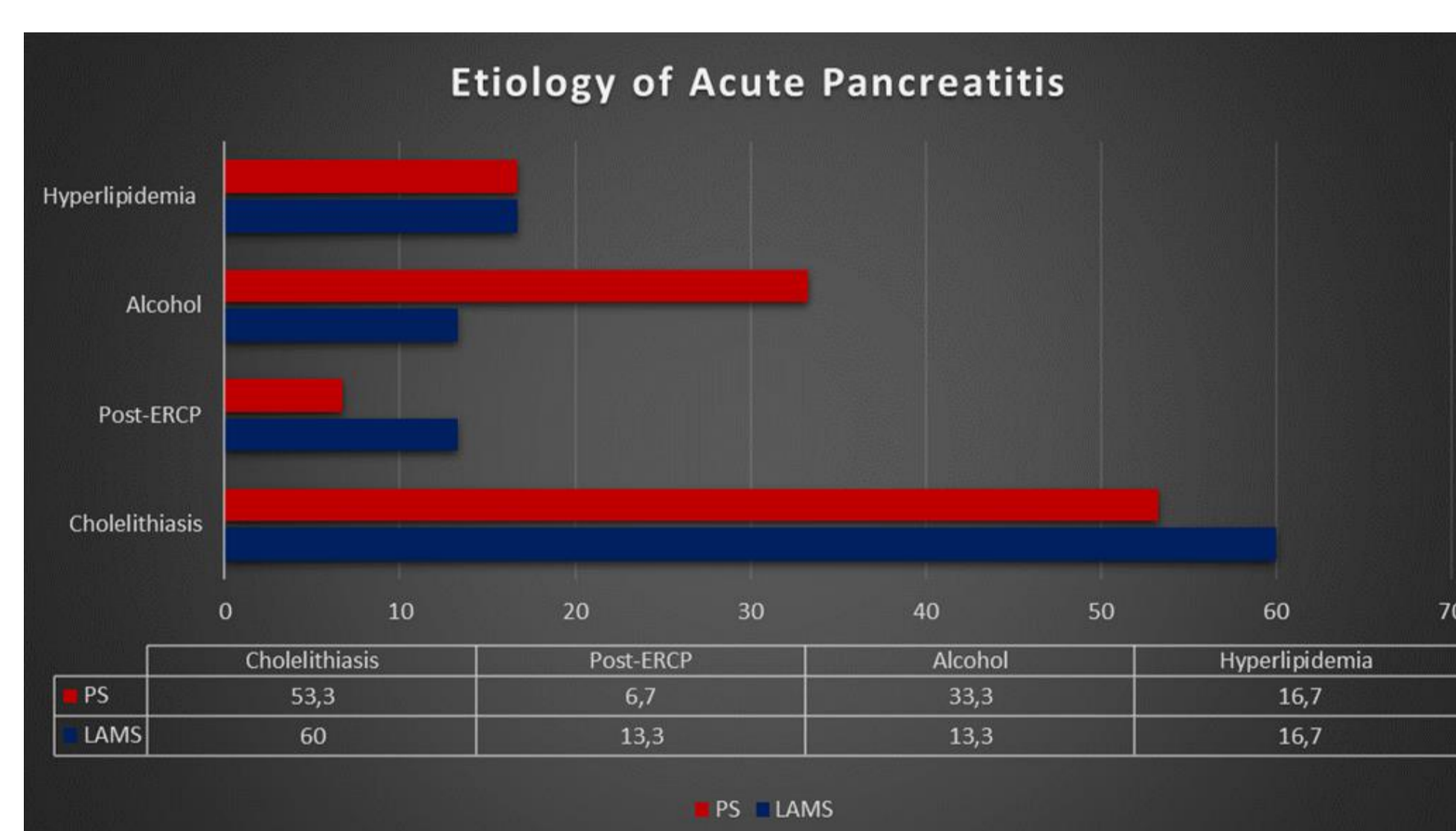
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**Results:** 15 cases and 15 matched controls were enrolled at Karolinska University Hospital, Stockholm, Sweden, between 2011 and 2017.

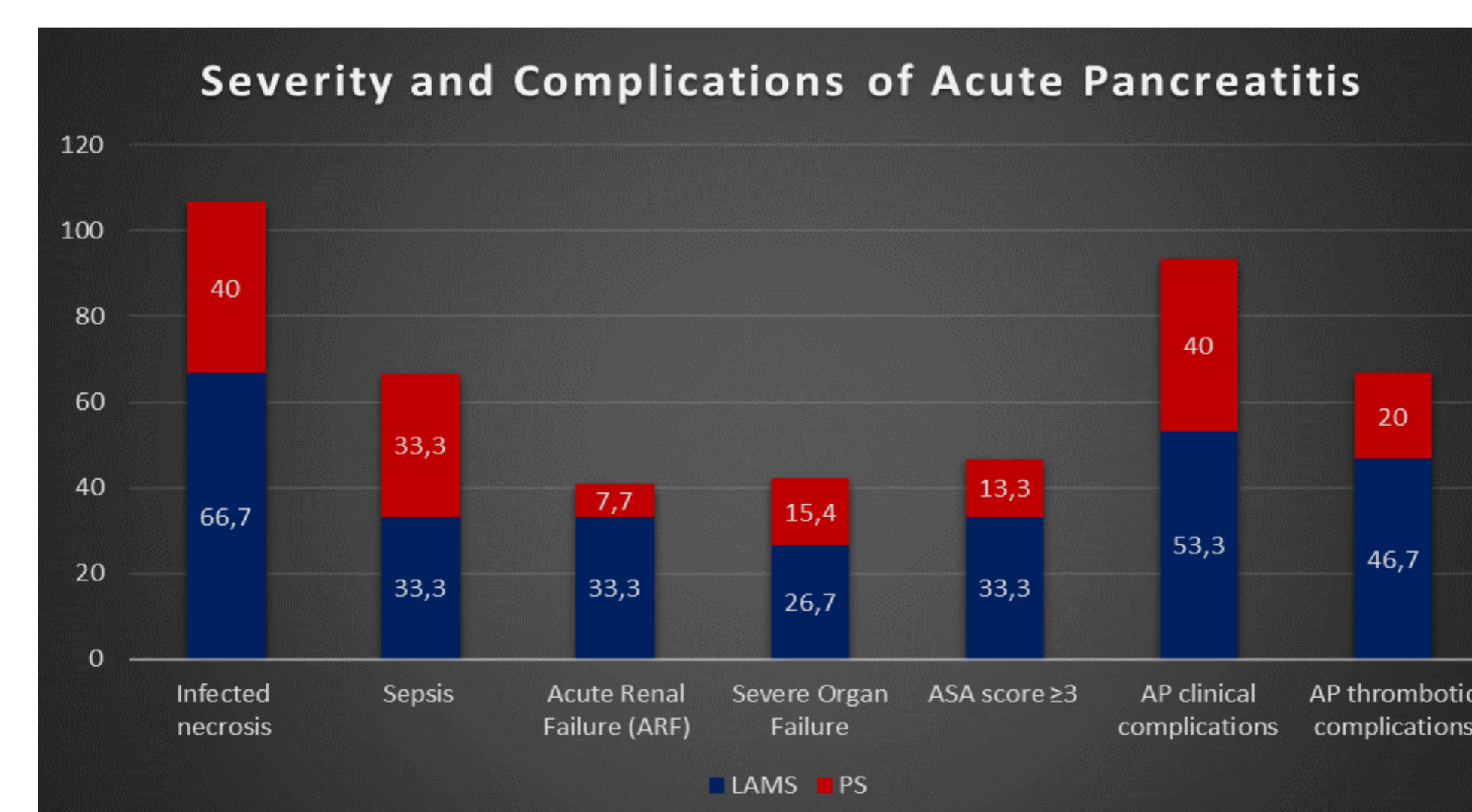
Cases and controls were homogeneous in terms of etiology and clinical characteristics.

Clinical success was achieved in 93.0% of cases and 86.7% of controls without statistically significant differences regarding rates of infection, bleeding and stent migration (respectively 13.3% vs 21.4; p=0.65; 13.3% vs 0%; p=0.48; 13.3% vs 7.1%; p=1.00), nor the need for further additional percutaneous or surgical treatments (33.3% vs 13.3%; p=0.39).

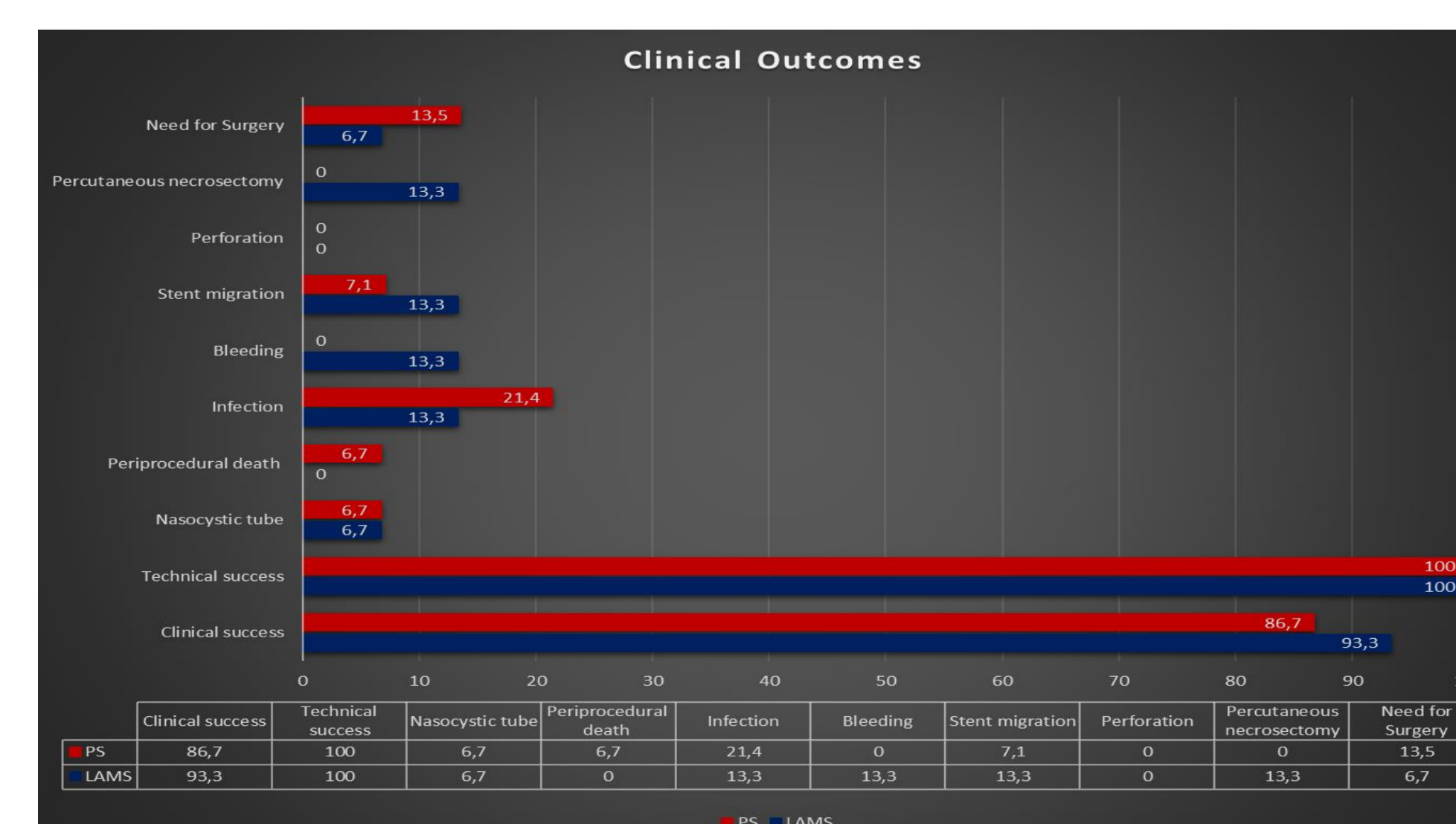
Cases display instead a statistically significant prolonged mean hospital stay (90.2 days vs 18.5; p<0.01) and higher mean number of endoscopic procedures per person (1.5 vs 4.8; p<0.01).



**Figure 1:** The graph shows the prevalence of different etiologies for the occurrence of acute pancreatitis in cases and controls. #PS= Plastic Double Pigtail Stents; ##LAMS= Lumen Apposing Metal Stents



**Figure 2:** The graph shows severity factors and complications of acute pancreatitis in cases and controls. #PS= Plastic Double Pigtail Stents; ##LAMS= Lumen Apposing Metal Stents



**Figure 3:** The graph represents clinical outcomes of endoscopic necrosectomy in cases and controls. Results are expressed in percentages(%). #PS= Plastic Double Pigtail Stents; ##LAMS= Lumen Apposing Metal Stents

