Rapid Onset of Analgesia during Trial Period Utilizing Fast-Acting Sub-Perception Therapy SCS

Emmanuel Gage[1], Richard Ferro[2], John Schneider[3], Yu Pei[4], Roshini Jain[4]

1. Centurion Spine and Pain, Waycross, GA, USA, 2. Multidisciplinary Pain Management, Okemos, MI USA , 3. Comprehensive Pain and Neurology Center, Murfreesboro, TN, 4. Boston Scientific Neuromodulation, Valencia, CA USA

BACKGROUND

Sub-perception Spinal Cord Stimulation (SCS) offers patients an opportunity to obtain pain relief without paresthesia. Onset of maximum pain relief using traditional sub-perception techniques (e.g., 1-10 kHz) can take up to several hours and even days to occur (unlike conventional paresthesia-based SCS), thereby prolonging and potentially compromising therapy optimization.[1-3]

Newly uncovered low frequency-based (90 Hz) Fast-Acting Sub-Perception Therapy (FAST)-SCS is now often observed to provide pain relief below threshold of perception within seconds to minutes – a characteristic more analogous to traditional paresthesia-dependent SCS.[4, 5] Obtaining a quick response to sub-perception therapies, especially during SCS trials is crucial as it has the potential to determine expected response and provide customized therapies for effective pain relief.

Here, we assessed the effectiveness and onset time of FAST-SCS during trial period in a multicenter observational case-series.

METHODS

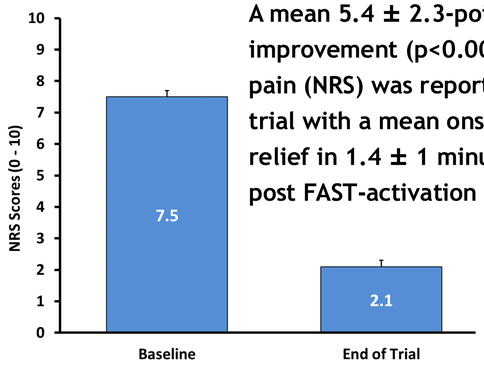
Study Design	Multicenter, Consecutive, Observational, Case-Series Data collected by site personnel only.
Study Device	SCS System (WaveWriter Alpha, Boston Scientific): • Engage multiple mechanisms of action • Paresthesia-Guided Stimulation Field Targeting, Fast-Acting Sub-Perception Therapy (FAST) • Customized Field Shape Programming (Contour) • Illumina3D Algorithm with Multiple Independent Current Control (MICC)
Cohort	53 patients diagnosed with chronic pain who underwent a trial with FAST-SCS only

RESULTS

Baseline Characteristics (n = 53)

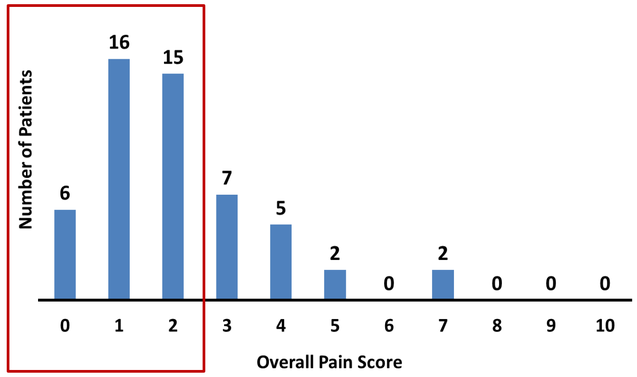
Gender - Females (%)	64.1% (34/53)
Age [Mean (SD)]	65.6 (12.1) years n = 53
Pain Location (%)	Low Back and Legs (96.2%)
	Low Back (94.3%)
Baseline NRS [Mean (SD)]	7.5 (1.7) n = 53
Trial Duration [Mean (SD)]	5.5 (1.7) days n = 53

Overall Pain (NRS) at End of Trial* (n = 53)



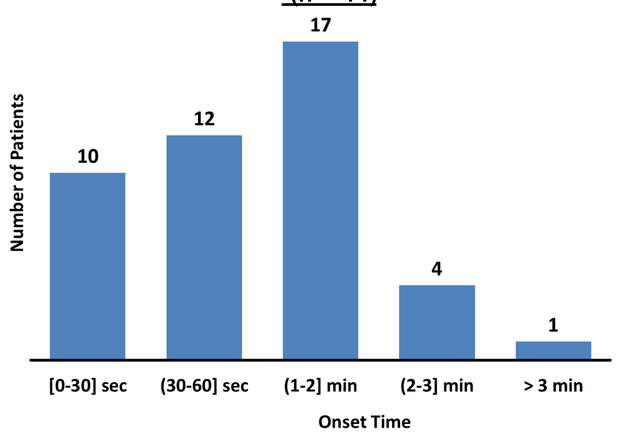
A mean 5.4 ± 2.3-point improvement (p<0.0001) in overall pain (NRS) was reported at end of trial with a mean onset of pain relief in 1.4 ± 1 minutes (n = 44) post FAST-activation

Distribution of Overall Pain Scores at End of Trial with FAST-SCS* (n = 53)



70% (37 of 53) reported a pain score ≤2 at End of Trial with the use of FAST-SCS therapy

Distribution of Onset of Pain Relief with FAST-SCS[¥] (n = 44)



89% (39 of 44) of patients reported pain relief in ≤2 minutes following activation of FAST-SCS therapy.

*End of Trial Pain Scores: NRS or PPR converted to NRS
[¥]Onset data not provided for 9 patients

CONCLUSIONS

- Preliminary data from this ongoing, multicenter observational case series where a cohort of 53 patients underwent a trial with FAST-SCS demonstrates:
  - Significant pain relief (>5-point NRS score reduction) with a fast onset of pain relief (mean = 1.4 minutes, n = 44)
  - 70% of patients reported a pain score of 2 or less at end of trial with FAST-SCS
  - 89% reported pain relief in ≤2-minutes following FAST-SCS activation
- Results are similar to outcomes previously presented from ongoing prospective study[6]
- The success of utilizing fast-onset therapies during trials allows physicians and patients to determine if they are responder and customize therapy in a quick and efficient manner.

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DISCLOSURES

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