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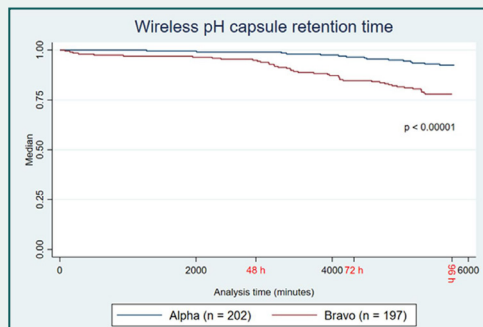
A Comparison of Two Wireless pH Recording Systems: An Analysis of the Attachment Duration and Patient Tolerability

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KEY POINTS

- Comparison of Wireless pH Systems:** The study compared the Bravo™ and Alpha™ wireless pH recording systems in terms of attachment duration and patient tolerability.
- Attachment Duration:** The Alpha™ system had a longer capsule retention time compared to the Bravo™ system.
- Artifact Duration:** Recordings from the Bravo™ system had more artifacts than those from the Alpha™ system.
- Patient Tolerability:** There were no significant differences in patient tolerability and acceptance between the two systems.
- Recommendation Rates:** High recommendation rates were observed for both systems among patients who completed the study.



SUPPORTING PUBLICATIONS

- Sweis R, Fox M, Anggiansah R, et al. Patient acceptance and clinical impact of Bravo monitoring in patients with previous failed catheter-based studies. *Aliment Pharmacol Ther* 2009;29:669-76.

Introduction: Prolonged wireless pH monitoring is the preferred diagnostic tool in unproven GERD when available. The Bravo™ system is better tolerated and increases the diagnostic yield when compared with 24-hour transnasal catheter studies. A novel system, Alpha™*, uses a stitch rather than a pin to attach the capsule to the esophageal wall, stores data temporarily inside the capsule before transmission to the recorder, and has been introduced in the United States and worldwide. This study aims to compare the two systems with respect to the duration of attachment and patient tolerability.

Methods: Three hundred and ninety-nine patients who underwent prolonged wireless pH monitoring at a regional esophageal center from November 2020 to October 2022 were prospectively studied. The clinical indications and standard procedures were similar. The total capsule retention time and duration of artifacts were measured in minutes. A complete day was defined by more than 20 hours of attachment. Patients completed a validated tolerability questionnaire including chest pain, dysphagia, throat discomfort, impact on eating and daily activities, and overall experience of the system, graded on a Likert scale.

Results: Two hundred and two symptomatic patients (mean age 47 [18-82] years, 65% F) underwent wireless Alpha™ and 197 patients (mean age 48 [18-81] years, 72% F) underwent wireless Bravo™ catheter-free pH monitoring. Capsule attachment for 96, 72, and 48-hour studies were obtained in 184 (91%), 195 (96.4%), and 198 (97.9%) patients who received Alpha™ studies respectively, and in 149 (75.6%), 171 (88.6%), and 187 (96.6%) patients who received Bravo™. No complications occurred with either method.

The total capsule retention time was longer in patients receiving the Alpha™ system compared to the Bravo™ system (mean 5560 minutes vs 5194 minutes, $p < 0.00001$).

The Bravo™ system recordings had more artifacts than Alpha™ (mean 272 minutes vs 133 minutes, $p < 0.00001$). In patients who achieved a 96-hour study, there were no significant differences in tolerability and acceptance between the two systems across all domains ($p = 0.08-0.9$). 115 out of 126 (91%) would recommend Alpha™ and 83 out of 91 (91%) patients would recommend Bravo™ to another patient ($p = 0.7$).

Conclusion: Both wireless pH monitoring systems had excellent tolerability and low capsule detachment rates before 96 hours. The Alpha™ system had a lower premature detachment rate, fewer artifacts, and similar tolerability when compared with the Bravo™ system.

References

¹Sweis R, Fox M, Anggiansah R, et al. Patient acceptance and clinical impact of Bravo monitoring in patients with previous failed catheter-based studies. *Aliment Pharmacol Ther* 2009;29:669-76.

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