


2022 Index by Content

January/February 2022, Volume 25, Number 1


REVIEWS

- | | | |
|---|---|----|
| ◆ | Gray Matter Abnormalities in Patients With Chronic Primary Pain: A Coordinate-Based Meta-Analysis | 1 |
| | Zuxing Wang, MD, Minlan Yuan, PhD, Jun Xiao, BS, Lili Chen, BS, Xiaoyun Guo, PhD, Yikai Dou, PhD, Fugui Jiang, MD, Wenjiao Min, PhD, and Bo Zhou, PhD | |
| ◆ | Autologous Platelet-Rich Plasma Applications in Chronic Pain Medicine: Establishing a Framework for Future Research - A Narrative Review | 15 |
| | Guilherme Ferreira-Dos-Santos, MD, Mark Friedrich B. Hurdle, MD, Steven R. Clendenen, MD, Jason S. Eldrige, MD, and Wenchun Qu, MD, PhD | |
|  | Exploring the Abilities of Peripheral Autonomic Parameters to Describe Pain: Another Dead End? | E1 |
| | Erick Argüello, PhD, Leonardo Bermeo, PhD, and Javier Castillo, PhD | |

RANDOMIZED TRIALS

- | | | |
|---|--|-----|
| ◆ | Safety and Efficacy of Platelet Rich Plasma for Treatment of Lumbar Discogenic Pain: A Prospective, Multicenter, Randomized, Double-blind Study | 29 |
| | Margaret Anne Zielinski, BA, Natalie Eleanor Evans, BA, Hyun Bae, MD, Evish Kamrava, MD, Aaron Calodney, MD, Kent Remley, MD, Ramsin Benyamin, MD, Daniel Franc, MD, PhD, Matthew R. Peterson, MD, Jessica Lovine, BA, Hannah R. Barrows, BA, Kennedy Mahdavi, BA, and Taylor P. Kuhn, PhD, and Sheldon Jordan, MD | |
|  | Clinical Effects and Safety of the Use of Methylene Blue for the Treatment of Lumbar Facet Joint Syndrome | E15 |
| | Xiuqin Yu, MD, Jinyuan Zhang, PhD, Mingxia Wang, MD, Yu Yang, MD, Wei Zhang, MD, Dan Su, MD, Lijun Liao, PhD, Hao Yang, PhD, Hongwei Fang, MD, Xiangrui Wang, PhD | |

ORIGINAL MANUSCRIPTS

- | | | |
|---|---|-----|
| ◆ | Outcomes of Cervical Therapeutic Medial Branch Blocks and Radiofrequency Neurotomy: Clinical Outcomes and Cost Utility Are Equivalent | 35 |
| | Laxmaiah Manchikanti, MD, Vidyasagar Pampati, MSc, Mahendra R. Sanapati, MD, and Joshua A. Hirsch, MD | |
| ◆ | Safety of Interlaminar Cervical Epidural Injections: Experience With 12,168 Procedures in a Single Pain Clinic | 49 |
| | David M. Schultz, MD, Jonathan M. Hagedorn, MD, Alaa Abd-Elseyed, MD, and Scott Stayner, MD, PhD | |
| ◆ | Do Patients Accurately Recall Their Pain Levels Following Epidural Steroid Injection? A Cohort Study of Recall Bias in Patient-Reported Outcomes | 59 |
| | Bilal B. Butt, MD, David Kagan, Joel Gagnier, PhD, Ronald Wasserman, MD, Ahmad Nassr, MD, Rakesh Patel, MD, and Ilyas Aleem, MD | |
| ◆ | Multi-waveform Spinal Cord Stimulation with High Frequency Electromagnetic Coupled (HF-EMC) Powered Implanted Electrode Array and Receiver for the Treatment of Chronic Back and Leg Pain (SURF Study) | 67 |
| | Robert Bolash, MD, Michael Creamer, DO, Richard Rauck, MD, Payam Vahedifar, MD, Aaron Calodney, MD, Ira Fox, MD, Cuneyt Özaktaç, MD, and Niek Vanquathem, BA | |
| ◆ | Utility of Cervical Sympathetic Block in Treating Post-Traumatic Stress Disorder in Multiple Cohorts: A Retrospective Analysis | 77 |
| | Eugene G. Lipov, MD, Ryan Jacobs, MD, Shauna Springer, PhD, Kenneth D. Candido, MD, and Nebojsa Nick Knezevic, MD, PhD | |
| ◆ | No Differences in Pain Scores and Treatment Response in Patients from Different Socioeconomic Areas Within the City of Chicago | 87 |
| | Scott M. Fisher, DO, Ryan Jacobs, MD, Iulia Pirvulescu, MS, Kenneth D. Candido, MD, and Nebojsa Nick Knezevic, MD, PhD | |
|  | Computerized Characterization of Spinal Structures on MRI and Clinical Significance of 3D Reconstruction of Lumbosacral Intervertebral Foramen | E27 |
| | Zheng Liu, PhD, Zhihai Su, PhD, Min Wang, MD, Tao Chen, PhD, Zhifei Cui, MD, Xiaojun Chen, MD, Shaolin Li, MD, Qianjin Feng, PhD, Shumao Pang, PhD, and Hai Lu, PhD | |
|  | Open Paddle Lead Trial for Spinal Cord Stimulation: An Institutional Experience | E37 |
| | Omar S. Akbik, MD, Salah G. Aoun, MD, Owoicho Adogwa, MD, Carlos A. Bagley, MD, and Mazin Al Tamimi MD | |



January/February 2022, Volume 25, Number 1

- e** Treatment of Femoral Head Osteonecrosis with Ozone Therapy: Pilot Trial of a New Therapeutic Approach E43
Jian-Xiong An, MD, Guo-Ping Wu, MD, Kun Niu, MD, You-Ping Wei, MD, Hui Liu, MD, Xin-You Gao, MD, Jian-Ping Wu, MD, Yong Wang, MD, Harald Renz, MD, and John P. Williams, MD
- e** Horner Syndrome Following Intercostal Nerve Block Via an Anterolateral Approach in Breast Lumpectomy: A Prospective Nested Case-control Study E55
Wenting Hou, MD, Jing Zhong, MD, PhD, Xijun Yang, MD, FCheng Ni, MD, PhD, Chen Ling, MD, Minzhi Lv, Ma, Meilin Weng, MD, and Changhong Miao, MD, PhD
- e** Radiation Doses for Different Approaches of Fluoroscopy-Guided Epidural Injections: An Observational Clinical Study E67
Rekib Sacaklidir, MD, Ekim Can Ozturk, MD, Savas Sencan, MD, and Osman Hakan Gunduz, MD
- e** Percutaneous Endoscopic Robot-Assisted Transforaminal Lumbar Interbody Fusion (PE RA-TLIF) for Lumbar Spondylolisthesis: A Technical Note and Two Years Clinical Results E73
Mingzheng Chang, MD, Lianlei Wang, MD, Suomao Yuan, MD, Yonghao Tian, MD, Yiwei Zhao, MD, and Xinyu Liu, MD, PhD
- e** Pain-Free Survival After Endoscopic Rhizotomy Versus Radiofrequency for Lumbar Facet Joint Pain: A Real-World Comparison Study E87
Tao Du, MD, Guang Lu, MD, Junchi Li, MD, Bing Ni, MD, Wei Shu, MD, Tao Sun, MD, Dou Yang, MD, and Hongwei Zhu, MD
- e** Latent Class Analysis of Maternal Comorbid Conditions among Hospitalized Pregnant Women Diagnosed with Opioid Use Disorders in North Carolina E95
Brook T. Alemu, PhD, Hind A. Beydoun, PhD, and Olaniyi Olayinka, MD
- e** Psychometric Properties of the Multidimensional Pain Inventory: Japanese Language Version (MPI-J) E105
Satoshi Kasahara, MD, PhD, Naoto Takahashi, MD, PhD, Ko Matsudaira, MD, PhD, Hiroyuki Oka, MD, PhD, Kozue Takatsuki, MA, and Shoji Yabuki, MD, PhD
- e** Medical Cannabis Used as an Alternative Treatment for Chronic Pain Demonstrates Reduction in Chronic Opioid Use – A Prospective Study E113
Gregory Benedict, MD, Annas Sabbagh, DO, and Till Conermann, MD
- e** The Impact of Local Corticosteroid Administration on the Incidence of Post-Neurotomy Neuritis: A Prospective Investigation E121
Brody Fitzpatrick, BS, Kellen Hilton, MD, Michael Suer, MD, Michelle Poliak-Tunis, MD, and Scott Hetzel, MS
- e** Study of Infraorbital Foramen Using 3-Dimensional Facial Bone Computed Tomography Scans E127
Ji Hee Hong, MD, PhD, Hyung Jun Kim, MD, Jung Hee Hong, MD, and Ki Bum Park, MD, PhD
- e** Efficacy and Safety of Establishing an Optimal Path Through Unilateral Pedicle Under the Assistance of Surgical Robot in Percutaneous Kyphoplasty E133
Jun Qian, PhD, Chao Fang, MD, Peng Ge, MD, Ren-Jie Zhang, PhD, Pei-wen Song, PhD, Peng Xu, PhD, Yong Zhang, PhD, and Cai-Liang Shen, PhD
- e** Effect of Ultrasound-Guided Partial Release of the Transverse Carpal Ligament With a Needle in Patients With Refractory Carpal Tunnel Syndrome E141
Sang Hoon Lee, MD, Hyun Hee Choi, MS, and Min Cheol Chang, MD
- e** Multivariate Pattern Analysis in Identifying Neuropathic Pain Following Brachial Plexus Avulsion Injury: A PET/CT Study E147
Ao-Lin Hou, MD, Jia-Jia Wu, MD, PhD, Xiang-Xin Xing, MD, Bei-Bei Huo, MD, PhD, Jun Shen, MD, PhD, Xu-Yun Hua, MD, PhD, Mou-Xiong Zheng, MD, PhD, and Jian-Guang Xu, MD, PhD
- e** Prognostic Factors for Successful Percutaneous Disc Decompression Using the Navigable Device L'DISQ™ in Patients With Lumbar Discogenic Pain E157
Ji Yeong Kim, MD, Ku Sang Lee, MD, Sang Min Jung, MD, and Young Hoon Kim, MD, PhD

LETTERS TO THE EDITOR

- e** Comments on "Chronic Pain: Associated with an Increased Risk of Dementia?" E165
Rui Gao, MD, PhD, Ruiqun Wang, MD, Tao Zhu, MD, PhD, and Chan Chen, MD, PhD

January/February 2022, Volume 25, Number 1

-  ♦ **Comments on “Relative Efficacy and Safety of Pharmacotherapeutic Interventions for Diabetic Peripheral Neuropathy: A Systematic Review and Bayesian Network Meta-Analysis”** E167
Juan-Camilo Vargas-González, MD, PhD and Fabio-Alexander Sierra-Matamoro, MS
-  ♦ **In Response to Comments on “Relative Efficacy and Safety of Pharmacotherapeutic Interventions for Diabetic Peripheral Neuropathy: A Systematic Review and Bayesian Network Meta-Analysis”** E168
Mir Mahmood Asrar, Sunita Kumari, Anil Bhansali, Boya Chandrasekhar, and Dipika Bansal, MD

IN ERRATA

95

March/April 2022, Volume 25, Number 2


HEALTH SERVICES RESEARCH

- ◆ **Fourth Wave of Opioid (Illicit Drug) Overdose Deaths and Diminishing Access to Prescription Opioids and Interventional Techniques: Cause And Effect** 97
Laxmaiah Manchikanti, MD, Vanila Mathur Singh, MD, Peter S. Staats, MD, Andrea M. Trescot, MD, John Prunskis, MD, Nebojsa Nick Knezevic, MD, PhD, Amol Soin, MD, Alan D. Kaye, MD, PhD, Sairam Atluri, MD, Mark V. Boswell, MD, PhD, Alaa Abd-Elseyed, MD, and Joshua A. Hirsch, MD
- ◆ **Pain Medicine Fellowship Video Interviews: A COVID-19 Trend or Here to Stay?** 125
Rebecca Dale, DO, Logan Kinch, MD, Lynn Kohan, MD, Timothy Furnish, MD, Rene Przkora, MD, PhD, Shalini Shah, MD, Boris Spektor, MD, Shravani Durbhakula, MD, Manuel Lombardero, MS, and Scott Brancolini, MD
- ◆ **The Impact of COVID-19 on Interventional Pain Management Practices is Significant and Long-Lasting: An Interventional Pain Management Physician Survey** 131
Laxmaiah Manchikanti, MD, Vidyasagar Pampati, MSc, Sachin "Sunny" Jha, MD, Mahendra R. Sanapati, MD, Amol Soin, MD, Shalini Shah, MD, Alan D. Kaye, MD, PhD, and Joshua A. Hirsch, MD

REVIEWS

- ◆ **Comparison of Clinical Efficacy of Epidural Injection With or Without Steroids in the Treatment of Degenerative Disc Disease: Meta-analysis** 145
Zeyu Fang, MD, Chenghua Yuan, MD, Lei Cheng, MD, Qingyu Yao, MD, Can Zhang, MD, Xinyu Wang, MD, Jian Guan, MD, and Fengzeng Jian, MD
-  **Effect of Intravenous Dexamethasone on Postoperative Pain in Patients Undergoing Total Knee Arthroplasty: A Systematic Review and Meta-Analysis** E169
Shuang Liang, MD, Manyu Xing, MD, Shasha Jiang, MD, and Wangyuan Zou, MD, PhD
-  **The Impact of Isolation during COVID-19 on Chronic Musculoskeletal Pain in the Geriatric Population: A Narrative Review** E185
Morgan E. Gonder, MD, Walter N. Orr, MPH, and Talal W. Khan, MD
-  **A Comprehensive Review of the Use of $\alpha 2$ Agonists in Spinal Anesthetics** E193
Ruben H. Schwartz, DO, Stephanie Hernandez, MD, Nazir Noor, MD, Jacob Topfer, DO, Kyle Farrell, MD, Naina Singh, MS, Ayushi Sharma, MS, Giustino Varrassi, MD, PhD, and Alan D. Kaye, MD, PhD

RANDOMIZED TRIALS

- ◆ **Comparison of Caudal Versus Transforaminal Epidural Steroid Injection in Post Lumbar Surgery Syndrome After Single-level Discectomy: A Prospective, Randomized Trial** 161
Alp Eren Celenioglu, MD, Savas Sencan, MD, Serhad Bilim, MD, Mert Sancar, MD, and Osman Hakan Gunduz, MD
-  **Short-term Effect of Repetitive Transcranial Magnetic Stimulation on Diabetic Peripheral Neuropathic Pain** E203
Seoyon Yang, MD, Sang Gyu Kwak, PhD, Gyu-Sik Choi, MD, and Min Cheol Chang, MD

ARTIFICIAL INTELLIGENCE/MACHINE LEARNING

- ◆ **A Pilot Study Implementing a Machine Learning Algorithm to Use Artificial Intelligence to Diagnose Spinal Conditions** 171
Amol Soin, MD, Megan Hirschbeck, MD, Michael Verdon, DO, and Laxmaiah Manchikanti, MD
-  **The Analysis of Pain Research through the Lens of Artificial Intelligence and Machine Learning** E211
Jagadesh N. Nagireddi, MEng, Amana Ketan Vyas, Mahendra R. Sanapati, MD, Amol Soin, MD, and Laxmaiah Manchikanti, MD
-  **Automated Extraction of Pain Symptoms: A Natural Language Approach using Electronic Health Records** E245
Amisha D. Dave, BSE, Gualberto Ruaño, MD, PhD, Jonathan Kost, MD, and Xiaoyan Wang, PhD




ORIGINAL MANUSCRIPTS

- ◆ **Equivalent Outcomes of Lumbar Therapeutic Facet Joint Nerve Blocks and Radiofrequency Neurotomy: Comparative Evaluation of Clinical Outcomes and Cost Utility** 179
Laxmaiah Manchikanti, MD, Radomir Kosanovic, MD, Vidyasagar Pampati, MSc, Mahendra R. Sanapati, MD, Amol Soin, MD, Nebojsa Nick Knezevic, MD, PhD, Bradley W. Wargo, DO, and Joshua A. Hirsch, MD


March/April 2022, Volume 25, Number 2

◆	Evaluation of the Effectiveness of Autologous Bone Marrow Mesenchymal Stem Cells in the Treatment of Chronic Low Back Pain Due to Severe Lumbar Spinal Degeneration: A 12-Month, Open-Label, Prospective Controlled Trial	193
	Sairam Atluri, MD, Matthew B. Murphy, PhD, Ryan Dragella, PhD, Jessica Herrera, BS, Kwadwo Boachie-Adjei, BS, CPH, Sachi Bhati, Vivek Manocha, MD, Navneet Boddu, MD, Pavan Yerramsetty, MD, Zaid Syed, Meghana Ganjam, Divit Jain, Zaynab Syed, Nikhil Grandhi, and Laxmaiah Manchikanti, MD	
◆	Point To Area of Pain: A Clinically Useful Telehealth Physical Exam Technique for Focal Nociceptive and Neuropathic Pain	209
	Christopher Yih, DO, Krupali Chokshi, MD, Christopher Kyriakides, DO, Kyle Seko, DO, Sayed Wahezi, MD, Naum Shaparin, MD, Amaresh Vydyanathan, MD, Jean Carlo Gallardo, MD, Lisa Morrow, NP, Kevin Sperber, MD, and Jacob R. Hascalovici, MD, PhD	
	Awake, Transforaminal Endoscopic Lumbar Spine Surgery in Octogenarians: Case Series	E255
	Albert E. Telfeian, MD, PhD, Rahul Sastry, MD, Adetokunbo Oyelese, MD, PhD, Jared Fridley, MD, Joaquin Q. Camara-Quintana, MD, Tianyi Niu, MD, Prakash Sampath, MD, Kai-Uwe Lewandrowski, MD, Kyle Mueller, MD, and Ziya L. Gokaslan, MD	
	Comparison of Increase in the Optic Nerve Sheath Diameter between Epidural Saline and Contrast Medium Injections	E263
	Ji Hee Hong, MD, PhD, Ji Hoon Park MD, PhD, and Ki Beom Park, MD, PhD	
	Potential Molecular Mechanisms of Electroacupuncture With Spatial Learning and Memory Impairment Induced by Chronic Pain on a Rat Model	E271
	Jian-Feng Zhang, MD, John P. Williams, MD, Wan-Rui Shi, MD, Xiao-Yan Qian, CRNA, Qian-Nan Zhao, MD, Guo-Fang Lu, MS, and Jian-Xiong An MD, PhD	
	Baseline Kinesiophobia and Pain Catastrophizing Scores Predict Prolonged Postoperative Shoulder Pain	E285
	Michael Suer, MD, Nicholas Philips, MD, Stephanie Kliethermes, PhD, Tamara Scerpella, MD, and Nalini Sehgal, MD	
	Anatomy of the Trigeminal Nerve and Its Clinical Significance Via Fusion of Computed Tomography and Magnetic Resonance Imagery	E293
	YaJing Chen, MD, Xiaolan Liu, MD, ShuangShuang Xu, MD, and Bing Huang, MD	
	Percutaneous Endoscopic Surgery Alone to Treat Severe Infectious Spondylodiscitis in the Thoracolumbar Spine: A Reparative Mechanism of Spontaneous Spinal Arthrodesis	E299
	I-Hao Lin, MD, Chia-Yu Lin, MD, Chien-Chun Chang, MD, PhD, Yen-Jen Chen, MD, PhD, Pang-Hsuan Hsiao, MD, Hsi-Kai Tsou, MD, PhD, Hui-Yi Chen, MD, and Hsien-Te Chen, MD, PhD	
	Bi-Needle PELD with Intra-Discal Irrigation Technique for the Management of Lumbar Disc Herniation	E309
	Xiaodong Wu, MD, Jianxi Wang, MD, Zeng Xu, MD, Qingbin Meng, MD, Yu Chen, MD, Xinwei Wang, MD, Xiao-xiang Gao, MD, Xiao-long Shen, MD, Huajiang Chen, MD, and Wen Yuan, MD	
	The Ultrasound-guided Anteromedial Joint Line Approach: A Targeted Corticosteroid Injection Technique for Patients With Medial Knee Pain	E319
	Ya-Ting Chen, MD, Phillip H. Yun, MD, Alan J. Sutton, MD, Kristin M. D'Silva, MD, and Minna J. Kohler, MD	
	Varied Low Back Pain Induced by Different Spinal Tissues in Percutaneous Endoscopic Lumbar Discectomy: A Retrospective Study	E331
	Nan Ru, MD, Cheng Su, MD, Jianlong Li, MD, Yang Li, PhD, Feifei Chen, MD, Guodong Wang, MD, Jianmin Sun, MD, Xingang Cui, MD	
	A Retrospective Analysis of Sacroiliac Joint Pain Interventions: Intraarticular Steroid Injection and Lateral Branch Radiofrequency Neurotomy	E341
	Andrew C. Young, MD, Hao Deng, MD, Arissa Opalacz, PA-C, Sarah Roth, BS, Evgenia Jen Filatava, BS, Corrie A. Fisher, MS, Karina de Sousa, BS, Grace Mogren, BS, and Lucy Chen, MD	
	Predicting Epidural Space Spread Using Ultrasound Color Doppler Imaging in Interlaminar Epidural Steroid Injection: A Prospective Observational Study	E349
	Yeon Ju Kim, MD, Hyungtae Kim, MD, PhD, Ha-Jung Kim, MD, PhD, Won Uk Koh, MD, PhD, Jiyoung Kim, MD, and Young-Jin Ro, MD, PhD	
	Comparison of Efficacy and Safety of Lumbar Sympathetic Radiofrequency Thermocoagulation Versus Chemical Lumbar Sympathectomy in the Treatment of Cold Hypersensitivity in the Hands and Feet: A Retrospective Study	E357
	Jiachun Tao, MD, Bing Huang, MD, Jiayi Tang, MD, Ge Luo, MD, Jianjun Zhu, MD, Qiuli He, MD, Huadong Ni, PhD, Keyue Xie, MD, and Ming Yao, PhD	

March/April 2022, Volume 25, Number 2

-  **A Novel Piriformis Injection Technique Utilizing Combined Fluoroscopy and Ultrasound – A Pilot Study** E365
Briana Martiszus, BS, Sean Hua, BS, Sandy Christiansen, MD, Katrina Ramsey, MPH, and Emmanuel Zusmer, MD
-  **Shape Memory Nitinol Based Minimally Invasive Spinal Cord Stimulation Device Concept for Improved Pain Management** E375
Shailen G. Sampath, MSc, Albert E. Telfeian, MD, PhD, Ruth Sullivan, Andrea Lu, BSc, and Vikas Srivastava, PhD
-  **Identification of Preoperative Serum Metabolites Associated With Postoperative Opioid Consumption in Gastric Cancer Patients by Extreme Phenotype Sampling** E385
Jianing Li, PhD, Shuo Li, MM, Ling Yu, MD, Jin Wei, MD, Hongwei Sun, MM, Caixia Yang, BS, and Hongyu Tan, MD

LETTERS TO THE EDITOR

-  **Comment on “Relationship between Vitamin D and Nonspecific Low Back Pain May Be Mediated by Inflammatory Markers”** E397
Askar Amar, MD, Pengfei Wu, MD, Xin Lv, MD, and Bing Wang, MD, PhD
-  **Dexmedetomidine and Lidocaine: Useful Adjuvants for Analgesia after Abdominal Surgery?** E399
Xingwei Cai, MD, Rui Gao, MD, PhD, Ruiqun Wang, MD, Xueying Zhang, MD, and Chan Chen, MD, PhD
- ◆ **In Response to “Dexmedetomidine and Lidocaine: Useful Adjuvants for Analgesia after Abdominal Surgery?”** E402
Martina Rekatsina, MD, Polyxeni Theodosopoulou, MD, and Chryssoula Staikou, MD, PhD
-  **Comments on “Pulsed Radiofrequency Treatment of Saphenous Nerve for Osteoarthritis”** E404
Aakanksha Aggarwal, MD
- ◆ **In Response to “Comments on Pulsed Radiofrequency Treatment of Saphenous Nerve for Osteoarthritis”** E405
Hironobu Uematsu, MD
-  **Analgesia Drugs are the Fundamental Treatment for Herpes Zoster-related Pain** E406
Ling Sang, MS and Li Song, MD
- ◆ **In Response to “Analgesia Drugs are the Fundamental Treatment for Herpes Zoster-related Pain”** E407
Ge Luo, MD, Keyue Xie, MD, Ling Ma, MD, and Ming Yao, PhD
-  **Comments on “Long-term Follow-up of Pulsed Radiofrequency Treatment for Trigeminal Neuralgia: Kaplan-Meier Analysis in a Consecutive Series of 149 Patients”** E408
Victor Silva, MD
- ◆ **In Response to comments on “Long-term Follow-up of Pulsed Radiofrequency Treatment for Trigeminal Neuralgia: Kaplan-Meier Analysis in a Consecutive Series of 149 Patients”** E409
Luo Fang, MD, PhD and Zipu Jia, MD
-  **Comments on “The Correlation of Epidural Fibrosis with Epiduroscopic and Radiologic Imaging for Chronic Pain after Back Surgery”** E410
Bing Du, PhD, Pengfei Wu, MD, Askar Amar, MD, Mengjuan Deng, MD
- ◆ **In Response to “Comments on The Correlation of Epidural Fibrosis with Epiduroscopic and Radiologic Imaging for Chronic Pain after Back Surgery”** E412
Derya Guner, MD, Ibrahim Asik, MD, G. Enver Ozgencil, MD, Elif Peker, MD, and M. Ilhan Erden, MD
-  **Comments on “Evaluation of Intracranial Pressure during Neural Laser Discectomy”** E414
Donato Rosa, MD, Mario Graziano, MD, and Ilenia De Paola, MD

IN ERRATA


221

May/June 2022, Volume 25, Number 3

HEALTH SERVICES RESEARCH

- ◆ **COVID-19 Pandemic Reduced Utilization Of Interventional Techniques 18.7% In Managing Chronic Pain In The Medicare Population In 2020: Analysis Of Utilization Data From 2000 To 2020** 223
Laxmaiah Manchikanti, MD, Vidyasagar Pampati, MSc, Mahendra R. Sanapati, MD, Radomir Kosanovic, MD, Douglas P. Beall, MD, Sairam Atluri, MD, Salahadin Abdi, MD, PhD, Shalini Shah, MD, Mark V. Boswell, MD, PhD, Alan D. Kaye, MD, PhD, Amol Sooin, MD, Christopher G. Gharibo, MD, Bradley W. Wargo, DO, and Joshua A. Hirsch, MD
- ◆ **Impact Of COVID-19 Pandemic and Updated Utilization Patterns of Sacroiliac Joint Injections from 2000 to 2020 in The Fee-For-Service (FFS) Medicare Population** 239
Laxmaiah Manchikanti, MD, Thomas T. Simopoulos, MD, Vidyasagar Pampati, MSc, Maanasa V. Manchikanti, Radomir Kosanovic, MD, Salahadin Abdi, MD, PhD, Mahendra R. Sanapati, MD, Dhanalakshmi Koyyalagunta, MD, Nebojsa Nick Knezevic, MD, PhD, Douglas P. Beall, MD, Amol Sooin, MD, Alan D. Kaye, MD, PhD, Alaa Abd-Elseyed, MD, and Joshua A. Hirsch, MD



REVIEWS

- ◆ **Cervical Facet Joint Pain and Cervicogenic Headache Treated With Radiofrequency Ablation: A Systematic Review** 251
Michael Suer, MD, Sayed Emal Wahezi, MD, Alaa Abd-Elseyed, MD, and Nalini Sehgal, MD
- ◆ **Does Direct Surgical Repair Benefit Pars Interarticularis Fracture? A Systematic Review and Meta-analysis** 265
Sung Huang Laurent Tsai, MD, Chia-Wei Chang, MD, Wei-Cheng Chen, MD, Tung-Yi Lin, MD, Ying-Chih Wang, MD, Chak-Bor Wong, MD, Yagiz Ugur Yolcu, MD, Mohammed Ali Alvi, MBBS, Mohamad Bydon, MD, and Tsai-Sheng Fu, MD
-  **Rationale and Recent Advances in Targeted Drug Delivery for Cancer Pain: Is It Time to Change the Paradigm?** E415
Denis Dupoirson, MD, Rui Duarte, PhD, Gabriel Carvajal, MD, Frederic Aubrun, PhD, and Sam Eldabe, PhD



RANDOMIZED TRIALS

- ◆ **Multimodal Analgesia With Sevoflurane Provides Enhanced Intraoperative Analgesic Effects in Percutaneous Nephrolithotomy: A Randomized, Blinded Clinical Trial** 283
Xiao-Hua Wang, Si-Yuan Zhang, MD, Yi Huang, MD, Qian Wang, PhD, Luwen Zou, MD, Guoguang Zhao, PhD, and Tian-Long Wang, PhD
- ◆ **Comparison Between Two Volumes of 70% Alcohol in Single Injection Ultrasound-Guided Celiac Plexus Neurolysis: A Randomized Controlled Trial** 293
Mohamed E. Abdel-Ghaffar, MD, Salah A. Ismail, MD, Reda A. Ismail, MD, Mostafa M. Abdelrahman, MD, and Mohamed E. Abuelnaga, MD
- ◆ **Comparison of Intravascular Uptake Using Touhy or Quincke Needle During Lumbar Medial Branch Block** 305
Ji Hee Hong, MD, PhD, Ki Beom Park, MD, and Sung Won Jung, MD, PhD
- ◆ **Comparative Efficacy of Rotator Interval Versus Posterior Capsule Approach Intraarticular Corticosteroid Injections for Primary Frozen Shoulder: A Single-blind, Randomized Trial** 313
Chul-Hyun Cho, MD, Du Hwan Kim, MD, Du-Han Kim, MD, Byung-Chan Choi, MD, Soon Gu Kim, PhD, Dong Gyu Lee, MD, and Jang Hyuk Cho, MD
-  **The Interspace Between Popliteal Artery and Posterior Capsule of the Knee (IPACK) Block in Knee Arthroplasty: A Prospective Randomized Trial** E427
Mohammad A. Abdullah, MD, Mohamed M. Abu Elyazed, MD, and Shaimaa F. Mostafa, MD

ORIGINAL MANUSCRIPTS

-  **Event-Related Potentials Following Cutaneous Electrical Stimulation in Patients With Chronic Whiplash-Associated Disorders** E435
Dorine Lenoir, MSc, Ward Willaert, MSc, Kelly Ickmans, PhD, Jo Nijs, PhD, Barbara Cagnie, PhD, Mira Meeus, PhD, Kristl Vonck, PhD, Jean Delbeke, MD, Robby De Pauw, MD, and Iris Coppieters, PhD
-  **Foraminal Access Strategies in Patients with Lumbar Posterolateral Fusions in Transforaminal Endoscopic Spine Surgery: Case Series and Technical Note** E449
Albert E. Telfeian, MD, PhD, Ankush Bajaj, BS, Rahul Sastry, MD, Rohaid Ali, MD, Adetokunbo Oyelese, MD, PhD, Jared Fridley, MD, Joaquin Q. Camara-Quintana, MD, Tianyi Niu, MD, Kai-uwe Lewandrowski, MD, and Ziya L. Gokaslan, MD





May/June 2022, Volume 24, Number 3

	Association Between Abdominal Obesity and Subsequent Vertebral Fracture Risk Hao-Wei Xu, MD, Hao Chen, MD, Shu-Bao Zhang, MD, Yu-Yang Yi, MD, Xin-Yue Fang, MD, Tao Hu, MD, PhD, Xiao-Yong Ge, MD, and Shan-Jin Wang, MD, PhD	E457
	Transfixation of the Sacroiliac Joint: Biomechanical Stability of a Dual-Implant Minimally Invasive Procedure Steven M. Falowski, MD, and Antonio Valdevit, PhD	E469
	Support Vector Machine versus Multiple Logistic Regression for Prediction of Postherpetic Neuralgia in Outpatients with Herpes Zoster Jie Zhang, MM, Qiao Ding, MM, Xiu-Liang Li, MD, Yi-Wei Hao, MD, and Ying Yang, MD	E481
IN ERRATA		323



July 2022, Volume 25, Number 4

	Ultrasound-guided Genicular Nerve Blockade With Pharmacological Agents for Chronic Knee Osteoarthritis: A Systematic Review	E489
	Yeow Leng Tan, MBBS, MRCP, Edmund Jin Rui Neo, MBBS, MMed, and Tze Chao Wee, MBBS	
	Superior and Middle Cluneal Nerve Entrapment: A Cause of Low Back and Radicular Pain	E503
	Helen W. Karl, MD, Standiford Helm, MD, and Andrea M. Trescot, MD	
	Efficacy, Safety, and Predictors of Response to Pulsed Radiofrequency Therapy for Acute Zoster-Related Trigeminal Neuralgia Patients: A Multicenter Retrospective Study	E523
	Yitong Jia, MD, Ying Shen, MD, Lan Meng, MD, Tao Wang, MD, and Fang Luo, MD	
	The Role of Neuromodulation in Chronic Pelvic Pain: A Review Article	E531
	Chandni B. Patel, DO, Ankur A. Patel, DO, and Sudhir Diwan, MD	
	The Therapeutic Efficacy of Pulsed Radiofrequency Alone Versus a Dexamethasone and Pulsed Radiofrequency Combination in Patients With Trigeminal Postherpetic Neuralgia: A Double-blind, Randomized Controlled Trial	E543
	Min Li, PhD, Han Hu, PhD, Sheng-Xiong Tong, PhD, Shao-Jun Li, PhD, Jia-Yu Tian, PhD, Shu-Li Zhang, PhD, and Dan Feng, PhD	
	Basivertebral Nerve Ablation for the Treatment of Chronic Low Back Pain: A Scoping Review of the Literature	E551
	William Schnapp, MD, Kenneth Martiatu, CRA, and Gaëtan J.-R. Delcroix, PhD	
	Comparison of Changes in the Optic Nerve Sheath Diameter Following Thoracic Epidural Normal Saline Injection in Laparoscopic Surgery	E563
	Ji Seob Kim, MD, Ji Hee Hong, MD, PhD, and Ji Hoon Park, MD, PhD	
	Ultrasound-guided Erector Spinae Muscle Block Versus Ultrasound-guided Caudal Block in Pediatric Patients Undergoing Lower Abdominal Surgeries	E571
	Amr Nady Abdelrazik, MD, Ibrahim Talaat Ibrahim, MD, Arwa Essam Farghaly, MBBCh, and Shadwa Rabea Mohamed, MD	
	Local Anesthetic and Steroid Injection to Relieve the Distal Lumbosacral Pain in Osteoporotic Vertebral Compression Fractures of Patients Treated with Kyphoplasty	E581
	Fanguo Lin, MD, Yuye Zhang, MD, Tao Wu, Yanping Niu, MD, Peng Su, MD, Jun Hua, MD, and Yongming Sun, PhD	
	Postoperative Pain in Adolescent Idiopathic Scoliosis Surgery: A Randomized Controlled Trial	E589
	Nur Canbolat, MD, Irem Basaran, MD, Demet Altun, MD, Turgut Akgul, MD, and Mehmet I. Buget, MD	
	Concordance of Patient Expectations Regarding Guideline Recommendations for Management of Psychosocial Factors in Low Back Pain: A Cross-sectional Study	E597
	Simone Kiel, PhD, Elizabeth Sierocinski, MD, Christina Raus, BSc, Peggy Knauthe, PhD, and Jean-François Chenot, MD, PhD	
	Ultrasound-Guided Oblique Sagittal Anterior Quadratus Lumborum Block in Total Hip Arthroplasty: A Randomized Controlled Trial	E609
	Nana Wang, Binhao Ruan, Mingcang Wang, Lingyang Chen, Tingting Ying, Weiwei Ye, and Honglei Li	
	Sacral Nerve Stimulation in Patients With Refractory Pudendal Neuralgia	E619
	Kai-kai Guo, MS, Long Wang, MD, Fang Liu, MS, Jie-jie Niu, MS, Chao Wang, MS, Shao-hua You, MD, Ze-guo Feng, MD, and Gui-jun Lu, MS	
	Electroacupuncture Alleviates Thalamic Pain in Rats by Suppressing ADCY1 Protein Upregulation	E629
	Bao-Feng Ma, MD, John P. Williams, MD, Jian-Feng Zhang, MD, Ruo-Guo Wang, MD, Jian Guo, MD, and Jian-Xiong An, MD, PhD	
	Capsaicin 8% for Peripheral Neuropathic Pain Treatment: A Retrospective Cohort Study	E641
	Inês Ferreira Vieira, MD, Alfredo Mendes de Castro, MD, Maria do Céu Loureiro, MD, Joana Pinto, MD, Cristina Cardoso, APRN, and José Pedro Assunção, MD	
	Awake, Transforaminal Endoscopic Lumbar Decompression Surgery to Treat L5-S1 Adjacent Segment Disease: A Case Series	E649
	Albert E. Telfeian, MD, PhD, Rahul Sastry, MD, Rohaid Ali, MD, Adetokunbo Oyelese, MD, PhD, Jared Fridley, MD, Joaquin Q. Camara-Quintana, MD, Tianyi Niu, MD, Kai-uwe Lewandrowski, MD, and Ziya L. Gokaslan, MD	

July 2022, Volume 24, Number 4

-  **Ultrasonographic Imaging and Guided Intervention for the Superior Cluneal Nerve: A Narrative Pictorial Review** E657
Wei-Ting Wu, MD, Kamal Mezian, MD, PhD, Ondřej Naňka, MD, PhD, Ke-Vin Chang, MD, PhD, and Levent Özçakar, MD
-  **Factors Associated With Prescription Opioid Abuse and Dependence Among Those Reporting Prescription Opioid Misuse: A Retrospective Cross-Sectional Study** E669
A. Taylor Thomas, MPH, Kara G. Fields, MS, Alan D. Kaye MD, PhD, and Richard D. Urman, MD
-  **Validity and Reliability of the Japanese Version of the Örebro Musculoskeletal Pain Screening Questionnaire-Short Form for Chronic Low Back Pain** E681
Takahiko Yoshimoto, PhD, Keiko Yamada, MD, PhD, Tomoko Fujii, MD, PhD, Kayo Kawamata, PT, Satoshi Kasahara, MD, PhD, Hiroyuki Oka, MD, PhD, and Ko Matsudaira, MD, PhD
-  **Efficacy of Percutaneous Radiofrequency Sympathectomy Versus Percutaneous Ethanol Sympatholysis in the Treatment of Primary Hyperhidrosis** E689
Qiuli He, MS, Jianjun Zhu, MS, Ge Luo, MS, Lei Liu, MS, Jiachun Tao, MS, Huadong Ni, MD, Ming Yao, MD, PhD, and Keyue Xie, MS

LETTERS TO THE EDITOR

-  **Comments on “Trends in and Characteristics of Buprenorphine Misuse Among Adults in the U.S.”** E697
Laxmaiah Manchikanti, MD and Joshua A. Hirsch, MD
-  **Comment on “Intra-articular Platelet-Rich Plasma vs Placebo Injection on Pain and Medial Tibial Cartilage Volume in Patients with Knee Osteoarthritis: The Restore Randomized Clinical Trial”** E698
Laxmaiah Manchikanti, MD, Sairam Atluri, MD, and Joshua A. Hirsch, MD

2022 TOP POSTERS

E699

August 2022, Volume 25, Number 5

REVIEWS

- ◆ **Efficacy of Botulinum Toxin, Local Anesthetics, and Corticosteroids in Patients With Piriformis Syndrome: A Systematic Review and Meta-analysis** 325
Faisal M. Hilal, MD, Ahmed Bashawyah, MD, Abdallah El-Sayed Allam, MD, King Hei Stanley Lam, MD, Ahmed Amine El Oumri, MD, Felice Galluccio, MD, Abdullah AlKharabsheh, MD, Alan David Kaye, MD, PhD, Ammar Salti, MD, and Giustino Varrassi, MD, PhD
- ◆ **Comparison of Analgesic Effects of Different Regional Blocks in Video-assisted Thoracic and Breast Surgeries: A Network Meta-analysis and Systematic Review** 339
Ge Luo, MD, Jiachun Tao, MD, Jianjun Zhu, MD, Keyue Xie, MD, and Chunjue Ni, MD
- ◆ **Review of Interventional Treatments for Cluneal Neuropathy** 355
Benjamin Gill, DO, David S. Cheng, MD, Patrick Buchanan, MD, and David W. Lee, MD


RANDOMIZED TRIALS

- ◆ **The Effect of Erector Spinae Plane Block With and Without Addition of Magnesium on Relief of Pain from Post-herpetic Neuralgia** 365
Sameh Abdelkhalik Ahmed, MD, Amr Ahmed Magdy, MD, Mohammad Ali Abdulllah, MD1, and Amr Arafa Albadry, MD
- ◆ **Analysis of Somatosensory Profiles Using Quantitative Sensory Testing During Tonic and BurstDR Stimulation for the Treatment of Chronic Pain** 373
Matthias Hubert Morgalla, MD, PhD, and Lydia Domay, MD

ORIGINAL MANUSCRIPTS

- ◆ **An Observational Study on the Use of a Patient Navigator to Help Improve Outcomes in Patients on Chronic Opioids** 381
Amol Soin, MD, David Barrall, MD, Joe Chen, MD, Anu Patel, MHCDS, Ann Pollack, MHCDS, and Amos Wangombe, MHCDS
- ◆ **Telemedicine Implementation in Pain Medicine: A Survey Evaluation of Pain Medicine Practices in Spring 2020** 387
Brian Brenner, MD, Scott Brancolini, MD, Yashar Eshraghi, MD, Maged Guirguis, MD, Shravani Durbhakula, MD, David Provenzano, MD, Kevin Vorenkamp, MD, Shalini Shah, MD, Michael Darden, PhD, and Lynn Kohan, MD
- ◆ **Prospective Within Subject Comparison of Fluoroscopically Guided Lumbosacral Facet Joint Radiofrequency Ablation Using a Multi-Tined (Trident) Versus Conventional Monopolar Cannula** 391
George Deng, MD, Ashley Smith, PhD, and Robert Burnham, MD
- ◆ **A Cross-Sectional, Multicenter Study Examining the Validation and Adaptation of the Chinese ROWAN Foot Pain Assessment Questionnaire** 401
Zhirong Zheng, MD, PhD, Tian Tian, MD, Guanhua Wang MM, Yuhan Geng MM, Shiqi Cao, MD, PhD, Zhen Zhang MM, and Xuesong Zhang, MD, PhD
- ◆ **Prone Position MRI of the Lumbar Spine in Patients With Low Back Pain and/or Radiculopathy Refractory to Treatment** 409
Martin Avellanal, MD, PhD, Antonio Ferreiro, MD, PhD, Irene Riquelme, MD, André P. Boezaart MD, PhD, Alberto Prats-Galino, MD, PhD, and Miguel A. Reina, MD, PhD
-  **Predictive Factors for Adjacent Vertebral Fractures After Percutaneous Kyphoplasty in Patients With Osteoporotic Vertebral Compression Fracture** E725
Wu Tao, MD, Wang Biao, MD, Chen Xingmei, MD, Qin Hu, MD, Sun Jinpeng, MD, Gu Yue, MD, and Liu Jun, MD
-  **Effect of Opioid Use on Results of Interventional Back Pain Management on Patients With Suspected Face-mediated Chronic Back Pain** E733
Hannu Heikkilä, MD, PhD and Aet Ristmägi, MD
-  **Disability Pension Did Not Reduce Opioid Use Among Patients With Failed Back Surgery Syndrome Who Were Trialed and Implanted for Spinal Cord Stimulation** E739
Hanna Kajjankoski, MD, Mette Nissen, MD, PhD,, Janne Pesonen, MD, Tiina-Mari Ikäheimo RN, Mikael von und zu Fraunberg, MD, PhD, Olavi Airaksinen, MD, PhD, and Jukka Huttunen, MD, PhD
-  **Correlation Between Electromyography and Severity and Prognosis of Upper Limb Herpes Zoster** E749
Jiayi Tang, MD, Ge Luo, MD, Jiachun Tao, MD, Jianjun Zhu, MD, Qiuli He, MD, Huadong Ni, PhD, Keyue Xie, PhD, Longsheng Xu, PhD, and Ming Yao, PhD

August 2022, Volume 25, Number 5

-  **Comparison of the Effects of Lumbar Spine Flexion on the Acoustic Windows Between Young and Elderly Patients** E759
Hyo-Jin Byon, MD, PhD, Jeong-Uk Han, MD, PhD, Jong-Kwon Jung, MD, Jae-Woung Uhm, MD, Junhyung Lee, MD, and Hyunzu Kim, MD, PhD
-  **Clinical Observation of CT-Guided Intervertebral Foramen Puncture and Radiofrequency Thermocoagulation for the Treatment of Refractory PHN in the Superior Thoracic Segment** E767
Xindan Du, MD, Wensheng Zhao, MD, Lulu Xu, MD, Tieshan Zhang, MD, Langping Li, PhD, and Bing Huang
-  **Computed Tomography-Guided Endoscopic Surgery in Lumbar Disc Herniation With High-grade Migration: A Retrospective, Comparative Study** E777
Erh-Ti Lin, MD, Pang-Hsuan Hsiao, MD, Chia-Yu Lin, MD, Chien-Chun Chang, MD, Yuan-Shun Lo, MD, Chien-Ying Lai, MD, Ling-Yi Li, MD, Michael Jian-Wen Chen, MD, Yen-Jen Chen, MD, PhD, and Hsien-Te Chen, MD, PhD

September/October 2022, Volume 25, Number 6



HEALTH SERVICES RESEARCH

- ◆ Risk of Suicide in Patients With Major Depressive Disorder and Comorbid Chronic Pain Disorder: An Insight From National Inpatient Sample Data 419
Taranjeet Jolly, MD, Ramu Vadukapuram, MD, Chintan Trivedi, MPH, Zeeshan Mansuri, MD, Mahwish Adnan, MD, Steven P. Cohen, MD, and To-Nhu Vu, MD
- ◆ Cross-Sectional Study Evaluating Clinical & Psychological Impact of Limited Access to Healthcare in Chronic Pain Patients During the COVID-19 Pandemic 427
Moez Mithani, MD, Jeremy Benhamroun-Zbili, MD, Andrew Bloomfield, MD, Kishan Sitapara, MD, Arlette Paul, NP, Singh Nair, PhD, Shagun Mohan, MD, Amaresh Vydyanathan, MD, Safwan Zar, MD, and Naum Shaparin, MD



REVIEWS

- ◆ The Predictive Value of Fear Avoidance Beliefs for Outcomes Following Surgery for Lumbar Degenerative Disease: A Systematic Review and Best Evidence Synthesis 441
Van Bogaert Wouter, MSc, Tegner Heidi, MSc, Coppieters Iris, PhD, Huysmans Eva, PhD, Nijs Jo, PhD, Moens Maarten, MD, PhD, Goudman Lisa, PhD, Buyl Ronald, PhD, and Lundberg Mari, PhD
- ◆ The Effectiveness of Intraarticular Cervical Facet Steroid Injections in the Treatment of Cervicogenic Headache: Systematic Review and Meta-analysis 459
Michael Appeadu, MD, Natalia Miranda-Cantellops, MD, Brittany Mays, MD, Marisa Mason-Carino, BS, John Reynolds, MLIS, Thilani Samarakoon, PhD, Teshamae Monteith, MD, and Chane Price, MD
- ◆ A Scoping Review of Chronic Low Back Pain Classification Schemes Based on Patient-Reported Outcomes 471
Patricia M. Herman, ND, PhD, Ian D. Coulter, PhD, Ron D. Hays, PhD, Anthony Rodriguez, PhD, and Maria O. Edelen, PhD

RANDOMIZED TRIALS

- ◆ Comparison of Thoracic Erector Spinae Plane Block With Thoracic Paravertebral Block for Pain Management in Patients With Unilateral Multiple Fractured Ribs 483
Abdelreheem Elawamy, MD, Mohamed R. Morsy, MD, and Mohamed A. Y. Ahmed, MD
- ◆ Effect of Continuous Infusion of Intravenous Nefopam on Postoperative Opioid Consumption After Video-assisted Thoracic Surgery: A Double-blind Randomized Controlled Trial 491
Susie Yoon, MD, PhD, Hyo Bin Lee, MD, Kwon Joong Na, MD, Samina Park, MD, Jaehyon Bahk, MD, PhD, and Ho-Jin Lee, MD, PhD
-  Comparison Between Corticosteroid Injection Into Coracohumeral Ligament and Inferior Glenohumeral Capsule and Corticosteroid Injection Into Posterior Glenohumeral Recess in Adhesive Capsulitis: A Prospective Randomized Trial E787
Sang Hoon Lee, MD, Hyun Hee Choi, and Min Cheol Chang, MD
-  Ultrasound-guided Retrolaminar Block Versus Thoracic Epidural Analgesia for Pain Control Following Laparoscopic Cholecystectomy E795
Alshaimaa Abdel Fattah Kamel, MD, Khadeja M. Elhossieny, MD, Ahmed S. Hegab, MD, and Dina Abdelhameed Elsadek Salem, MD

ORIGINAL MANUSCRIPTS

- ◆ Aspirin Cessation Before Interventional Procedures: Not Blindly Following Guidelines but Making Test-based Decisions 501
Kyeong Hwan Seo, MD, Francis Sahngun Nahm, MD, PhD, Woong Ki Han, MD, Ho Young Gil, MD, Jung Eun Kim, MD, PhD, Eun Joo Choi, MD, PhD, and Pyung Bok Lee, MD, PhD
- ◆ Impact of Needle Size on the Onset and the Progression of Disc Degeneration in Rats 509
Najah Elmounedi, PhD, Walid Bahloul, MD, Melek Turki, MD, Raja Amri, PhD, Mourad Aoui, MD, Walid Elbaya, MD, and Hassib Keskes, MD
-  Comparison of Unilateral and Bilateral Percutaneous Kyphoplasty for Bone Cement Distribution and Clinical Efficacy: An Analysis Using Three-Dimensional Computed Tomography Images E805
Yuting Zhang, MS, Xiujin Chen, MS, Jiachen Ji, BS, Zhengwei Xu, MD, Honghui Sun, MD, Liang Dong, MD, and Dingjun Hao, MD
-  Risk Factors and a Nomogram for Prediction of Refractory Pudendal Neuralgia: A Retrospective Multivariate Analysis Study E815
Xiao-chen Wang, MS, Long Wang, MD, PhD, Yang Li, MS, Gui-jun Lu, BS, Guo-li Zhao, BS, Ze-guo Feng, MD, PhD

September/October 2022, Volume 25, Number 6

- e** **The Effect of Central Sensitization on Interlaminar Epidural Steroid Injection Treatment Outcomes in Patients with Cervical Disc Herniation: An Observational Study** E823
Rekib Sacaklıdır, MD, Canan Sanal-Toprak, MD, Feyza Nur Yucel, MD, Osman Hakan Gunduz, MD, and Savas Sencan, MD
- e** **Modification of Alpha Brain Oscillatory Activity in Fibromyalgia After Very Low Intensity Transcranial Magnetic Stimulation** E831
José María Gómez-Arguelles, MD, Isabel López, BME, Inmaculada Concepción Rodríguez-Rojo, BME, Verónica Romero, BME, Cristina Sabater, BME, Mario Corral, BME, Ricardo Bruña, PhD, and Ceferino Maestú, PhD
- e** **Effectiveness of Epidural Balloon Neuroplasty in Patients With Chronic Spinal Stenosis Accompanied by Redundant Nerve Roots: A Longitudinal Cohort Study** E841
Ji-Hoon Sim, MD, Ki-Choon Sim, MD, PhD, Youngmu Kim, MD, Doo-Hwan Kim, MD, PhD, Ingon Lee, MD, Jin-Woo Shin, MD, PhD, Myong-Hwan Karm, MD, PhD, and Seong-Soo Choi, MD, PhD
- e** **Impact of Chronic Foot Pain Related Quality of Life: A Retrospective Case-Control Study** E851
Luis López-López, DP, Emmanuel Navarro-Flores, PhD, Marta Elena Losa-Iglesias, PhD, Israel Casado-Hernández, PhD, Ricardo Becerro-de-Bengoa-Vallejo, RN, Carlos Romero-Morales, PhD, Daniel López-López, PhD, and Carmen de Labra, PhD
- e** **Variations in Epidural Steroid Injection Practice Patterns by Pain Medicine Physicians in the United States** E857
Nishan Bingham, MD, Raymon Dhall, MD, Michael Montuori, MD, Kristoffer Padjen, MD, PhD, Christopher Gharibo, MD, and Lisa Doan, MD
- e** **Treatment Efficacy and Technical Advantages of Temporary Spinal Nerve Root Stimulation Compared to Traditional Spinal Cord Stimulation for Postherpetic Neuralgia** E863
Mingjie Huang, MD, QiLiang Chen, MD, PhD, Songbin Wu, MD, JiabinHuang, MD, Wuping Sun, PhD, Shaomin Yang, MD, Xiang Qian, MD, PhD, and Lizu Xiao, MD

LETTERS TO THE EDITOR

- e** **Comments on “Pericranial Total Tenderness Score in Patients with Tension-type Headache and Migraine: A Systematic Review and Meta-analysis”** E875
Xinghao Zhang, MD, Wan Zhang, MS, Mengjuan Deng, MD, and Pengfei Wu, MD
- e** **In Response to Comments on “Pericranial Total Tenderness Score in Patients with Tension-type Headache and Migraine: A Systematic Review and Meta-analysis”** E877
Marc Duineveld, MSc, Jolanda Maaskant, PhD, Willem De Hertogh, PhD, and Wendy Scholten-Peeters, PhD
- e** **Comments on “Comparison Between Two Volumes of 70% Alcohol in Single Injection Ultrasound-Guided Celiac Plexus Neurolysis”** E878
Hongyu Zhu, and Ling Ye
- e** **From Magic to Strategic & Logic in Musculoskeletal Ultrasonography: HocUS, PocUS & FocUS** E879
Orhan Güvener, Vincenzo Ricci, and Levent Özçaka
- e** **Comments on “Varied Low Back Pain Induced by Different Spinal Tissues in Percutaneous Endoscopic Lumbar Discectomy: A Retrospective Study”** E880
Qingquan Kong
- e** **Comment on “Safety and Efficacy of Platelet Rich Plasma for Treatment of Lumbar Discogenic Pain: A Prospective, Multicenter, Randomized, Double-blind Study”** E881
Liyu Ran, Xi Yu, and Shishu Huang
- e** **Assessing Perioperative Benefits of Regional Block in Patients Undergoing Total Hip Arthroplasty** E882
Zhong Feng, Fu-Shan Xue, and Cheng-Wen Li
- e** **Comments on “Sacral Nerve Stimulation in Patients With Refractory Pudendal Neuralgia”** E884
Simone Vigneri, MD, PhD, Marco La Grua, MD, Gianfranco Sindaco, MD, and Matteo Zanella, MD
- e** **Telemedicine for Managing Cancer Pain. A Great Opportunity to be Exploited for Clinical and Research Purposes** E886
Arturo Cuomo, MD, Marco Cascella, MD, Alessandro Vittori, MD, Marco Baciarello, MD, Marco Badino, MD, and Elena Bignam, MD

IN ERRATA






519

October 2022, Volume 25, Number 7

REVIEWS

	Comparative Systematic Review and Meta-Analysis of Cochrane Review of Epidural Injections for Lumbar Radiculopathy or Sciatica Laxmaiah Manchikanti, MD, Emilija Knezevic, Richard E. Latchaw, MD, Nebojsa Nick Knezevic, MD, PhD, Salahadin Abdi, MD, PhD, Mahendra R. Sanapati, MD, Peter S. Staats, MD, Christopher G. Gharibo, MD, Thomas T. Simopoulos, MD, Shalini Shah, MD, Alaa Abd-Elsayed, MD, Annu Navani, MD, Alan D. Kaye, MD, PhD, Sheri L. Albers, DO, and Joshua A. Hirsch, MD	E889
	Comparison of Various Regional Analgesia Methods for Postoperative Analgesic Effects in Video-assisted Thoracoscopic Surgery: A Systematic Review and Network Meta-analysis Jie Zeng, MD, Zhi-hang Tang, MD, Jing-qiu Liang, MD, Fuming Wang, PhD, Wu-hua Ma, PhD, Cong Yu, PhD, Haolan Xiong, PhD, and Qi Chen, MD	E917
	Efficacy of Scrambler Therapy for Management of Chronic Pain: A Meta-Analysis of Randomized Controlled Trials Yehun Jin, MD, Daehyun Kim, MD, PhD, Jangho Hur, MD, PhD, and Seung-Kwon Myung, MD, PhD	E931
	Current Understanding of Phantom Pain and its Treatment Clayton J. Culp, BS and Salahadin Abdi, MD, PhD	E942

RANDOMIZED TRIALS

	Nurse-Supported Web-Based Cognitive Behavioral Therapy for Chronic Musculoskeletal Pain: A Randomized Controlled Trial Rami Diab, MD, Rebecca Bomar, MD, James Slaven, MS, Sebastian Kaplan, PhD, and Dennis Ang, MD	E959
	Comparison of Intravascular Uptake and Technical Ease Between Anteroposterior and Oblique Views During Lumbar Medial Branch Block Ji Hee Hong, MD, PhD, Ji Hoon Park, MD, PhD, Seung Hoon Shin, MD, and Jae Yoon Lee, MD	E969
	Ultrasound-Guided Erector Spinae Block Versus Ultrasound-Guided Thoracic Paravertebral Block for Pain Relief in Patients With Acute Thoracic Herpes Zoster: A Randomized Controlled Trial Esraa H. Abdelwahab, MSc, Abeer A. Hodeib, MD, Hesham M. Marof, MD, Nadia H. Fattooh, MD, and Mohamed E. Afandy, MD	E977
	Pediatric Postoperative Pain Control With Quadratus Lumborum Block and Dexamethasone in Two Routes With Bupivacaine: A Prospective Randomized Controlled Clinical Trial Sherif Kamal Arafa, MD, Amir Abouzky Elsayed, MD, Ayman M. Hagra, MD, and Ahmed Abdelaziz A. Shama, MD	E987
	The Effect of Ultrasound-guided Bilateral Erector Spinae Plane Block With and Without Dexmedetomidine on Intraoperative and Postoperative Pain in Laparoscopic Cholecystectomies: A Randomized, Controlled, Double-blind, Prospective Trial Freideriki Sifaki, MD, Ioannis Mantzoros, MD, PhD, Eleni Koraki, MD, PhD, Stella Bagtasarian, MD, Panagiotis Christidis, MD, and Kassiani Theodoraki, MD, PhD	E999

ORIGINAL MANUSCRIPTS

	Effects of Hypovitaminosis D on Preoperative Pain Threshold and Perioperative Opioid Use in Colorectal Cancer Surgery: A Cohort Study Jun Xia, MD, Dai Li, PhD, Guanyu Yu, PhD, Bing Xu, PhD, Xianhua Gao, PhD, Han Wang, MD, Yu Ma, PhD, Xiujuan Li, MD, and Yuanchang Xiong, PhD	E1009
	A Cross-sectional Study of the Social Media Presence of ACGME-Accredited Pain Medicine Fellowship Programs: Time to Get Online? Paul Shekane, MD, Ghislaine Echevarria, MD, Gabriel Irizarry, MD, Joshua Dumbroff, MD, Meg A. Rosenblatt, MD, and Alopi Patel, MD	E1021
	Clinical Outcomes of Percutaneous Endoscopic Lumbar Discectomy Assisted With Sequential SNRB in Treating Lumbosacral Contiguous Double-Level Disc Herniation Changgui Shi, MD, PhD, Xin Gu, MD, PhD, Yanyan Zhou, RN, Bin Sun, MD, Junqiang Qi, MD, Yanhai Xi, MD, PhD, Hailong He, MD, PhD, and Guohua Xu, MD, PhD	E1027
	Clinical and Radiological Risk Factors of Early Recurrent Lumbar Disc Herniation at Six Months or Less: A Clinical Retrospective Analysis in One Medical Center Jianwei Guo, MD, Guanghui Li, MD, Xiangli Ji, MD, Xiaoqi Wu, MD, Guoqing Zhang, MD, Chuanli Zhou, MD, and Xuexiao Ma, MD	E1039

October 2022, Volume 25, Number 7

-  **Effect of Repeated High-voltage Long-duration Pulsed Radiofrequency on Herpetic Neuralgia** E1047
Enming Zhang, MD, Yong Fei, MD, Longsheng Xu, PhD, Bing Huang, MD, and Ming Yao, PhD
-  **Analysis of the Hemodynamic Response During Radiofrequency Thermocoagulation in Trigeminal Neuralgia** E1057
Jae Yoon Lee, MD, Ji Hoon Park, MD, PhD, and Ji Hee Hong, MD, PhD
-  **Comparison of Two Puncture Approaches in CT-guided Percutaneous Radiofrequency Ablation at the Stylomastoid Foramen for Treatment of Hemifacial Spasm** E1063
Huidan Lin, MD, Gang Cao, MD, Zhaodong Yang, MD, Dan Wu, MD, Ming Yao, PhD, Guanjun Jin, MD, Xindan Du, MD, Changshun Huang, MD, and Bing Huang, MD
-  **Changes in Temperature Following Radiofrequency Thermal Ablation of the Nucleus Pulposus and Annulus Fibrosus: A Cadaveric Study** E1073
Guang-Xun Lin, MD, PhD, Sagar Sharma, MD, Yanting Liu, MD, Hussam Jabri, MD, and Jin-Sung Kim, MD, PhD
-  **Comparison of Pain Reduction and Changes in Serum Cortisol and Glucose Levels to Different Doses of Lumbar Epidural Dexamethasone: A Prospective Study** E1081
Chan Hong Park, MD, PhD, Yho Han Jang, MD, and Sang Ho Lee, MD, PhD
-  **Efficacy of Nucleoplasty for Radiculopathy Caused by Foraminal Cervical Disc Herniation: Clinical Results of Case Series and Technical Note** E1087
Kyoung Hoon Kim, MD, Dong Hyun Kim, MD, and Pius Kim, MD, PhD
-  **Comparison of the Effect of Balloon Catheter vs Nucleoplasty vs Balloon Catheter and Nucleoplasty in Patients With Lumbar Spinal Stenosis** E1095
Na Eun Kim, MD, Jong Bum Choi, PhD, Hye Rim Kwon, MD, Hee Tae Chung, MD, Eun Soo Jang, MD, Chang Yik Moon, MD, and Byung Gun Kim, PhD
-  **Influence of Handgrip Strength and Psoas Muscle Index on Analgesic Efficacy of Epidural Steroid Injection in Patients With Degenerative Lumbar Spinal Disease** E1105
Shin Hyung Kim, MD, PhD, Sang Jun Park, MD, Kyung Bong Yoon, MD, PhD, Eun-Kyung Jun, MD, Jaehee Cho, MD, and Hee Jung Kim, MD
-  **Non-Invasive Pelvic Floor Rehabilitation in Cancer Population: An Incomplete Cohort** E1115
Carlos J. Roldan, MD, Anumol Thomas, MPH, Nichole Samms, MPH, Lei Feng, MPH, and Billy Huh, MD, PhD
-  **Long-term Outcomes of Pulsed Radiofrequency for Supraorbital Neuralgia: A Retrospective Multicentric Study** E1121
Xiong Xiao, MD, Guoliang Chai, MD, Longjun Liu, MD, Lei Jiang, MD, and Fang Luo, MD
-  **Radiofrequency Treatment of Iliac and Paravertebral Cluneal Nerves for Low Back Pain** E1129
Martin Knight, MD, James Inklebarger, MD, Albert E. Telfeian, MD, PhD, and Kai-Uwe Lewandrowski, MD
-  **Exercise Facilitates the M1-to-M2 Polarization of Microglia by Enhancing Autophagy via the BDNF/AKT/mTOR Pathway in Neuropathic Pain** E1137
Jie Bai, PhD, Bin Geng, PhD, Xingwen Wang, PhD, Shenghong Wang, PhD, Qiong Yi, PhD, Yuchen Tang, PhD, and Yayi Xia, PhD
-  **Pediatric Hip Disease Increases the Risk for Opioid Use in Adulthood: Long-term Burden of Pain and Depression** E1153
Miriam G. Wadström, MD and Yasmin D. Hailer, MD, PhD

IN ERRATA

E1161

November 2022, Volume 25, Number 8

REVIEWS

◆	Parameters of Spinal Cord Stimulation in Complex Regional Pain Syndrome: Systematic Review and Meta-analysis of Randomized Controlled Trials	521
	Elver Ho, BA, Nima Yazdanpanah, DO, Johnson Ho, MD, Benjamin Drukman, BS, Alvin Chang, MD, and Sanjeev Agarwal, MD	
◆	Comparative Effects of Different Epidural Injection Approaches on Lumbosacral Radicular Pain: A Systematic Review and Network Meta-analysis	531
	Zhihe Yun, MMed, Chenglong Wang, MD, Tong Yu, MD, Tianyang Yuan, MD, Xinyu Nie, MD, Tao He, MMed, Rui Liu, MMed, Junyan An, MMed, Le Qi, MMed, Chen Li, MD, Yang Sun, MD, Jun Zhang, MMed, and Qinyi Liu, MD	
◆	Comparison of the Efficacy of Single-Injection Regional Analgesia Techniques for Total Abdominal Hysterectomy: A Systematic Review and Network Meta-Analysis	543
	Meng-Chen Tsai, MD, Geng-Hao Bai, MD, Tsung-Yu Hung, MD, Yi-No Kang, PhD, and Wen-Hsuan Hou, MD, PhD	
	Painful Diabetic Neuropathy - Spinal Cord Stimulation, Peripheral Nerve Stimulation, Transcutaneous Electrical Nerve Stimulation, and Scrambler Therapy: A Narrative Review	E1161
	Eric J. Wang, MD, Lauren E. Berninger DO, Olga Komargodski, MD, and Thomas J. Smith, MD	
	Dorsal Root Ganglion Stimulation for the Management of Phantom Limb Pain: A Scoping Review	E1173
	Nivetha Srinivasan, BS, Benjamin Zhou, BS, and Edward Park, MD	

RANDOMIZED TRIALS

◆	Immunosuppressive Effect of Intrathecal Morphine, Dexmedetomidine, or Both in Combination with Bupivacaine on Patients Undergoing Major Abdominal Cancer Surgery	555
	Shereen Mamdouh Kamal, MD, Sahar Abdel-Baky Mohamed, MD, Khaled Mohamed Fares, MD, Rania Mohamed Abdelemam, MD, Heba Mohammed Elmasry, and Samar Mansour	
◆	Radiofrequency Denervation on Lumbar Facet Joint Pain in the Elderly: A Randomized Controlled Prospective Trial	569
	Yu Si Chen, Botao Liu, MD, Fang Gu, MD, and Lei Sima, MD	
◆	Comparison of Erector Spinae Plane Block at the Level of the Second Thoracic Vertebra With Suprascapular Nerve Block for Postoperative Analgesia in Arthroscopic Shoulder Surgery	577
	Naglaa Fathy Abdelhaleem, MD, Sherien E. Abdelatif, MD, and Sara M. Abdel Naby, MD	
	A Comparison of Anesthetic Quality between Single and Septum-based Double Injection for Ultrasound-Guided Costoclavicular Block: A Randomized Controlled Trial	E1183
	Mi Geum Lee, MD, PhD, Seung Hyun Chung, MD, PhD, Wol Seon Jung, MD, PhD, Dong Chul Lee, MD, PhD, Kyung Seob Yoon, MD, Jae Chul Koh, MD, PhD, and Hyeon Ju Shin, MD, PhD	
	Transforaminal Versus Interlaminar Approach of Full-Endoscopic Lumbar Discectomy Under Local Anesthesia for L5/S1 Disc Herniation: A Randomized Controlled Trial	E1191
	Zhiheng Chen, MD, Xin Wang, MD, Xiaoyan Cui, RN, BN, Guowang Zhang, MD, Jianguang Xu, MD, and Xiaofeng Lian, MD	
	P2X7 Receptor-Induced Bone Cancer Pain by Regulating Microglial Activity via NLRP3/IL-1β Signaling	E1199
	Ping Wu, MD, Xiaoqi Wu, MSc, Guohua Zhou, MSc, Yin Wang, BA, Xiaojun Liu, BA, Run Lv, MSc, YanSong Liu, BA, and Qingping Wen, MD	
	Comparison of Different Treatment Regimens of Extracorporeal Shockwave Therapy in Chronic Low-back Pain: A Randomized Controlled Trial	E1211
	Haolin Sun, MD, Hao Chen, PT, Guanzhang Mu, MD, Haoyong Fu, MD, and Lei Yue, MD	

ARTIFICIAL INTELLIGENCE/MACHINE LEARNING



◆	Deep Learning Algorithm Trained on Lumbar Magnetic Resonance Imaging to Predict Outcomes of Transforaminal Epidural Steroid Injection for Chronic Lumbosacral Radicular Pain	587
	Jeoung Kun Kim, PhD, Min Xing Wang, MS, and Min Cheol Chang, MD	
◆	A Machine Learning Approach to Identify Predictors of Severe COVID-19 Outcome in Patients With Rheumatoid Arthritis	593
	Sara M. Burns, MS, Tiffany S. Woodworth, MPH, Zeynep Icten, PhD, Trenton Honda, PhD, and Justin Manjourides, PhD	

November 2022, Volume 25, Number 8

ORIGINAL MANUSCRIPTS

	Risk Factors Affecting the Outcomes of CT-Guided Radiofrequency Thermocoagulation of Thoracic Sympathetic Nerve in the Treatment of Primary Palm Hyperhidrosis Jiao Kuang, MD, Ge Luo, MD, Jiachun Tao, MD, Miao Xu, MD, Jie Fu, MD, Baoxia Zhao, MD, and Huadong Ni, MD, PhD	E1219
	Correlation Between the Extent of Injectate Spread and Clinical Outcomes in Cervical Interlaminar Epidural Injection Ji Yeong Kim, MD, Sungwon Yang, MD, Donghyun Kim, MD, Youngkyung Park, MD, and Young Hoon Kim, MD, PhD	E1229
	The Involvement of CaV1.2 in Estrogenic Modulation of Morphine Antinociception in Rats Under Uterine Cervix Pain Li-Hong Sun, MD, Qi Xu, PhD, Lin Jin, MD, Li-Dan Jin, MD, Qing Chen, MD, Hui Wu, PhD, and Xin-Zhong Chen, PhD	E1239
	Analysis of Risk Factors and Prediction Model for Recurrence of Hemifacial Spasm After Radiofrequency Ablation Yong Fei, MD, Enming Zhang, MD, Yi Wu, MD, Jianmei Xia, MD, Bing Huang, MD, and Ming Yao, PhD	E1249
	Assessment of Patent Diversity and Equity of Care in a Tertiary Referral Interventional Pain Medicine Clinic Michael Harned, MD, Christopher James, MD, Emily Nagourney, MSPH, Kathryn Wilson, Emily A. Topmiller, and Tukea L. Talbert, DNP	E1257
	Impact of Opioid Dose and Obstructive Sleep Apnea in Chronic Opioid Patients Using STOP-Bang Questionnaire Vladimir Suric, MD, Nicholas Mata, MD, Terence Hillery, MD, Andrea Scarpino, MSN, and Chong Kim, MD	E1263
	Lumbar Sympathetic Ganglion Block for Cancer-Associated Secondary Lower Limb Lymphedema: A Retrospective Study Huaqing Huang, MD, Jie Lin, MD, Zhisen Dai, MD, Meina Zeng, MD, Sang Li, MD and Huizhe Zheng, MD	E1269
	Meckel's Cave Size Measured by Magnetic Resonance Imaging in the Prognosis of Percutaneous Balloon Compression for Trigeminal Neuralgia Xiaochong Fan, MD, Zhongyuan Lu, MD, Huan Ren, MD, Fuxing Xu, MD, Lijun Fu, MD, Chunxiao Bu, MD, Yong Zhang, MD, Qingying Liu, MD, Huilian Bu, MD, and Jingjing Yuan, MD	E1279
	Postoperative Upper-limb Palsy After Posterior Percutaneous Endoscopic Cervical Foraminotomy and Discectomy Weiheng Wang, MD, Liang Tang, MD, Gonghao Zhang, MD, Bing Xiao, MD, Yanhai Xi, MD, Xin Gu, MD, and Xiaojian Ye, MD	E1289
	Use of High-Resolution Ultrasound to Guide Alcohol Neurolysis for Chronic Pain Russell A. Reeves, MD, Cole J. Miller, BS, Dajie Wang, MD, Andrew Ng, MD, Joshua E. Heller, MD, and Levon N. Nazarian, MD	E1297
	Disrupted White Matter Microstructure in Patients With Fibromyalgia Owing Predominantly to Psychological Factors: A Diffusion Tensor Imaging Study Ye Tu, MD, Jihong Wang, MS, Fei Xiong, MD, and Feng Gao, MD	E1305
	Pelvic Floor Myofascial Pain Might Influence Treatment Outcome of Interstitial Cystitis/Bladder Pain Syndrome: A Prospective Study Wan-Ru Yu, MS, Fei-Chi Chuang, MD, Wei-Chuan Chang, MS, and Hann-Chorng Kuo, MD	E1315

LETTERS TO THE EDITOR

	Comments on "Effect of Opioid Use on Results of Interventional Back Pain Management on Patients With Suspected Facet-mediated Chronic Back Pain" Hongyu Zhu, MD, Xiaohong Lei, MD	E1323
	In Response to Comments on "Effect of Opioid Use on Results of Interventional Back Pain Management on Patients With Suspected Facet-mediated Chronic Back Pain" Hannu Heikkila, MD, PhD, and Aet Ristmagi, MD	E1325

2022 INDICES

◆	Index by Contents	603
◆	Index by Author	???
◆	Index by Key Words	???

2022 INDEX BY AUTHOR

A

Abdelatiff, MD, Sherien E. 577
 Abdelemam, MD, Rania Mohamed 555
 Abdel-Ghaffar, MD, Mohamed E. 293
 Abdelhaleem, MD, Naglaa Fathy 577
 Abdelrahman, MD, Mostafa M. 293
 Abdelrazik, MD, Amr Nady E571
 Abd-Elsayed, MD, Alaa 49, 97, 239, 251, E889
 Abdelwahab, MSc, Esraa H. E977
 Abdi, MD, PhD, Salahadin 223, 239, E889, E941
 Abdullah, MD, Mohammad Ali E427, 365
 Abuelnaga, MD, Mohamed E. 293
 Adogwa, MD, Owoicho E37
 Afandy, MD, Mohamed E. E977
 Agarwal, MD, Sanjeev 521
 Aggarwal, MD, Aakanksha E404
 Ahmed, MD, Sameh Abdelhalik 365
 Airaksinen, MD, PhD, Olavi E739
 Akbik, MD, Omar S. E37
 Akgul, MD, Turgut E589
 Albadry, MD, Amr Arafa 365
 Albers, DO, Sheri L. E889
 Aleem, MD, Ilyas 59
 Alemu, PhD, Brook T. E95
 Ali, MD, Rohaid E449, E649
 AlKharabsheh, MD, Abdullah 325
 Allam, MD, Abdallah El-Sayed 325
 Altun, MD, Demet E589
 Alvi, MBBS, Mohammed Ali 265
 Amar, MD, Askar E397, E411
 An, MD, PhD, Jian-Xiong E43, E271, E629
 An, Mmed, Junyan 531
 Ang, MD, Dennis E959
 Aoun, MD, Salah G. E37
 Arafa, MD, Sherif Kamal E987
 Argüello, PhD, Erick E1
 Asik, MD, Ibrahim E412
 Asrar, MPharm, Mir Mahmood E168
 Assuncao, MD, Jose Pedro E641
 Atluri, MD, Sairam 97, 193, 223, E698
 Aubrun, PhD, Frederic E414
 Avellanal, MD, PhD, Martin 409

B

Bae, MD, Hyun 29
 Bagley, MD, Carlos A. E37
 Bagtasarian, MD, Stella E999
 Bai, MD, Geng-Hao 543
 Bai, PhD, Jie E1137
 Bajaj, BS, Ankush E449
 Bansal, MD, Dipika E168
 Barrall, MD, David 381
 Barrows, BA, Hannah R. 29
 Basaran, MD, Irem E589
 Bashawyah, MD, Ahmed 325
 Beall, MD, Douglas P. 223, 239

Benedict, MD, Gregory E113
 Benyamin, MD, Ramsin 29
 Bermeo, PhD, Leonardo E1
 Berninger DO, Lauren E. E1161
 Beydoun, PhD, Hind A. E95
 Bhansali, MD, Anil E168
 Bhati, Sachi 193
 Biao, MD, Wang E725
 Bilim, MD, Serhad 161
 Boachie-Adjei, BS, CPH, Kwadwo 193
 Boddu, MD, Navneet 193
 Boezaart, MD, PhD, Andre P. 409
 Bolash, MD, Robert 67
 Bomar, MD, Rebecca E959
 Boswell, MD, PhD, Mark V. 97, 223
 Brancolini, MD, Scott 125, 387
 Brenner, MD, Brian 387
 Bu, MD, Chunxiao E1279
 Bu, MD, Huilian E1279
 Buchanan, MD, Patrick 355
 Buget, MD, Mehmet I. E589
 Burnham, MD, Robert 391
 Burns, MS, Sara M. 593
 Butt, MD, Bilal B. 59
 Bydon, MD, Mohamad 265
 Byon, MD, PhD, Hyo-Jin E759

C

Cagnie, PhD, Barbara E435
 Cai, MD, Xingwei E399
 Calodney, MD, Aaron 29, 67
 Camara-Quintana, MD, Joaquin Q. E255, E449, E649
 Canbolat, MD, Nur E589
 Candido, MD, Kenneth D. 77, 87
 Cao, MD, Gang E1063
 Cao, MD, PhD, Shiqi 401
 Cardoso, APRN, Cristina E641
 Carvajal, MD, Gabriel E414
 Castillo, PhD, Javier E1
 Celenioglu, MD, Alp Eren 161
 Chai, MD, Guoliang E1121
 Chandrasekhr, MD, Boya E168
 Chang, MD, Alvin 521
 Chang, MD, Chia-Wei 265
 Chang, MD, Ke-Vin E657
 Chang, MD, Min Cheol 587, E141, E203
 Chang, MD, Mingzheng E73
 Chang, MD, PhD, Chien-Chun E777, E299
 Chang, MS, Wei-Chuan E1315
 Chen, BS, Lili 1
 Chen, Lingyang E609
 Chen, MD, Feifei E331
 Chen, MD, Hao E457
 Chen, MD, Huajiang E309
 Chen, MD, Hui-Yi E299
 Chen, MD, Joe 381

Chen, MD, Ling E55
 Chen, MD, Lucy E341
 Chen, MD, Michael Jian-Wen E777
 Chen, MD, PhD, ChanE165, E399
 Chen, MD, PhD, Hsien-Te.....E299, E777
 Chen, MD, PhD, Yen-Jen.....E299, E777
 Chen, MD, Qi E917
 Chen, MD, Qing E1239
 Chen, MD, Wei-Cheng 265
 Chen, MD, Xiaojun E27
 Chen, MD, YaJing E293
 Chen, MD, Ya-Ting E319
 Chen, MD, Yu E309
 Chen, MD, Zhiheng E1191
 Chen, PhD, Tao E27
 Chen, PhD, Xin-Zhong E1239
 Chen, PT, Hao E1211
 Chen, Yu Si 569
 Cheng, MD, David S. 355
 Cheng, MD, Lei..... 145
 Chenot, MD, PhD, Jean-Francois E597
 Cho, MD, Chul-Hyun 313
 Cho, MD, Jaehee E1105
 Cho, MD, Jang Hyuk..... 313
 Choi, MD, Byong-Chan..... 313
 Choi, MD, Gyu-Sik..... E203
 Choi, MS, Hyun Hee E141
 Choi, PhD, Jong Bum E1095
 Chokshi, MD, Krupali..... 209
 Christiansen, MD, Sandy E365
 Christidis, MD, Panagiotis E999
 Chuang, MD, Fei-Chi E1315
 Chung, MD, Hee Tae..... E1095
 Chung, MD, PhD, Seung Hyun E1183
 Clendenen, MD, Steven R 15
 Conermann, MD, Till E113
 Coppieters, PhD, Iris..... E435
 Creamer, DO, Michael..... 67
 Cui, MD, Xingang E331
 Cui, MD, Zhifei E27
 Cui, RN, BN, Xiaoyan E1191
 Culp, BS, Clayton J. E941

D

Dai, MD, Zhisen E1269
 Dale, DO, Rebecca 125
 Darden, PhD, Michael 387
 Dave, BSE, Amisha D..... E245
 de Castro, MD, Alfredo Mendes..... E641
 de Paola, MD, Ilenia E414
 De Pauw, PhD, Robby E435
 Delbeke, MD, Jean..... E435
 Delcroix, PhD, Gaëtan J.-R..... E551
 Deng, MD, George 391
 Deng, MD, Hao..... E341
 Deng, MD, Mengjuan E411
 Diab, MD, Rami E959
 Ding, MM, Qiao..... E481
 Diwan, MD, Sudhir E531
 Domay, MD, Lydia..... 373
 Dou, PhD, Yikai 1

Dregalla, PhD, Ryan 193
 Drukman, BS, Benjamin 521
 D'Silva, MD, Kristin M. E319
 Du, MD, Tao E87
 Du, MD, XindanE767, E1063
 Du, PhD, Bing E411
 Duarte, PhD, Rui E414
 Dumbroff, MD, Joshua..... E1021
 Dupoiron, MD, Denis E414
 Durbhakula, MD, Shravani 125, 387

E

Echevarria, MD, Ghislaine E1021
 El Oumri, MD, Ahmed Amine..... 325
 Eldabe, PhD, Sam..... E414
 Eldrige, MD, Jason S 15
 Elmasry, Heba Mohammed 555
 Elsayed, MD, Amir Abouzky E987
 Elyazed, MD, Mohamed M. Abu E427
 Erden, MD, M. Ilhan E412
 Eshraghi, MD, Yashar 387
 Evans, BA, Natalie Eleanor 29

F

Falowski, MD, Steven M..... E469
 Fan, MD, Xiaochong E1279
 Fang, MD, Chao E133
 Fang, MD, Hongwei E15
 Fang, MD, PhD, Luo..... E409
 Fang, MD, Xin-Yue..... E457
 Fang, MD, Zeyu 145
 Fares, MD, Khaled Mohamed 555
 Farghaly, MBBCh, Arwa Essam E571
 Farrell, MD, Kyle E193
 Fattooh, MD, Nadia H. E977
 Fei, MD, YongE1047, E1249
 Feng, MD, Ze-guo..... E619
 Feng, MPH, Lei E1115
 Feng, PhD, Dan..... E543
 Feng, PhD, Qianjin E27
 Ferreira-Dos-Santos, MD, Guilherme 15
 Ferreira, MD, PhD, Antonio 409
 Fields, MS, Kara G..... E669
 Filatava, BS, Evgenia Jen..... E341
 Fisher, DO, Scott M. 87
 Fisher, MS, Corrie A. E341
 Fitzpatrick, BS, Brody E121
 Fox, MD, Ira 67
 Franc, MD, PhD, Daniel 29
 Fridley, MD, Jared..... E255, E449, E649
 Fu, MD, Tsai-Sheng 265
 Fu, MD, Haoyong..... E1211
 Fu, MD, Jie E1219
 Fu, MD, Lijun E1279
 Fujii, MD, PhD, Tomoko..... E681
 Furnish, MD, Timothy 125

Author Index

G

Gagnier, PhD, Joel.....	59
Gallardo, MD, Jean Carlo.....	209
Galluccio, MD, Felice.....	325
Ganjam, Meghana.....	193
Gao, MD, Feng.....	E1305
Gao, MD, PhD, Rui.....	E165, E399
Gao, MD, Xiao-xiang.....	E309
Gao, MD, Xin-You.....	E43
Gao, PhD, Xianhua.....	E1009
Ge, MD, Peng.....	E133
Ge, MD, Xiao-Yong.....	E457
Geng, MM, Yuhan.....	401
Geng, PhD, Bin.....	E1137
Gharibo, MD, Christopher G.....	223, E889
Gill, DO, Benjamin.....	355
Gokaslan, MD, Ziya L.....	E255, E449, E649
Gonder, MD, Morgan E.....	E185
Grandhi, Nikhil.....	193
Graziano, MD, Mario.....	E414
Gu, MD, Fang.....	569
Gu, MD, PhD, Xin.....	E1027
Gu, MD, Xin.....	E1289
Guan, MD, Jian.....	145
Guirguis, MD, Maged.....	387
Gunduz, MD, Osman Hakan.....	E67, 161
Guner, MD, Derya.....	E412
Guo, MD, Jian.....	E629
Guo, MD, Jianwei.....	E1039
Guo, MS, Kai-kai.....	E619
Guo, PhD, Xiaoyun.....	1

H

Hagedorn, MD, Jonathan M.....	49
Hagras, MD, Ayman M.....	E987
Hailer, MD, PhD, Yasmin D.....	E1153
Han, MD, PhD, Jeong-Uk.....	E759
Hao, MD, Yi-Wei.....	E481
Harned, MD, Michael.....	E1257
Hascalovici, MD, PhD, Jacob R.....	209
He, MD, PhD, Hailong.....	E1027
He, MD, Qiuli.....	E357, E749
He, Mmed, Tao.....	531
He, MS, Qiuli.....	E689
Heikkila, MD, PhD, Hannu.....	E733, E1323
Heller, MD, Joshua E.....	E1297
Helm, MD, Standiford.....	E503
Hernandez, MD, Stephanie.....	E193
Herrera, BS, Jessica.....	193
Hetzl, MS, Scott.....	E121
Hilal, MD, Faisal M.....	325
Hillery, MD, Terence.....	E1263
Hilton, MD, Kellen.....	E121
Hirsch, MD, Joshua A.....	.35, 97, 131, 179, 223, 239, E697, E698, E889
Hirschbeck, MD, Megan.....	171
Ho, BA, Elver.....	521
Ho, MD, Johnson.....	521
Hodeib, MD, Abeer A.....	E977

Honda, PhD, Trenton.....	593
Hong, MD, Jung Hee.....	E127
Hong, MD, PhD, Ji Hee.....	305, E127, E263, E563, E969, E1057
Hou, MD, Ao-Lin.....	E147
Hou, MD, PhD, Wen-Hsuan.....	543
Hou, MD, Wenting.....	E55
Hsiao, MD, Pang-Hsuan.....	E299, E777
Hu, MD, PhD, Tao.....	E457
Hu, MD, Qin.....	E725
Hu, PhD, Han.....	E543
Hua, BS, Sean.....	E365
Hua, MD, Jun.....	E581
Hua, MD, PhD, Xu-Yun.....	E147
Huang, MD, Bing.....	E767, E293, E357, E1047, E1063, E1249
Huang, MD, Changshun.....	E1063
Huang, MD, Huaqing.....	E1269
Huang, MD, Yi.....	283
Huh, MD, PhD, Billy.....	E1115
Hung, MD, Tsung-Yu.....	543
Huo, MD, PhD, Bei-Bei.....	E147
Hur, MD, PhD, Jangho.....	E931
Hurdle, MD, Mark Friedrich B.....	15
Huttunen, MD, PhD, Jukka.....	E739

I

Ibrahim, MD, Ibrahim Talaat.....	E571
Ickmans, PT, PhD, Kelly.....	E435
Icten, PhD, Zeynep.....	593
Ikaheimo, RN, Tiina-Mari.....	E739
Inklebarger, MD, James.....	E1129
Irizarry, MD, Gabriel.....	E1021
Ismail, MD, Reda A.....	293
Ismail, MD, Salah A.....	293

J

Jabri, MD, Hussam.....	E1073
Jacobs, MD, Ryan.....	77, 87
Jain, Divit.....	193
James, MD, Christopher.....	E1257
Jang, MD, Eun Soo.....	E1095
Jang, MD, Yho Han.....	E1081
Jha, MD, Sachin "Sunny".....	131
Ji, MD, Xiangli.....	E1039
Jia, MD, Yitong.....	E523
Jia, MD, Zipu.....	E409
Jian, MD, Fengzeng.....	145
Jiang, MD, Fugui.....	1
Jiang, MD, Lei.....	E1121
Jiang, MD, Shasha.....	E169
Jin, BD, Guanjun.....	E1063
Jin, MD, Li-Dan.....	E1239
Jin, MD, Lin.....	E1239
Jin, MD, Yehun.....	E931
Jinpeng, MD, Sun.....	E725
Jordan, MD, Sheldon.....	29
Jun, MD, Eun-Kyung.....	E1105
Jun, MD, Liu.....	E725
Jung, MD, Jong-Kwon.....	E759
Jung, MD, PhD, Sung Won.....	305

Jung, MD, PhD, Wol Seon E1183
 Jung, MD, Sang Min E157

Kwon, MD, Hye Rim E1095
 Kyriakides, DO, Christopher 209

K

Kagan David..... 59
 Kaijankoski, MD, Hanna E739
 Kamal, MD, Shereen Mamdouh 555
 Kamrava, MD, Evish 29
 Kang, PhD, Yi-No 543
 Kaplan, PhD, Sebastian E959
 Karl, MD, Helen W. E503
 Kasahara, MD, PhD, Satoshi.....E105, E681
 Kawamata, PT, Kayo E681
 Kaye, MD, PhD, Alan D.97, 131, 325, 223, 239, E193, E669, E889
 Khan, MD, Talal W. E185
 Kiel, PhD, Simone E597
 Kim, MD, Chong E1263
 Kim, MD, Dong Hyun E1087, E1229
 Kim, MD, Du Hwan..... 313
 Kim, MD, Du-Han 313
 Kim, MD, Hee Jung E1105
 Kim, MD, Hyung Jun..... E127
 Kim, MD, Ji Seob E563
 Kim, MD, Ji Yeong E157, E1229
 Kim, MD, Jiyoung E349
 Kim, MD, Kyoung Hoon E1087
 Kim, MD, Na Eun E1095
 Kim, MD, PhD , Ha-Jung E349
 Kim, MD, PhD, Daehyun E931
 Kim, MD, PhD, Hyungtae E349
 Kim, MD, PhD, Hyunzu E759
 Kim, MD, PhD, Jin-Sung E1073
 Kim, MD, PhD, Pius E1087
 Kim, MD, PhD, Shin Hyung E1105
 Kim, MD, PhD, Young Hoon E157, E1229
 Kim, MD, Yeon Ju E349
 Kim, PhD, Byung Gun E1095
 Kim, PhD, Jeoung Kun 587
 Kim, PhD, Soon Gu 313
 Kinch, MD, Logan 125
 Kliethermes, PhD, Stephanie E285
 Knauth, PhD, Peggy E597
 Knezevic, Emilija E889
 Knezevic, MD, PhD, Nebojsa Nick.... 77, 87, 97, 179, 239, E889
 Knight, MD, Martin E1129
 Koh, MD, PhD, Jae Chul E1183
 Koh, MD, PhD, Won Uk E349
 Kohan, MD, Lynn 125, 387
 Kohler, MD, Minna J. E319
 Komargodski, MD, Olga E1161
 Koraki, MD, PhD, Eleni E999
 Kosanovic, MD, Radomir..... 35, 179, 223, 239
 Kost, MD, Jonathan E245
 Koyalagunta, MD, Dhanalakshmi..... 239
 Kuang, MD, Jiao E1219
 Kuhn, PhD, Taylor P. 29
 Kumari, MPharm, Sunita E168
 Kuo, MD, Hann-Chorng E1315
 Kwak, PhD, Sang Gyu E203

L

Lai, MD, Chien-Ying E777
 Lam, MD, King Hei Stanley..... 325
 Latchaw, MD, Richard E. E889
 Lee, MD, David W. 355
 Lee, MD, Dong Gyu 313
 Lee, MD, Jae Yoon E969, E1057
 Lee, MD, Junhyung E759
 Lee, MD, Ku Sang E157
 Lee, MD, PhD, Dong Chul E1183
 Lee, MD, PhD, Mi Geum E1183
 Lee, MD, Sang Ho E1081
 Lee, MD, Sang Hoon..... E141
 Lei, MD, Xiaohong E1323
 Lenoir, MSc, Dorine..... E435
 Lewandrowski, MD, Kai-Uwe E255, E449, E649, E1129
 Li, Honglei E609
 Li, MD, Chen 531
 Li, MD, Guanghui E1039
 Li, MD, Jianlong E331
 Li, MD, Junchi E87
 Li, MD, Ling-Yi E777
 Li, MD, Sang E1269
 Li, MD, Shaolin E27
 Li, MD, Xiujian E1009
 Li, MD, Xiu-Liang E481
 Li, MD, Yang E331
 Li, MM, Shuo E385
 Li, PhD, Dai E1009
 Li, PhD, Jianing E385
 Li, PhD, Langping E767
 Li, PhD, Min E543
 Li, PhD, Shao-Jun E543
 Lian, MD, Xiaofeng E1191
 Liang, MD, Jing-qiu E917
 Liang, MD, Shuang E169
 Liao, PhD, Lijun E15
 Lin, MD, Chia-Yu E299, E777
 Lin, MD, Erh-Ti E777
 Lin, MD, Fanguo E581
 Lin, MD, Huidan E1063
 Lin, MD, I-Hao E299
 Lin, MD, Jie E1269
 Lin, MD, PhD, Guang-Xun E1073
 Lin, MD, Tung-Yi 265
 Lipov, MD, Eugene G. 77
 Liu, BA, Xiaojun E1199
 Liu, BA, YanSong E1199
 Liu, MD, Botao 569
 Liu, MD, Hui E43
 Liu, MD, Longjun E1121
 Liu, MD, Qingying E1279
 Liu, MD, Qinyi 531
 Liu, MD, Xiaolan E293
 Liu, MD, Yanting E1073
 Liu, Mmed, Rui 531
 Liu, MS, Fang..... E619

Author Index

Liu, MS, Lei E689
 Liu, PhD, Xinyu E73
 Liu, PhD, Zheng E27
 Lo, MD, Yuan-Shun E777
 Lombardero, MS, Manuel 125
 Loureiro, MD, Maria do Ceu E641
 Lovine, BA, Jessica 29
 Lu, BSc, Andrea E375
 Lu, MD, Guang E87
 Lu, MD, Zhongyuan E1279
 Lu, MS, Gui-jun E619
 Lu, MS, Guo-Fang E271
 Lu, PhD, Hai E27
 Luo, MD, Fang E523, E1121
 Luo, MD, Ge E357, E407, 339, E749, E1219
 Luo, MS, Ge E689
 Lv, Ma, Minzhi E55
 Lv, MD, Xin E397
 Lv, MSc, Run E1199

M

Ma, MD, Bao-Feng E629
 Ma, MD, Ling E407
 Ma, MD, Xuexiao E1039
 Ma, PhD, Wu-hua E917
 Ma, PhD, Yu E1009
 Magdy, MD, Amr Ahmed 365
 Mahdavi, BA, Kennedy 29
 Manchikanti, Maanasa V 239
 Manchikanti, MD, Laxmaiah... 35, 97, 131, 171, 179, 193, 223, 239, E211, E697, E698, E889
 Manjourides, PhD, Justin 593
 Manocha, MD, Vivek 193
 Mansour, Samar 555
 Mantzoros, MD, PhD, Ioannis E999
 Marof, MD, Hesham M. E977
 Martiatu, CRA, Kenneth..... E551
 Martizsus, BS, Briana..... E365
 Mata, MD, Nicholas E1263
 Matsudaira, MD, PhD, Ko E105, E681
 Meeus, PhD, Mira E435
 Meng, MD, Lan E523
 Meng, MD, Qingbin..... E309
 Mezian, MD, PhD, Kamal E657
 Miao, MD, PhD, Changhong..... E55
 Miller, BS, Cole J. E1297
 Min, PhD, Wenjiao 1
 Mogren, BS, Grace..... E341
 Mohamed, MD, Sahar Abdel-Baky 555
 Mohamed, MD, Shadwa Rabea..... E571
 Moon, MD, Chang Yik E1095
 Morgalla, MD, PhD, Matthias Hubert 373
 Morrow, NP, Lisa 209
 Mostafa, MD, Shaimaa F. E427
 Mu, MD, Guanzhang E1211
 Mueller, MD, Kyle E255
 Murphy, PhD, Matthew B. 193
 Myung, MD, PhD, Seung-Kwon E931

N

Naby, MD, Sara M. Abdel 577
 Nagireddi, Meng, Jagadesh N. E211
 Nagourney, MSPH, Emily E1257
 Nanka, MD, PhD, Ondrej..... E657
 Nassr, MD, Ahmad 59
 Navani, MD, Annu E889
 Nazarian, MD, Levon N. E1297
 Neo, MBBS, MMed, Edmund Jin Rui..... E489
 Ng, MD, Andrew E1297
 Ni, MD, Bing E87
 Ni, MD, PhD, Cheng E55
 Ni, MD, Chunjue 339
 Ni, MD, Huadong..... E689
 Ni, PhD, Huadong E357, E74
 Ni, MD, PhD, Huadong E1219
 Nie, MD, Xinyu 531
 Nijs, PhD, Jo E435
 Nissen, MD, Mette E739
 Niu, MS, Jie-jie E619
 Niu, MD, Kun E43
 Niu, MD, Tianyi E255, E449, E649
 Niu, MD, Yanping E581
 Noor, MD, Nazir E193

O

Oka, MD, PhD, Hiroyuki E105, E681
 Olayinka, MD, Olaniyi E95
 Opalacz, PA-C, Arissa E341
 Orr, MPH, Walter N. E185
 Oyelese, MD, PhD, Adetokunbo..... E255, E449, E649
 Ozaktay, MD, Cuneyt..... 67
 Ozcakar, MD, Levent E657
 Ozgencil, MD, Enver E412
 Ozturk, MD, Ekim Can E67

P

Pampati, MSc, Vidyasagar 35, 131, 179, 223, 239
 Pang, PhD, Shumao E27
 Park, MD, Edward E1173
 Park, MD, PhD, Chan Hong E1081
 Park, MD, PhD, Ji Hoon E263, E563, E969, E1057
 Park, MD, PhD, Ki Beom 305, E263
 Park, MD, PhD, Ki Bum E127
 Park, MD, Sang Jun E1105
 Park, MD, Youngkyung E1229
 Patel, DO, Ankur A. E531
 Patel, DO, Chandni B. E531
 Patel, MD, Alopi E1021
 Patel, MD, Rakesh 59
 Patel, MHCDS, Anu 381
 Peker, MD, Elif E412
 Pesonen, MD, Janne E739
 Peterson, MD, Matthew R. 29
 Philips, MD, Nicholas..... E285
 Pinto, MD, Joana E641
 Pirvulescu, MS, Iulia 87
 Poliak-Tunis, MD, Michelle E121
 Pollack, MHCDS, Ann 381

Prats-Galino, MD, PhD, Alberto	409
Provenzano, MD, David	387
Prunskis, MD, John	97
Przkora, MD, PhD, Rene.....	125

Q

Qi, MD, Junqiang	E1027
Qi, Mmed, Le	531
Qian, PhD, Jun.....	E133
Qian, CRNA, Xiao-Yan	E271
Qu, MD, PhD, Wenchun	15

R

Ramsey, MPH, Katrina.....	E365
Rauck, MD, Richard	67
Raus, BSc, Christina	E597
Reeves, MD, Russell A.	E1297
Reina, MD, PhD, Miguel A.	409
Rekatsina, MD, Martina	E402
Remley, MD, Kent	29
Ren, MD, Huan	E1279
Renz, MD, Harald.....	E43
Riquelme, MD, Irene	409
Ristmagi, MD, Aet	E733, E1323
Ro, MD, PhD, Young-Jin.....	E349
Roldan, MD, Carlos J.	E1115
Rosa, MD, Donato	E414
Rosenblatt, MD, Meg A.	E1021
Roth, BS, Sarah.....	E341
Ru, MD, Nan.....	E331
Ruan, Binhao.....	E609
Ruano, MD, PhD, Gualberto.....	E245

S

Sabbagh, DO, Annas.....	E113
Sacaklidir, MD, Re kib	E67
Salti, MD, Ammar	325
Samms, MPH, Nichole	E1115
Sampath, MD, Prakash.....	E255
Sampath, MSc, Shailen G.....	E375
Sanapati, MD, Mahendra R.35, 131, 179, 223, 239, E211, E889	
Sancar, MD, Mert.....	161
Sang, MS, Ling.....	E406
Sastry, MD, Rahul.....	E255, E449, E649
Scarpino, MSN, Andrea	E1263
Scerpella, MD, Tamara	E285
Schnapp, MD, William	E551
Schultz, MD, David M.	49
Schwartz, DO, Ruben H.	E193
Sehgal, MD, Nalini	E285, 251
Seko, DO, Kyle.....	209
Sencan, MD, Savas.....	161, E67
Shah, MD, Shalini	125, 131, 223, 387, E889
Shama, MD, Ahmed Abdelaziz A.	E987
Shaparin, MD, Naum	209
Sharma, MD, Sagar	E1073
Sharma, MS, Ayushi.....	E193

Shekane, MD, Paul	E1021
Shen, MD, PhD, Jun.....	E147
Shen, MD, Xiao-long.....	E309
Shen, MD, Ying	E523
Shen, PhD, Cai-Liang	E133
Shi, MD, PhD, Changgui	E1027
Shi, MD, Wan-Rui	E271
Shin, MD, PhD, Hyeon Ju	E1183
Shin, MD, Seung Hoon	E969
Shu, MD, Wei	E87
Sierocinski, MD, Elizabeth	E597
Sierra-Matamoro, MS, Fabio-Alexander.....	E167
Sifaki, MD, Freideriki	E999
Silva, MD, Victor	E408
Sima, MD, Lei	569
Simopoulos, MD, Thomas T.....	239, E889
Singh, MD, Vanila Mathur.....	97
Singh, MS, Naina	E193
Slaven, MS, James	E959
Smith, MD, Thomas J.	E1161
Smith, PhD, Ashley	391
Soin, MD, Amol.....	97, 131, 171, 179, 223, 239, 381, E211
Song, MD, Li.....	E406
Song, PhD, Pei-wen	E133
Sousa, BS, Karina de	E341
Spektor, MD, Boris.....	125
Sperber, MD, Kevin	209
Springer, PhD, Shauna	77
Srinivasan, BS, Nivetha	E1173
Srivastava, PhD, Vikas	E375
Staats, MD, Peter S.	97, E889
Staikou, MD, PhD, Chryssoula.....	E402
Stayner, MD, PhD, Scott.....	49
Su, MD, Cheng.....	E331
Su, MD, Dan	E15
Su, MD, Peng.....	E581
Su, MD, Zhihai	E27
Suer, MD, Michael	251, E121, E285
Sullivan, Ruth.....	E375
Sun, MD, Bin	E1027
Sun, MD, Haolin	E1211
Sun, MD, Jianmin.....	E331
Sun, MD, Li-Hong	E1239
Sun, MD, Tao	E87
Sun, MD, Yang	531
Sun, MM, Hongwei.....	E385
Sun, PhD, Yongming.....	E581
Suric, MD, Vladimir	E1263
Sutton, MD, Alan J.....	E319
Syed, Zaid.....	193
Syed, Zaynab	193

T

Takahashi, MD, PhD, Naoto.....	E105
Takatsuki, MA, Kozue	E105
Talbert, DNP, Tukea L.	E1257
Tamimi, MD, Mazin Al.....	E37
Tan, MBBS, MRCP, Yeow Leng.....	E489
Tan, MD, Hongyu.....	E385
Tang, MD, Jiayi.....	E357, E749

Author Index

Tang, MD, Liang E1289
 Tang, MD, Zhi-hang E917
 Tang, PhD, Yuchen E1137
 Tao, MD, Jiachun E357, E749, E689, E1219
 Tao, MD, Wu E725
 Telfeian, MD, PhD, Albert E E255, E375, E449, E649, E1129
 Theodoraki, MD, Phd, Kassiani E999
 Theodosopoulou, MD, Polyxeni E402
 Thomas, MPH, A. Taylor E669
 Thomas, MPH, Anumol E1115
 Tian, MD, Tian 401
 Tian, MD, Yonghao E73
 Tian, PhD, Jia-Yu E543
 Tong, PhD, Sheng-Xiong E543
 Topfer, DO, Jacob E193
 Topmiller, Emily A. E1257
 Trescot, MD, Andrea M. 97, E503
 Tsai, MD, Meng-Chen 543
 Tsai, MD, MPH, Sung Huang Laurent 265
 Tsou, MD, PhD, Hsi-Kai E299
 Tu, MD, Ye E1305

U

Uematsu, MD, PhD, Hironobu E405
 Uhm, MD, Jeo-Woung E759
 Urman, MD, Richard D. E669

V

Varrassi, MD, PhD, Giustino E193, 325
 Verdon, DO, Michael 171
 Vieira, MD, Ines Ferreira E641
 von und zu Fraunberg, MD, PhD, Mikael E739
 Vonck, PhD, Kristl E435
 Vorenkamp, MD, Kevin 387
 Vyas, Amanya Ketan E211
 Vydyanathan, MD, Amaresh 209

W

Wadström, MD, Miriam G. E1153
 Wahezi, MD, Sayed Emal 251
 Wahezi, MD, Sayed 209
 Wang, BA, Yin E1199
 Wang, MD, Chenglong 531
 Wang, MD, Dajie E1297
 Wang, MD, Eric J. E1161
 Wang, MD, Guodong E331
 Wang, MD, Han E1009
 Wang, MD, Jianxi E309
 Wang, MD, Lianlei E73
 Wang, MD, Long E619
 Wang, MD, Min E27
 Wang, MD, Mingxia E15
 Wang, MD, PhD, Bing E397
 Wang, MD, PhD, Shan-Jin E457
 Wang, MD, Ruiqun E165, E399
 Wang, MD, Ruo-Guo E629
 Wang, MD, Tao E523
 Wang, MD, Weiheng E1289
 Wang, MD, Xin E1191

Wang, MD, Xinwei E309
 Wang, MD, Xinyu 145
 Wang, MD, Ying-Chih 265
 Wang, MD, Yong E43
 Wang, MD, Zuxing 1
 Wang, Mingcang E609
 Wang, MM, Guanhua 401
 Wang, MS, Chao E619
 Wang, MS, Jihong E1305
 Wang, MS, Min Xing 587
 Wang, Nana E609
 Wang, PhD, Fuming E917
 Wang, PhD, Qian 283
 Wang, PhD, Shenghong E1137
 Wang, PhD, Tian-Long 283
 Wang, PhD, Xiangrui E15
 Wang, PhD, Xiaoyan E245
 Wang, PhD, Xingwen E1137
 Wang, Xiao-Hua 283
 Wangombe, MHCDS, Amos 381
 Wargo, DO, Bradley W. 179, 223
 Wasserman, MD, Ronald 59
 Wee, MBBS, Tze Chao E489
 Wei, MD, Jin E385
 Wei, MD, You-Ping E43
 Wen, MD, Qingping E1199
 Weng, MD, Meilin E55
 Willaert, MSc, Ward E435
 Williams, MD, John P. E43, E271, E629
 Wilson, Kathryn E1257
 Wong, MD, Chak-Bor 265
 Woodworth, MPH, Tiffany S. 593
 Wu, MD, Dan E1063
 Wu, MD, Guo-Ping E43
 Wu, MD, Jian-Ping E43
 Wu, MD, Penfei E411
 Wu, MD, Pengfei E397
 Wu, MD, PhD, Jia-Jia E147
 Wu, MD, Ping E1199
 Wu, MD, Wei-Ting E657
 Wu, MD, Xiaodong E309
 Wu, MD, Xiaoqi E1039
 Wu, MD, Yi E1249
 Wu, MSc, Xiaoqi E1199
 Wu, PhD, Hui E1239
 Wu, Tao E581

X

Xi, MD Yanhai E1289
 Xi, MD, PhD, Yanhai E1027
 Xia, MD, Jianmei E1249
 Xia, MD, Jun E1009
 Xia, PhD, Yayi E1137
 Xiao, BS, Jun 1
 Xiao, MD, Bing E1289
 Xiao, MD, Xiong E1121
 Xie, MD, Keyue 339, E357, E407
 Xie, MS, Keyue E689
 Xie, PhD, Keyue E749
 Xing, MD, Manyu E169
 Xing, MD, Xiang-Xin E147

Xingmei, MD, Chen	E725
Xiong, MD, Fei	E1305
Xiong, MD, Yuanchang	E1009
Xiong, PhD, Haolan	E917
Xu, MD, Fuxing	E1279
Xu, MD, Hao-Wei	E457
Xu, MD, Jianguang	E1191
Xu, MD, Lulu	E767
Xu, MD, Miao	E1219
Xu, MD, PhD, Guohua	E1027
Xu, MD, PhD, Jian-Guang	E147
Xu, MD, ShuangShuang	E293
Xu, MD, Zeng	E309
Xu, PhD, Bing	E1009
Xu, PhD, Longsheng	E749, E1047
Xu, PhD, Peng	E133
Xu, PhD, Qi	E1239

Y

Yabuki, MD, PhD, Shoji	E105
Yamada, MD, PhD, Keiko	E681
Yang, BS, Caixia	E385
Yang, MD, Dou	E87
Yang, MD, Seoyon	E203
Yang, MD, Sungwon	E1229
Yang, MD, Xijun	E55
Yang, MD, Ying	E481
Yang, MD, Yu	E15
Yang, MD, Zhaodong	E1063
Yang, PhD, Hao	E15
Yao, MD, PhD, Ming	E407, E689
Yao, MD, Qingyu	145
Yao, PhD, Ming	E357, E749, E1047, E1063, E1249
Yazdanpanah, DO, Nima	521
Ye, MD, Xiaojian	E1289
Ye, Weiwei	E609
Yerramsetty, MD, Pavan	193
Yi, MD, Yu-Yang	E457
Yi, PhD, Qiong	E1137
Yih, DO, Christopher	209
Ying, Tingting	E609
Yolcu, MD, Yagiz Ugur	265
Yoon, MD, Kyung Seob	E1183
Yoon, MD, PhD, Kyung Bong	E1105
Yoshimoto, PhD, Takahiko	E681
You, MD, Shao-hua	E619
Young, MD, Andrew C	E341
Yu, MD, Cong	E917
Yu, MD, Ling	E385
Yu, MD, Tong	531
Yu, MD, Xiuqin	E15
Yu, MS, Wan-Ru	E1315
Yu, PhD, Guanyu	E1009
Yuan, MD, Chenghua	145
Yuan, MD, Jingjing	E1279
Yuan, MD, Suomao	E73

Yuan, MD, Tianyang	531
Yuan, MD, Wen	E309
Yuan, PhD, Minlan	1
Yue, MD, Gu	E725
Yue, MD, Lei	E1211
Yun, MD, Phillip H	E319
Yun, Mmed, Zhihe	531

Z

Zeng, MD, Jie	E917
Zeng, MD, Meina	E1269
Zhang, MD, Can	145
Zhang, MD, Enming	E1047, E1249
Zhang, MD, Gonghao	E1289
Zhang, MD, Guoqing	E1039
Zhang, MD, Guowang	E1191
Zhang, MD, Jian-Feng	E271, E629
Zhang, MD, Jie	E481
Zhang, MD, PhD, Xuesong	401
Zhang, MD, Shu-Bao	E457
Zhang, MD, Si-Yuan	283
Zhang, MD, Tieshan	E767
Zhang, MD, Wei	E15
Zhang, MD, Xueming	E399
Zhang, MD, Yong	E1279
Zhang, MD, Yuye	E581
Zhang, MM, Zhen	401
Zhang, Mmed, Jun	531
Zhang, PhD, Jinyuan	E15
Zhang, PhD, Ren-Jie	E133
Zhang, PhD, Shu-Li	E543
Zhang, PhD, Yong	E133
Zhao, MD, Baoxia	E1219
Zhao, MD, Qian-Nan	E271
Zhao, MD, Wensheng	E767
Zhao, MD, Yiwei	E73
Zhao, PhD, Guo Guang	283
Zheng, MD, Huizhe	E1269
Zheng, MD, PhD, Mou-Xiong	E147
Zheng, MD, PhD, Zhirong	401
Zhong, MD, PhD, Jing	E55
Zhou, BS, Benjamin	E1173
Zhou, MD, Chuanli	E1039
Zhou, MSc, Guohua	E1199
Zhou, PhD, Bo	1
Zhou, Rn, Yanyan	E1027
Zhu, MD, Hongwei	E87
Zhu, MD, Hongyu	E1323
Zhu, MD, Jianjun	339, E357, E749
Zhu, MD, PhD, Tao	E165
Zhu, MS, Jianjun	E689
Zielinski, BA, Margaret Anne	29
Zou, MD, Luwen	283
Zou, MD, PhD, Wangyuan	E169
Zusmer, MD, Emmanuel	E365

2022 INDEX BY KEY WORDS

1% lidocaine E1191
 3D reconstruction E27
 3D-UNet model..... E27

A

abdominal obesity..... E457
 abdominal surgeries..... E571
 ablation techniques..... E1297
 ablation E551
 abuse E669
 access to interventional techniques 97
 accessory infraorbital foramen E127
 acoustic window..... E759
 acute zoster-related trigeminal neuralgia E523
 ADCY1 E629
 adhesiolysis..... 223
 adjacent segment disease E649
 adjacent vertebral fracture E725
 adjunct E113
 adjuvants..... E999
 adolescent idiopathic scoliosis..... E589
 agency for Healthcare Research and Quality 97
 agreement with guideline recommendations..... E597
 alcohol neurolysis..... 293
 algorithmic approach 171
 alpha 2 agonist E193
 alternative E113
 amputation pain E1173
 analgesia 283, E563, E571, E609, E1239
 anteromedial joint line E319
 Anteroposterior E969
 anxiety 131, 381
 arthroplasty E427
 arthroscopic shoulder surgery 577
 artificial intelligence 171, E211
 autologous 193
 automatic segmentation E27
 automation..... E245
 autonomic nervous system..... E1
 autophagy E1137

B

back pain..... 161
 balloon catheter..... E1095
 basivertebral nerve..... E551
 before-after study in the same patient E619
 bi-needle technique E309
 biomechanics..... E469
 bladder pain E1315
 bone destruction..... E299
 bone marrow mesenchymal stem cells 193
 botulinum toxin 325
 BPI pain intensity..... E959
 brachial plexus avulsion injury E147
 brachial plexus block E1183
 bradycardia..... E1057

brain-derived neurotrophic factor..... E1137
 breast cancer 339
 breast lumpectomy E55
 Brief Pain Inventory pain interference E959
 brilliant blue G E1199
 buck repair 265
 bupivacaine E987
 burnout 131
 burst 521
 burstDR stimulation 373
 buttock pain E503

C

Calmare therapy E931
 cancer pain E414, E1115
 cancer surgery 555
 capsaicin..... E641
 cardiovascular responses E1057
 C-arm E777
 carpal tunnel syndrome..... E141
 case series..... 49
 case series..... E1087
 catastrophizing E285
 caudal epidural injections..... E889
 caudal 161, E571
 CaV1.2 E1239
 celiac plexus neurolysis..... 293
 Centers for Disease Control and Prevention..... 97
 Centers for Medicare and Medicaid Services 97
 cerebral oxygen saturation E263
 cervical epidural steroid injection..... 49
 cervical facet joint nerve or medial branch blocks 35
 cervical facet or zygapophysial facet joint pain 35
 cervical facet..... 251
 cervical foraminal disc herniation E1087
 cervical interlaminar epidural injection..... E1229
 cervical pain..... 49
 cervical radiculopathy..... 49, E1087
 cervical radiofrequency neurotomy..... 35
 cervical sympathetic block 77
 cervical transforaminal epidural injection..... E1229
 cervicgia 251
 cervicogenic headache..... 251
 chemical lumbar sympathectomy E357
 chondrocalcinosis..... E319
 chronic back pain..... 67
 chronic leg pain 67
 chronic low back pain 179, E551, E889
 chronic musculoskeletal pain..... E105, E959
 chronic neck pain..... 35
 chronic opioids E1263
 chronic pain foot 401
 chronic pain.. 15, 49, 209, 587, E105, E141, E185, E211, E285, E641, E931, E1153, E1161, E1173
 chronic pelvic pain E531
 chronic primary pain 1

chronic spinal pain 223
 chronic whiplash-associated disorders E435
 chronic E113
 clinical outcome E1087
 clinical research 15
 clinical E113
 cluneal nerve trigger points E1129
 cluneal neuropathy 355
 cobra venom E629
 cognitive dysfunction E271
 cold hypersensitivity E357
 cold temperature sensory blockade E609
 colorectal cancer E1009
 comorbidities E669
 comorbidity E95
 compensatory hyperhidrosis E689
 Complex Regional Pain Syndrome 521
 complications 49, E1121, E1289
 computed tomography E293
 conflicts of interest 97
 contrast medium E263, E1229
 controlled comparative local anesthetic blocks 35, 179
 convolutional neural network 587
 corona COVID-19 131
 Cortical Reorganization E941
 corticosteroid injection E319
 corticosteroid use 593
 corticosteroid 313
 corticosteroids post-neurotomy neuritis E121
 corticosteroids 325
 cortisol E1081
 costoclavicular approach E1183
 COVID-19 pandemic E185
 COVID-19 209, 387, 593
 COX regression E1219
 crystal arthropathy E319
 CT-guided neuralgia E767

D

deafferentation E941
 debridement E299
 deep learning 587, E27, E211
 degenerative disc disease 145
 degenerative disease E73
 degenerative 29
 dependence E669
 depression 131, 381
 depression E1153
 device safety E67
 dexamethasone E169, E543, E987, E1081
 dexmedetomidine 555, E999
 diabetes E203
 diabetic peripheral neuropathy E203
 diameter E127
 different spinal tissue E331
 differential expressed genes E43
 diffusion tensor imaging E1305
 digital health 209
 direct repair 265
 disability pension E739

disc procedures 223
 disc 29, 193
 distal lumbosacral pain E581
 distress E597
 diversity E1257
 doppler E349
 dorsal epidural space E1229
 dorsal root ganglion stimulation E531, E1173
 dorsal root ganglion E1047, E1229
 dosage E1081
 double injection E1183
 double-level disc herniation E1027
 Drug Enforcement Agency 97
 drugs E1153
 duration of analgesia E571
 Dynamic Loading E469

E

efficacy E523
 elderly 569
 electroacupuncture E271, E629
 electrocoagulation E767
 electro-encephalography E435
 electromyography E365, E749
 electronic health records E245
 endoscopic discectomy E255, E449, E649
 endoscopic instruments E331
 endoscopic spinal surgery E1191
 endoscopic surgery E73, E299
 endoscopic E87
 endplate degeneration E551
 enhanced recovery E55
 entrapment neuropathy E503
 epidemic E95
 epidural fibrosis 161
 epidural injection 145
 epidural injections 223, E67, E889
 epidural steroid injection E1105
 epidural steroid injections 161
 epidural steroid E1081
 epidural 531, E349, E563
 epidurogram E1229
 erector spinae block E977
 erector spinae plane block 543, 577, E999
 erector spinae plane 365
 erector spinae E571
 estrogen E1239
 ethnicity 87
 event-related potentials E435
 exercise E1137
 experimental pain research E1
 externally powered spinal cord stimulation 67
 extracorporeal shockwave therapy E1211

F

facet joint interventions 223
 facet joint pain 171
 facet joint syndrome E15

Key Word Index

facet joint 193, 391, E87
facial bone CT..... E127
facial painE211, E1121
failed back surgery syndrome.....161, E37, E739
fellowship 387
fibromyalgia..... E1305
financial stress 131
FLACC score E571
fluoroscopy.....391, E67, E365
Food and Drug Administration 97
frozen shoulder..... 313

G

gastric cancer..... E385
gender difference 1
gene ontologyE43, E629
gene polymorphisms..... E385
general surgeryE999
genicular nerve block..... E489
geriatric E185
glucose E1081
gray matter difference..... 1
growth factors.....29
gynecological cancer..... E1269

H

handgrip strength E1105
health care..... E95
health impact assessment 401
health policy 387
Hemifacial spasm..... E1063, E1249
herniated disc migration E157
herniated disc 587
herpes zoster E481, E749, E977, E1047
HF-EMC 67
high frequency..... 521
high-grade migrated disc E777
high-intensity zones E157
hip function E43
hippocampus..... E271
histidine metabolism E385
Horner's syndrome..... E55
hospitalization E95
hydrogen phosphate E385
hyperhidrosis disease severity scale..... E1219
Hypovitaminosis D E1009

I

image fusion..... E293
immunity 555
income 87
index of consciousness 2..... 283
infraclavicular block E1183
infraorbital foramen..... E127
injectate..... E1229
injection techniques..... E365

injection..... 59, 313, E657
injections 531, E349
Instagram E1021
interbody fusion..... E299
intercostal nerve block E55
interlaminar endoscopic lumbar discectomy E1191
interlaminar epidural injections E889
interleukin 1 β E1199
interprofessional E1297
interstitial cystitis/bladder pain syndrome E1315
intervention 391
interventional pain management..... 131, 223, E733
interventional pain medicine E1257
interventional pain physician 131
interventional pain 49
interventional techniques 223
Interventional ultrasonography..... E1297
intervertebral disc displacement E349
intervertebral discs E27
intra-articular injection E15
intracranial..... E563
intraoperative pain..... E1191
intraosseous nerves..... E551
intrathecal drug delivery systems..... E414
intrathecal 555
intravascular injection 305, E969
intravenous..... E169
In-Vitro E469

J

Japanese..... E681
Japanese Language version (MPI-J)..... E105

K

kinesiophobia E285
knee osteoarthritis E489
knee replacement E427
Kyoto Encyclopedia of Genes and Genomes..... E629
kyphoplasty E581

L

L'DISQ E157
L5/S1 E1191
laparoscopic cholecystectomy E999
laparoscopy E563
lateral branch radiofrequency neurotomy E341
leg pain E503
Legg-Calvé-Perthes disease E1153
LLL E1269
local anesthesia..... E1191
Local anesthetic and steroid injection E581
local anesthetic..... E889, E987
local anesthetics..... 145, 325
loneliness..... E185
long-term outcome..... E1121
low back pain management..... E597
low back pain ... 193, 355, 409, E87, E331, E503, E597, E657, E687, E1211, E1129

low concentration E1191
 LSGB E1269
 LTCC E1239
 lumbar disc herniation ... 171, E309, E331, E777, E1039, E1191
 lumbar discogenic pain E157
 lumbar facet joint nerve or medial branch blocks and L5 dorsal
 ramus block..... 179
 lumbar facet joint 569
 lumbar facet or zygapophysial facet joint pain..... 179
 lumbar flexion..... E759
 lumbar postlaminectomy syndrome..... 67
 lumbar radiculopathy 171, E889
 lumbar radiofrequency neurotomy 179
 lumbar spinal ultrasonography E759
 lumbar spine 391, 587
 lumbar spondylosis 171
 lumbar sympathetic ganglion block..... E1269
 lumbar 29, 59, 365, E73
 lumbosacral intervertebral foramen..... E27
 lumbosacral region 531
 lymphedema E1269

M

machine learning 171, 593, E147, E211
 Macnab criteria E1087
 magnesium 365
 magnetic resonance image 587
 magnetic resonance imaging 409, E293, E1279
 manual segmentation E27
 marijuana E113
 maternal E95
 Meckel's cave E1279
 medial branch block..... 305, E733, E969
 medial branch 569, E87
 medial cluneal nerves 355
 medial collateral ligament injury..... E319
 medial knee pain E319
 medial meniscal injury..... E319
 medical cannabis E113
 medical education..... E1021
 medication..... E1153
 mental disorder..... 1
 mental health E185
 meta-analysis..... 145, 325, 521, E169, E931
 metabolome E385
 methylene blue E15
 microglial polarization..... E1137
 micro-invasive E1121
 micromotion E469
 middle cluneal nerves..... E503
 minimally invasive pars repair 265
 minimally invasive surgery E309, E375
 minimally invasive E73, E299, E365, E469, E1087
 mini-thoracotomy E589
 Mirror Therapy E941
 misuse E669
 modic changes..... E551
 morphine consumption..... 543
 morphine..... 555, E1239
 Morscher method 265

MRI E27
 multicentric study E1121
 Multidimensional Pain Inventory (MPI)..... E105
 multimodal analgesia..... E999
 multiple logistic regression E481
 multivariate pattern analysis..... E147
 musculoskeletal pain..... E185
 myofascial pain E1315

N

narrative review E414
 national disease management guideline for nonspecific low back
 pain E597
 natural language processing E245
 neck pain..... 251
 needle E141
 neonatal E95
 nerve block 339, 531
 network meta-analysis 339, 543, E917
 neuralgia E641, E767
 neuraxial block..... E759
 neuroimaging E147
 neurolysis..... E489, E1297
 neuroma injection..... E1297
 neuroma E1297
 neuromodulation 67, E531, E1161, E1173
 neuropathic pain. 373, E147, E285, E629, E641, E1161, E1137,
 E1173
 neuropathic E941
 neuropathy E657
 neuroplasty..... E1095
 nitinol E375
 NLRP3 E1199
 nociception index..... 283
 nociceptive stimulation E435
 nonoperative 59
 normal saline E263
 nucleo-annuloplasty..... E1073
 nucleoplasty..... E1095
 numeric rating scale..... E157, E211
 Numeric Rating Score..... E1095

O

O-arm E777
 oblique E969
 obstetric E193
 obstructive sleep apnea..... E1263
 octogenarian E255
 ODI E1081
 opioid consumption 293
 opioid dose E609, E1263
 opioid nonadherence 381
 opioid overdose deaths 97
 opioid prescribing 381
 opioid Risk Tool..... 381
 opioid use disorder E95
 opioid utilization 87
 opioid E1009, E113, E1239

Key Word Index

opioids 387, E385, E414, E669, E733, E739, E1153
optic nerve sheath diameterE263, E563
optimal path E133
Örebro Musculoskeletal Pain Screening Questionnaire E681
osteoarthritis..... E319
osteonecrosis of the femoral head E43
osteoporotic vertebral compression fracture..... E725
osteoporotic vertebral compression fractures.....E133, E581
oswestry Disability IndexE157, E1095
other types of nerve blocks 223
outcome E733
outcomes..... 49
overweight E457
ozone therapy..... E43

P

P2X7 receptor E1199
paddle lead trial E37
pain assessment.....E1, E211
Pain Catastrophizing Scale E959
pain clinics E1297
pain experience..... 87
pain intensity E43
pain location..... E245
pain management fellowship..... E1021
pain management..... E211, E375, E1105
pain medicine fellowship..... 125
pain medicine 15, 387, E185, E1161
pain ontology E245
pain perception..... 87
pain prediction..... E211
pain quality..... E245
pain quantity E245
pain relief E1095
pain score 365, E365
pain scores..... 171
pain symptoms E245
pain threshold..... E1009
pain 29, 313, 391, E113, E203, E427, E1153, E1239
pain-free interval..... E1095
pain-free survival..... E87
painful diabetic neuropathy E1161
painful stimulation E1
painTRAINER program..... E959
paracetamol..... 365
paravertebral block E977
pars fracture 265
Pars interarticularis..... 265
patient expectation E597
Patient Health Questionnaire 8-Item Depression Scale E959
patient navigation 381
Patient-Reported Outcomes Measurement System pain
interference..... E959
patient-reported outcomes 59
pediatric analgesia E987
Pediatric hip disease..... E1153
pedicle screw repair 265
PELD E309
Pelvic floor dysfunction E1115
pelvic floor muscle E1315
pelvic floor rehabilitation..... E1115
pelvic muscles hypertonicity E1315
pelvic pain E1115
percutaneous balloon compression E1279
percutaneous cervical nucleoplasty..... E1087
percutaneous disc decompression E157
percutaneous endoscopic lumbar discectomyE331, E777, E1027,
E1039, E1191
percutaneous ethanol sympathectomy E689
percutaneous insertion..... E375
percutaneous kyphoplasty.....E133, E725
percutaneous vertebral augmentation E457
perinatal E95
peripheral autonomic markers..... E1
peripheral nerve stimulation355, E531, E1161
peripheral neuropathy..... E1297
PET/CT E147
phantom limb pain E941, E1173
phantom limb sensation..... E1173
physical examination 209
physical therapy 593
piriformis syndrome 325, E365
piriformis E365
plasma 29
platelet 29
platelet-rich plasma..... 15
point-of-care ultrasound E319
positional MRI..... 409
post laminectomy syndrome 161, 171
post lumbar surgery syndrome 161
posterior longitudinal ligament E759
posterior percutaneous endoscopic cervical foraminotomy and
discectomy E1289
posterior spinal instrumentation..... E589
posterolateral fusion E449
postherpetic neuralgia 365, E481, E749, E977, E1047
post-herpetic E767
postlaminectomy syndrome 67
post-neurotomy neuritis..... E121
postoperative nausea and vomiting..... 543
postoperative pain E169, E385, E589
postoperative upper limb palsy..... E1289
postoperative.....555, E427, E563, E609
practice management 387
prediction model..... E1249
predictive factors E725
predictive modeling 593
predictor..... E523
preemptive analgesia E999
prefrontal cortex E271
pregabalin 365, E271
preoperative foramen width..... E1289
prescription..... E669
prevention E67, E767
primary hyperhidrosis E689
primary palmar hyperhidrosis E1219
procedure time E969
PROMIS pain intensity E959
prone MRI..... 409
PRoNT E147
propofol 283
prospective study 313

prospective E113
 PRP 29
 pseudosciatica E503
 psoas muscle index E1105
 psychological factors E1305
 psychometric properties E681
 psychometrics E105
 psychosocial treatment E597
 pulsed radiofrequency E523, E543, E1047, E1121

Q

quadratus lumborum block 543, E609, E987
 quality of life 293, E203, E543
 quantitative sensory testing 373
 questionnaire E105
 Quincke needle 305

R

RA 593
 race 87
 racial and ethnic disparities E1257
 radiation dose E969
 radiation exposure E67
 radiation E67
 radicular pain 587
 radiculopathy 161, E255, E449, E649, E657
 radiofrequency ablation 251, 391, E121, E1063, E1129, E1249
 radiofrequency denervation 569
 radiofrequency sympathectomy E689
 radiofrequency thermocoagulation E357, E1057, E1219
 radiofrequency E87, E551, E1073, E1087
 randomized controlled study E609
 randomized controlled trial E169, E1211
 randomized controlled trials E931
 range of motion 313
 rapid tapering 97
 RCT 293
 real-world data 593
 real-world evidence 593
 real-world study E87
 recall bias 59
 rectus sheath block 543
 recurrence E1039, E1249
 refractory pudendal neuralgia E619
 regenerative medicine 15, 193
 regenerative 29
 regional analgesia E917
 regional anesthesia 77, E999
 rehabilitation E1211
 relations E1297
 relaxation techniques E597
 release E141
 reliability E105, E681
 repetitive transcranial magnetic stimulation E203
 retirement E739
 retrospective study E523
 review 265
 RFA 251
 rheumatoid arthritis 593

rhizotomy E87
 risk factor E1039
 risk-factors E1249
 RNA-sequencing analysis E629
 robot-assisted E73
 ROFPAQ 401
 ropivacaine E999
 rotator interval 313

S

sacral nerve stimulation E619
 sacroiliac intraarticular steroid injection E341
 sacroiliac joint arthrodesis 239
 sacroiliac joint fusion 239
 sacroiliac joint injections 223
 Sacroiliac joint nerve blocks 239
 Sacroiliac joint pain E341
 sacroiliac joint radiofrequency neurotomy 239
 sacroiliac joint 193, E469
 sacroiliitis 171
 sarcopenia E1105
 SARS-CoV-2 593
 sciatica 531
 sciatica E889
 scoping review E1173
 Scott repair 265
 scrambler therapy E1161
 Scrambler therapy E931
 screening E681, E1263
 SDM meta-analysis 1
 SearchlightSearchlight E147
 secondary lymphedema E1269
 selective nerve root block E1027
 self-reporting scale E105
 sequential nerve root block E1027
 Sevoflurane 283
 shape memory alloy E375
 short form E681
 shoulder surgery E285
 side effects E571
 single-injection regional analgesia 543
 sleep apnea E1263
 slipped capital femoral epiphysis E1153
 social isolation E185
 social media in medicine E1021
 Social media E1021
 socioeconomic status 87
 sonography E657
 spinal anesthetics E193
 spinal arthrodesis E299
 spinal cord stimulation 373, 521, E37, E375, E531, E739, E1161
 spinal degeneration 193
 spinal instability 409
 spinal pain 171
 spinal stenosis 587, E349, E1105, E1095
 spinal surgery E133
 spine 29, E67, E589, E1073
 spondylodiscitis E299
 spread pattern E1229
 stability E469

Key Word Index

stellate ganglion block 77
steroid injections E365
steroids 145, E889
stop-bang questionnaire E1263
stylomastoid foramen E1063
subsequent vertebral fracture E457
successful outcomes E157
sufentanil E385
superior cervical ganglion block 77
superior cluneal nerves 355, E503
support vector machine E481
Supraorbital neuralgia E1121
suprascapular nerve block 577
surgical robot E133
survival analysis E1121
sympathetic ganglion block E1269
sympathetic E357
syndesmophyte E299
synovitis E319
systematic review 325, 521, E169

T

tele-interview 125
telemedicine 209, 387
temperature E1073
TESSYS E 255, E449, E649
thalamic pain E629
thermal E1073
thermocoagulation E767
thoracic 365
TINAVI E133
TLIF E73
tonic stimulation 373
tonic 521
topical administration E641
total abdominal hysterectomy 543
total hip arthroplasty E609
total knee arthroplasty E169
total knee replacement E169
Touhy needle 305
tract-based spatial statistics E1305
transcriptomics E43
transcutaneous nerve stimulation E1161
transfixation E469
transforaminal endoscopic lumbar discectomy E1191
transforaminal epidural injections E889
transforaminal 161, E255, E449, E649
transverse carpal ligament E141
transversus abdominis plane block 543
treatment response 87
treatment strategy E133
treatment E113

treatment-refractory post-traumatic stress disorder 77
treatment-resistant PTSD 77
trial E113
trigeminal neuralgia E271, E293, E1279
trigeminal postherpetic neuralgia E543
trigeminocardiac reflex E1057
trigger point E1315
Twitter E1021

U

ultrasonography 313, E349, E489
ultrasound E141, E365, E1183
ultrasound guidance E15
ultrasound-guided E571, E987
ultrasound-guided celiac plexus block 293
ultrastructural changes E271
undertreatment E414
unilateral pedicle approach E133
upper abdominal malignancy 293
upper abdominal pain 293
uterine cervix E1239

V

vaginal examination E1315
validation studies 401
validity E105, E681
VAS pain score E609
VAS E1081
VATS E917
ventral epidural space E1229
vertebrae E551
vertebral bone structures E27
video format interview 125
video-assisted thoracic surgery 339
virtual interview 125
visual analog scale E331

W

waist circumference E457
waveform 521
web-based cognitive behavioral therapy E959
white matter microstructure E1305
WHOQoL-BREF E1269
wound infiltration 543

Z

Z-transformation 373

