

Clinical Outcomes Using FAST-SCS: Results of a Multicenter, Observational Real-World Study in the United States

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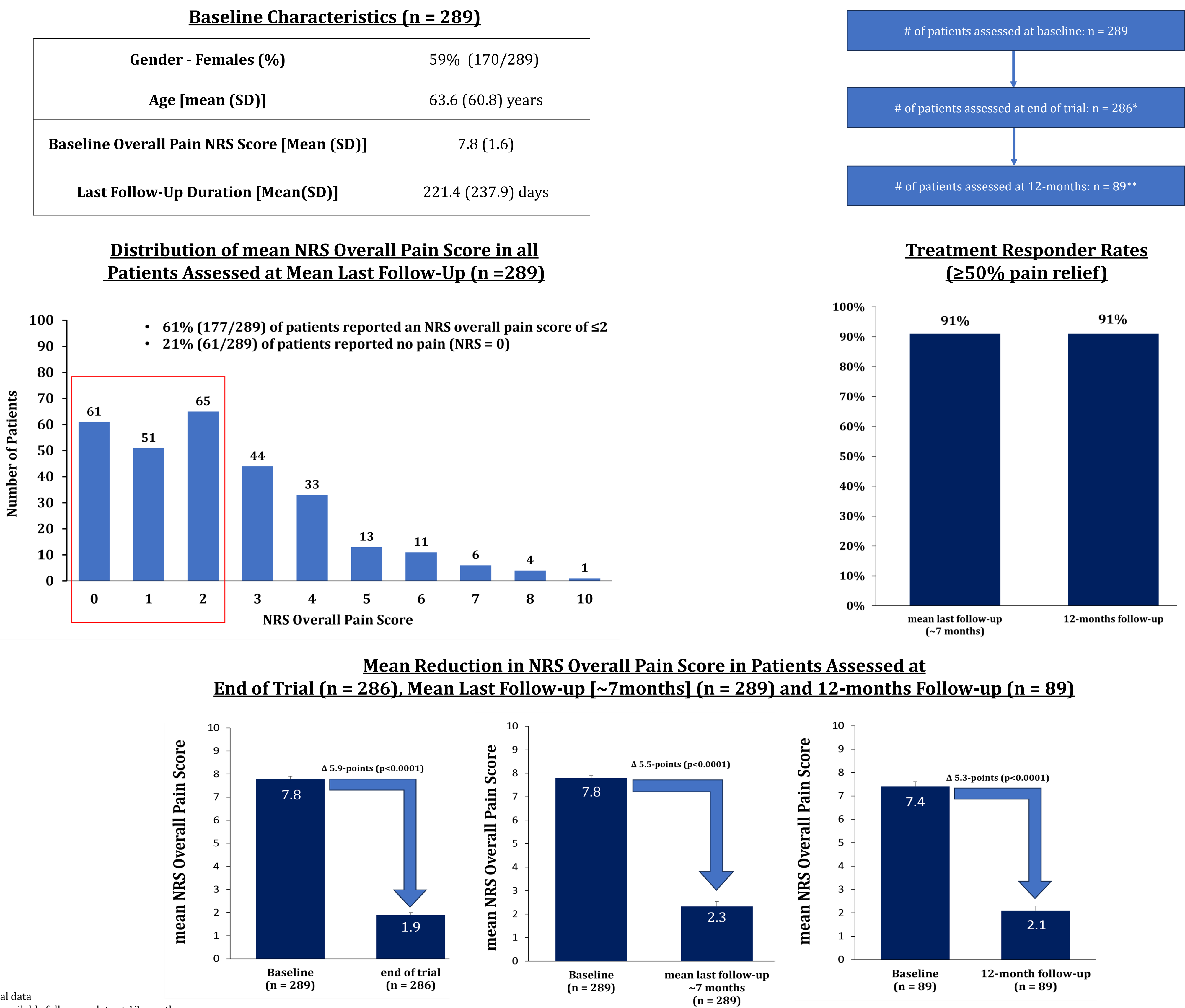
BACKGROUND

Fast-Acting Sub-Perception Therapy (FAST), as a paresthesia-free Spinal Cord Stimulation (SCS) approach, can elicit pain relief within seconds to minutes following neurostimulative activation.¹ Alternatively, traditional paresthesia-free SCS using high frequencies exhibits a slow “wash in” (i.e., the duration until maximum pain relief is achieved after device activation). FAST-SCS induced analgesia has been implicated to be mediated by mechanisms underlying Surround Inhibition (SI).^{2,3} Surround Inhibition is a physiological circuit-based mechanism that regulates transmission of perception signals to focus and control sensory signaling to the central nervous system. FAST-based neurostimulation is thought to re-engage SI-driven mechanisms that putatively have become disrupted in chronic pain disorders.⁴⁻⁶ FAST-SCS requires precise parameters and targeting to effectively engage SI-based mechanisms. Parameters required for FAST-SCS as a treatment for chronic pain were discovered empirically and validated pre-clinically.¹⁻³ Here, we describe our experience using FAST-SCS and examine analgesic outcomes in patients who preferentially used FAST-SCS for chronic pain.

METHODS

Study Design	Multicenter, observational, real-world case-series (Clinicaltrials.gov ID: NCT01550575)
Study Device	WaveWriter Alpha (Boston Scientific, USA)
Cohort	Appropriately-selected patients indicating specific preference for FAST-SCS for treatment of chronic pain and programmed using the following: •biphasic-symmetric (active recharge) waveform at 90 Hz •pulse width: 210 ± 50 µs •stimulation intensity: 30-40% perception threshold

RESULTS



*3 patients had missing trial data

**number of patients with available follow-up data at 12-months

CONCLUSIONS

•Real-world treated patients who preferred use of FAST-SCS for management of chronic pain were observed to achieve durable and robust pain relief out to 12-months follow-up and at mean last follow-up, as per the following:

- ❑ Δ5.5-point reduction in NRS pain score (7.8 → 2.3; p<0.0001)
- ❑ Responder rate of 91%
- ❑ NRS pain score of ≤2 reported in 61% of patients

•These results are consistent with other clinical studies assessing FAST-SCS outcomes.^{7,8}

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DISCLOSURES

Study Sponsored by Boston Scientific. Drs. Pyles and Ferro have consulting agreements with Boston Scientific. Yu Pei and Edward Goldberg are employees of Boston Scientific.