COST-EFFECTIVENESS TRIAL OF SELF-EXPANDABLE METAL STENTS AND PLASTIC BILIARY STENTS IN MALIGNANT BILIARY OBSTRUCTION

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INTRODUCTION: Self-expandable metal (SEMS) and plastic stents can be applied in the palliative endoscopic treatment for patients with unresectable malignant biliary obstruction. SEMS is substantially expensive, but the stent patency is significantly longer. Current guidelines recommend the use of SEMS if the patient’s life expectancy is more than four months.

The AIMS of this study were to compare the therapeutic efficacy and cost-effectiveness of SEMS and plastic stents in the treatment of malignant biliary obstruction.

METHODS: 74 patients with unresectable malignant biliary obstruction were retrospectively enrolled who received a SEMS (34 patients) or a plastic stent (34 patients). We evaluated the technical and functional success, the complication rate, the stent patency and the cumulative cost of treatment.

RESULTS: The complication rate of SEMS was lower compared with plastic stents (40.54% vs. 56.76). The stent occlusion was the most frequent complication. The mean time of stent patency were significantly higher in the SEMS group (19.11 vs. 8.29 weeks; p=0.0041).

In the SEMS group the length (10.89 vs. 13.7 days; p=0.19) and frequency (1.18 vs. 2.32; p=0.033) of hospitalization of patients in context with stent complications were substantially lower, but the necessity of reintervention for stent dysfunction was higher (17 vs. 27; p=0.033). In the plastic stent group the multiple stent implantation increased the stent patency: the second stent raised it from 7.68 to 10.75 weeks.

DISCUSSION: Considering the cost of treatment, the burden of patients and health care system we recommend the SEMS implantation if the life expectancy of patients is more than two months. In short survival cases or if the SEMS not available the multiple plastic stent implantation is recommended.

![X-ray picture, malignant biliary obstruction caused by locally advanced pancreatic cancer.](image1)

![X-ray picture after biliary SEMS implantation.](image2)

![Endoscopic picture of biliary SEMS.](image3)

![X-ray picture, malignant biliary obstruction caused by locally advanced pancreatic cancer.](image4)

![Cumulative cost of one treatment in euro.](image5)

![Repeated interventions after stent implantation.](image6)