

## **Covered vs. Uncovered Self-expandable Metallic Stents (SEMS) for malignant distal biliary obstruction (MDBO).**

Carlos Macías Gómez, MD; Rudiger Lam Chong, MD; Federico Marcaccio, MD; Mariano Marcolongo, MD; Fernando Van Domselaar, MD; Juan De Paula, MD; Jorge Dávalos, MD.

**Background:** The palliation of unresectable MDBO by uncovered SEMS (uSEMS) and its advantages over plastic stents are well studied. However, recurrent jaundice and cholangitis can occur as a result of tumor ingrowth and occlusion of uSEMS. On the other hand, covered SEMS (cSEMS) were designed to overcome these problems, but have been reported to be associated to higher migration and cholecystitis rate. **Aim:** To compare the efficacy, patency and complications rate of cSEMS and uSEMS in the palliation of MDBO. **Patients and methods:** We conducted a retrospective cohort analysis of patients with unresectable MDBO who underwent ERCP and placement of cSEMS or uSEMS for biliary drainage at our institution. From July 2001 to March 2008, 62 patients received wallstents for unresectable MDBO. Under general anesthesia, endoscopic sphincterotomy was performed to all patients followed by the deployment of a wallstent. The procedure related morbidity, stent patency, stent related morbidity and overall patient survival after stent placement was determined. Patients were evaluated monthly on an outpatient basis. **Results:** 52 patients (84%) were followed and included in this analysis. They underwent a total of 58 wallstent placement (31[53%] uSEMS, and 27[47%] cSEMS). 28 (54%) patients were male, and mean patient age was  $69 \pm 13$  (33-97). The underlying malignancy was pancreatic cancer 41 (79%), ampullary cancer 5 (10%), cholangiocarcinoma 4 (8%), biliary papillomatosis in 1, and metastatic lymph node in 1 patient. There were two ERCP related complications (both in uSEMS group). The median follow-up between stent placement and occlusion or patient death with patent stent was 170 days (4-1240). For cSEMS, median follow-up was 189 days (5-1162), and for uSEMS, it was 140 days (4-1240). In the cSEMS group, stent dysfunction occur in 8 (30%) patients versus 7 (23%,  $p=0,31$ ) in the uSEMS group. Median time to occlusion was 270 days (interquartile range 229) in cSEMS, and 129 days (IQR 95,  $p=0,055$ ) in uSEMS. The stenting period complications were: Migration (6[23%] cSEMS, 0 uSEMS,  $p=0.006$ ). Occlusion (2[8%] overgrowth in cSEMS vs 0 uSEMS,  $p=0.204$ ; and 0 ingrowth in cSEMS vs 7[23%] in uSEMS  $p=0,012$ ). Cumulative stent patency rate to 170 days was 0.82 (0.58–0.94, [95% CI]) for the cSEMS group and 0.64 (0.4–0.82 [95%CI]) in the uSEMS group ( $p=0.2$  [Cox-mantel test]). The estimated survival to 270 days was 0.48 (0.29–0.68 [95%CI]) in cSEMS and 0.37 (0.22–0.56 [95%CI]) in uSEMS group ( $p=0.92$ ). **Conclusions.** We found no significant difference in stent patencies, survival or total complications between uSEMS and cSEMS. However, migration was more frequent with cSEMS and ingrowth in uSEMS.