**Treatment of Postoperative Pain in Major Abdominal Surgery With SABER®-Bupivacaine: Results of the BESST Trial**

**INTRODUCTION**

- Early postoperative pain typically peaks on the first postoperative day and shows some improvement over the first 72 hours.
- Therefore, many surgical procedures performed under general anesthesia require postoperative pain management involving the use of strong opioids, but up to 80% of patients experience an opioid-related adverse event.
- Although local anesthetics can significantly reduce pain after surgery, the short duration provides little relief past the first postoperative day.
- SABER-Bupivacaine (succinyl cocaine isobutyrate extended-release bupivacaine) is a semisolid solution that contains the active ingredient bupivacaine HCl (132 mg/mL) in a delivery platform composed of a biodegradable organic matrix and the solvent benzyl alcohol.
- The solvent diffuses on instillation, leaving an extended-release, in situ depot that delivers the local anesthetic at the surgical site throughout the first 72 postoperative hours.
- The Bupivacaine Effectiveness and Safety SABER Trial (BESST) was conducted to extend the existing clinical experience with SABER-bupivacaine to patients undergoing major abdominal surgery.

**METHODS**

**Study Design and Treatment**

- This was an international, multicenter, randomized, double-blind, parallel-group controlled, phase 3 trial in patients undergoing elective major abdominal surgery.
- Patients were enrolled into 1 of 3 cohorts, depending on the type of surgical procedure,
  - Cohort 1 (n = 60): laparoscopic cholecystectomy
  - Cohort 2 (n = 120): laparoscopic cholecystectomy, laparoscopic accessory colectomy
  - Cohort 3 (n = 129): laparoscopic colectomy
- SABER was instilled directly into the surgical incisions with a catheter, whereas bupivacaine HCl was infiltrated into the peri-incisional tissue with a syringe.

**Efficacy Outcomes**

- Prespecified sensitivity analysis of pain intensity using only the scheduled (LogPad) pain scores and excluding the opioid rescue pain scores was performed to assess the therapeutic effect of SABER-Bupivacaine without the complication of frequent opioid pain rescue scores that, unlike the scheduled analgesics, might have reflected incisional pain (inferential analysis with ANOVA).

**RESULTS**

**Study Patients**

- The intent-to-treat (ITT) population consisted of 296 randomly assigned patients: 182 patients treated with SABER-Bupivacaine, 37 treated with bupivacaine HCl, and 77 patients treated with SABER-placebo (Table 1).

**Safety**

- Cardiovascular and neurologic treatment-emergent AEs (TEAEs) were of special interest because high plasma concentrations of bupivacaine may cause AEs in these body systems.
  - The Holter data showed no consistent treatment-related effects on any of the monitored variables.
  - No consistent changes were detected in blood pressure or heart rate.

**REFERENCES**