20th Annual
Pain Medicine Meeting
November 18-20, 2021 | San Francisco, CA
#ASRAFALL21 | www.asra.com/pain

Abstract: 2160

Scientific Abstracts > Chronic Pain

EFFECT OF PATIENT CHARACTERISTICS ON CLINICAL OUTCOMES OVER 12 MONTHS FOLLOWING DORSAL ROOT GANGLION STIMULATION IMPLANTATION

Abhishek Yadav, Jonathan Hagedorn, Timothy Deer, Ian McArdle, Ryan D'Souza

Brown University

Introduction

Dorsal root ganglion (DRG) stimulation is an effective treatment option for lower extremity complex regional pain syndrome and other focal pain conditions. However, the patient characteristics that may predict long-term outcomes have not been defined.

Materials and Methods

This study was performed after IRB approval from the Saint Francis Hospital review board. This was a retrospective observational study that included 93 patients who were implanted with a DRG stimulator at a single private practice institution. A variety of demographic data including age, gender, BMI, history of smoking, history of hormone use, history of prior opioid use, history of neuropathic medication use, history of psychiatric disorder, pre-procedural opioid consumption in oral morphine equivalents (OME), pre-VAS score and number of DRG leads placed was collected. Follow-up results were reviewed from multiple timepoints over 12 months. Patients were classified as either “responder” or “non-responder”status using two different thresholds, “greater than or equal to 50% pain relief” and “greater than or equal to 80% pain relief”.

Results/Case Report

A history of prior chronic opioid use was associated with significantly lower rates of responder status based on both a 50% pain relief threshold and 80% pain relief threshold at the 1-week to 1-month, 3-month, and 12-month visits. Age, gender, BMI, history of smoking, history of hormone use, history of prior opioid use, history of neuropathic medication use, history of psychiatric disorder, pre-procedural opioid consumption in oral morphine equivalents (OME), pre-VAS score and number of DRG leads placed showed no changes in responder status based on both 50% pain relief threshold and 80% pain relief threshold at any timepoint.

Discussion

This single center retrospective study found patients prescribed chronic opioids at the time of DRG stimulator implantation had a higher likelihood of less than 50% pain relief and 80% pain relief at 1 month, 3 month, and 12 month follow-up visits.

References

Deer TR, Grider JS, Lamer TJ, et al. A Systematic Literature Review of Spine Neurostimulation Therapies for the Treatment of Pain. Pain Med. 2020;21(7):1421 – 1432.

Disclosures

No

Tables / Images

SAINT FRANCIS HOSPITAL
An affiliate of Thomas Health System, Inc.

333 Laidley Street
P.O. Box 471, Charleston, West Virginia 25322
Phone (304) 347-6500

March 12, 2020

Timothy R. Deer, M.D., D.A.B.P.M., F.A.A.D.E.P., C.I.M.E.
The Spine and Nerve Center of Saint Francis Hospital
400 Court Street Suite 100
Charleston, WV 25301

Dear Dr. Deer:

This letter is to inform you of the decision of the Internal Review Committee (IRC) of St. Francis Hospital concerning your request for a waiver of approval for the gathering of declassified data to be used as part of publication. It is our understanding that the process for this data mining has previously been reviewed and approved by the required legal entities of Thomas Health/Saint Francis Hospital. It is also our understanding that the data gathering is to be done by an intern who has all the appropriate hospital required HIPPA paperwork for visitors completed and has been granted IT access.

The stated purpose of gathering this declassified data is to assess gender outcomes on patients receiving DRG implantation for up to one year following the given procedure. It was collected during the spring of 2020. The information from this data mining is to be used by Dr. Timothy R. Deer as part of a publication to which he is a contributor. The intern for this data gathering is Ian McArdle.

This request has been reviewed and said waiver is thereby granted.

Sincerely,

Maria Rendinell, RN, MSN
Chairman of IRC

Responder Status Based on 80% Pain Relief Threshold				
Variable	Responder (N=11)	Non-Responder (N=59)	β-Coefficient or Odds Ratio† (95% CI)	*P* value
Age (years)	63.64±8.34	60.56±14.09	β 3.08 (-6.22 – 12.37)	0.512
Sex, Female Sex, Male	8 (72.7) 3 (27.3)	33 (55.9) 26 (44.1)	OR 2.10 (0.51 – 8.72)	0.307
BMI (kg/m^2)	33.75±3.82	31.32±6.67	β 2.50 (-1.65 – 6.65)	0.234
History of Psychiatric Disorder	7 (63.6)	37 (62.7)	OR 1.09 (0.29 – 4.13)	0.902
History of Smoking	5 (45.4)	26 (44.1)	OR 1.09 (0.30 – 3.97)	0.896
History of Hormone Use	1 (9.1)	6 (10.2)	OR 0.90 (0.10 – 8.30)	0.926
History of Prior Opioid Use	4 (36.4)	38 (64.4)	OR 0.33 (0.09 – 1.26)	0.105
History of Neuropathic Medication Use	10 (90.9)	40 (67.8)	OR 5.00 (0.60 – 41.85)	0.138
Number of DRG Leads Placed	2.54±0.93	2.28±0.98	β 0.26 (-0.38 – 0.90)	0.415
Opioid Consumption (OME)	6.36±10.51	33.69±83.39	β -26.77 (-73.66 – 20.13)	0.260
Pre-VAS Score	7.91±2.02	6.08±2.46	β 1.85 (0.33 – 3.37)	0.017*
Responder Status Based on 50% Pain Relief Threshold				
	Responder (N=23)	Non-Responder (N=47)	β-Coefficient or Odds Ratio† (95% CI)	*P* value
Age (years)	65.74±10.18	58.74±14.20	β 7.00 (-0.06 – 14.05)	0.052
Sex, Female Sex, Male	18 (78.3) 5 (21.7)	23 (48.9) 24 (51.1)	OR 3.76 (1.20 – 11.79)	0.023*
BMI (kg/m^2)	31.91±4.05	31.60±7.25	β 0.40 (-2.83 – 3.64)	0.805
History of Psychiatric Disorder	14 (60.9)	30 (63.8)	OR 0.93 (0.34 – 2.59)	0.895
History of Smoking	10 (43.5)	21 (44.7)	OR 0.99 (0.36 – 2.70)	0.983
History of Hormone Use	3 (13.0)	4 (8.5)	OR 1.65 (0.34 – 8.07)	0.536
History of Prior Opioid Use	11 (47.8)	31 (66.0)	OR 0.50 (0.18 – 1.38)	0.182
History of Neuropathic Medication Use	16 (69.6)	34 (72.3)	OR 0.94 (0.32 – 2.78)	0.913
Number of DRG Leads Placed	2.48±0.99	2.25±0.96	β 0.23 (-0.26 – 0.72)	0.359
Opioid Consumption (OME)	6.74±9.72	40.48±92.28	β -32.90 (-68.72 – 2.92)	0.071
Pre-VAS Score	7.26±2.16	5.92±2.53	β 1.36 (0.18 – 2.53)	0.025*

Table 2. **Patient Characteristics and Responder Status at Follow-up Appointment at 6 Months Post-DRG.** Analysis is presented separately with responder status defined by threshold of 80% pain relief, as well as responder status defined by threshold of 50% pain relief. Mean ± standard deviation are presented for continuous outcomes, and number of patients with percentage is presented for categorical variables; † = β-coefficient is presented when linear regression was performed for continuous dependent variables, and odds ratio (OR) is presented when logistic regression was performed for categorical dependent variables; OME = oral morphine equivalents, CI = confidence interval, *= p-value <0.05.

Responder Status Based on 80% Pain Relief Threshold				
Variable	Responder (N=8)	Non-Responder (N=49)	β-Coefficient or Odds Ratio† (95% CI)	*P* value
Age (years)	65.25±9.92	60.12±15.19	β 5.13 (-5.66 – 15.91)	0.347
Sex, Female Sex, Male	7 (87.5) 1 (12.5)	27 (55.1) 22 (44.9)	OR 5.70 (0.65 – 49.93)	0.116
BMI (kg/m^2)	30.66±6.19	32.26±6.18	β -2.00 (-6.60 – 2.60)	0.390
History of Psychiatric Disorder	5 (62.5)	29 (59.2)	OR 0.86 (0.21 – 3.61)	0.839
History of Smoking	4 (50.0)	20 (40.8)	OR 1.16 (0.28 – 4.86)	0.839
History of Hormone Use	2 (25.0)	3 (6.1)	OR 4.38 (0.62 – 31.04)	0.139
History of Prior Opioid Use	1 (12.5)	33 (67.3)	OR 0.06 (0.01 – 0.53)	0.011*
History of Neuropathic Medication Use	7 (87.5)	31 (63.3)	OR 2.03 (0.38 – 10.85)	0.407
Number of DRG Leads Placed	2.00±0.87	2.22±0.92	β -0.22 (-0.91 – 0.46)	0.514
Opioid Consumption (OME)	11.25±31.82	33.56±89.44	β -23.56 (-75.54 – 28.43)	0.370
Pre-VAS Score	7.25±2.19	5.95±2.50	β 1.05 (-0.68 – 2.78)	0.229
Responder Status Based on 50% Pain Relief Threshold				
	Responder (N=14)	Non-Responder (N=43)	β-Coefficient or Odds Ratio† (95% CI)	*P* value
Age (years)	63.43±10.16	60.00±15.79	β 3.43 (-5.29 – 12.15)	0.436
Sex, Female Sex, Male	11 (78.6) 3 (21.4)	23 (53.5) 20 (46.5)	OR 3.19 (0.78 – 13.06)	0.107
BMI (kg/m^2)	31.85±5.04	32.10±6.52	β -0.57 (-4.38 – 3.25)	0.769
History of Psychiatric Disorder	8 (57.1)	26 (60.5)	OR 0.75 (0.23 – 2.44)	0.630
History of Smoking	8 (57.1)	16 (37.2)	OR 1.93 (0.59 – 6.33)	0.279
History of Hormone Use	2 (14.3)	3 (7.0)	OR 2.05 (0.31 – 13.65)	0.458
History of Prior Opioid Use	4 (28.6)	30 (69.8)	OR 0.16 (0.04 – 0.59)	0.006*
History of Neuropathic Medication Use	10 (71.4)	28 (65.1)	OR 1.07 (0.31 – 3.72)	0.913
Number of DRG Leads Placed	2.07±0.70	2.23±0.97	β -0.17 (-0.73 – 0.40)	0.560
Opioid Consumption (OME)	8.21±23.99	37.66±94.84	β -29.99 (-72.68 – 12.70)	0.166
Pre-VAS Score	7.28±1.94	5.76±2.54	β 1.38 (-0.03 – 2.79)	0.055

Table 3. **Patient Characteristics and Responder Status at Follow-up Appointment at 1 Year Post-DRG.** Analysis is presented separately with responder status defined by threshold of 80% pain relief, as well as responder status defined by threshold of 50% pain relief. Mean ± standard deviation are presented for continuous outcomes, and number of patients with percentage is presented for categorical variables; † = β-coefficient is presented when linear regression was performed for continuous dependent variables, and odds ratio (OR) is presented when logistic regression was performed for categorical dependent variables; OME = oral morphine equivalents, CI = confidence interval, *= p-value <0.05.