

## CIRRICULUM VITAE

### **PERSONAL & PROFESSIONAL DETAIL**

<b>Name</b>	BABITA GHAI, MD, DNB, MAMS, FAMS, Commonwealth fellowship in Pain Management, Queens Mary University, London, UK
<b>Current position and Institution</b>	Professor and Consultant in Charge for Pain clinic Department of Anaesthesia and Intensive Care, Postgraduate Institute of Medical Education & Research (PGIMER), Chandigarh, India-160012
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<b>Professional registrations:</b>	<ul style="list-style-type: none"><li>• Medical Council of India, Certificate no. MCI/13538</li><li>• MD (Degree of Doctor of Medicine) Anaesthesiology, 1998</li><li>• DNB (Diplomat of National Board of Examiners), 1998</li><li>• MAMS: Member of National Academy of Medical Sciences 2009</li><li>• FAMS: Fellow of National Academy of Medical Sciences 2017</li><li>• <b>General Medical Council (UK) registration with license to practice (Jan 09, 2012 till Aug 04 2015) and without license to practice (Aug 05, 2015 to March 16, 2016) reference number: 7231866</b></li></ul>

### **NATIONAL EDUCATION QUALIFICATIONS**

Examination passed	Year of passing	University/institution
MBBS	1995	MAMC, Delhi University
MD Anaesthesia	1998	MAMC, Delhi University
DNB Anaesthesia	1998	National Board of Examination

### **INTERNATIONAL EDUCATIONAL QUALIFICATION**

Qualification	Year	University/institution
Commonwealth Academic staff Fellowship in pain management	Jan 2012-July 2012	Barts and London NHS trust, Queens Mary University, London, UK

### **WORK EXPERIENCE**

Post held	From	To	Period	Hospital/University
Professor	01.07.2014	Continuing		PGIMER, Chandigarh
Additional Professor	01.07.2010	30.06.2014	4 years	PGIMER, Chandigarh
Associate Professor	1.07.2007	30.06.2010	3years	PGIMER, Chandigarh
Assistant Professor	16-12-2002	30.06.02007	4yr 6mn 15days	PGIMER, Chandigarh
Senior research associate	21-09-2001	14-12-2002	1yr 2mn 24days	Through Council of Scientific and Industrial Research, at AIIMS, New Delhi
Senior resident	10-08-1998	09-08-2001	3yr	AIIMS, New Delhi
Senior resident	08-06-1998	07-08-1998	2mn	Lok Nayak Hospital, New Delhi
Junior resident (MD Anaesthesia)	02-07-1995	30-04-1998	2yr 9mn 28days	Maulana Azad Medical College, New Delhi
Internship	01-01-1994	31-12-1994	1 yr	Lok Nayak and associated Hospitals, New Delhi

## BRIEF SUMMARY

I am currently working as Professor & Consultant in Charge, Pain clinic, and Course-coordinator of forthcoming pain medicine fellowship, Department of Anaesthesia and Intensive Care at Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India with 24 years of post MD research experience. My career included senior role in clinical practice, research, health policy creation and health strategy. She has completed her Commonwealth Academic staff fellowship in pain management at Barts and London NHS trust, Queens Mary University, London, UK in 2012.

I have keen interest in pain management, pain education, & pain research and policy creation with main focus on chronic low back pain and musculoskeletal pain in low-middle income countries. She has made significant contributions in pain education and management at all levels starting from community level to institute to national and international level.

I have a special research focus on first line high value management for chronic pain management in Low-middle income countries. In this regard she is authored self-Instructional module (back Care Booklet) for patient and care giver education. She has also worked extensively in translating and validating many questionnaires used in chronic pain. Currently she is focusing on the role of Yoga in Chronic Low Back Pain and has got approval of around 5 million INR grant from DST Satyam ministry.

I was involved in the developing in Indian society for study of pain position statement for pain medicine practice during the COVID pandemic.

Dr Ghai is keenly involved in **Pain research** and is recipient of many **international and national grants** including grants from IASP, department of Science and technology (DST), Indian Council of Medical Research (ICMR) and PGIMER, Chandigarh including IASP grant “Developing Countries Project: Initiative for Improving Pain Education”. She has conducted **8 funded projects in chronic pain**. She hold 8 million INR funding to her credit as PI and Co-PI. Dr Ghai has more than 100 internationally indexed publications and authored several national and international book chapters. Her recently published researches are cited in most recent international NICE guidelines of UK and in numerous recent systematic reviews & meta-analysis.

She holds numerous important **international leadership executive positions** such as “special IASP Presidential Task Force on Interdisciplinary Pain Treatment”, “Co-Chair Developing Country Working Group (DCWG)” of IASP, editor of Acute Pain SIG and treasurer of Pain education SIG of IASP, editorial member of Pain Research Forum of IASP and board member of European Executive Program in Neuromodulation (EEPIN) of University of London, international faculty at PG certification Course on Neuromodulation and Pain Management Online Certification at Queens Mary University, London. She also is a consortium member of “Low back pain consortium” of 32 Lower Middle-Income countries.

At **national level**, she is appointed as specialist Board Member of Pain Medicine for DNB/FNB of National Board of Examination. She is involved in **national policy creations** and is a core committee member and expert group member for development of various national guidelines and policy. At **institute level**, Dr Ghai has been instrumental in establishing the pain clinic at her institute in 2009. The clinic offers comprehensive pain management services to the patients. Approximately 600-800 new patients with 1200-1500 visits attend this pain clinic every year.

She is been awarded with several **International and national** including but not limited to prestigious “Commonwealth Academic Staff Fellowship in Pain management” at Queen Mary University in 2012,

“Tedx talk speaker” for “her journey of becoming Pain Physician” in 2015 and “Presidential Award for Academic Excellence” of ISA 2021.

Dr Ghai has two **design patents** to her credits for the innovation in "FACE MASK" for use by interventionist/surgeon for performing procedures in COVID patient and another for the innovation “AMBU BAG SYSTEM"

She has been invited **international guest faculty** to deliver talks at many international conferences including various World Congresses Pain at Japan, Bueno Aries and Boston, European federation on Pain (EFIC) congress at Denmark, two “Association of South East Asian Pain Society (ASEAPS) conference” at Myanmar and Malaysia and New York School of Regional Anesthesia World Anesthesia Congress (NWAC), Dubai. Invited as key note speaker at for forthcoming “17<sup>th</sup> International Forum for Back and Neck Pain Research in Primary Care” organized by center for pain IMPACT Sydney, Australia, Nov 2021.

**At community level Dr Ghai has** conducted multiple **public awareness activities** regarding various pain conditions. She is authored self-instructional (**Back Care booklet**) in **three languages** (English, Hindi and Punjabi) for community distribution. She is **developed and published yoga protocol** for low back pain for community distribution. She is published **three large community studies** funded by ICMR evaluating the prevalence and impact of low back pain in a community based study and the psychosocial morbidity.

## **IMPORTANT INTERNATIONAL EXECUTIVE POSITIONS**

1. 2023 - continuing: Programme faculty for Neuromodulation and Pain Management Online PGCert Course at Queen Mary University London Weblink: <https://www.qmul.ac.uk/postgraduate/taught/coursefinder/courses/neuromodulation-and-pain-management-online-pgcert/>
2. 2023 April - continuing: Co-chair of Developing Country Working Group (DCWG) of the International Association for the Study of Pain (IASP). Weblink: <https://www.iasp-pain.org/group/developing-countries-working-group/>
3. April 15, 2022: Selected as one of the international consortium members of “Low back pain consortium” of 32 Lower Middle-Income countries to represent India,
4. 2021 - continuing: “IASP presidential task force member for interdisciplinary pain management”
5. 2021- continuing: Programme Faculty: European Executive Program in Neuromodulation (EEPIN) at City University London: weblink: <https://www.city.ac.uk/news-and-events/events/2023/june/executive-education-program-in-neuromodulation>
6. 2021-2022: Developing Country Working Group (DCWG) task force member of the International Association for the Study of Pain (IASP): <https://www.iasp-pain.org/group/developing-countries-working-group/>
7. 2018-2020: Editorial Board member for prestigious “Pain Research Forum” of IASP: <https://www.iasp-pain.org/painresearchforum?navItemNumber=6493>
8. 2019-2022: Treasurer of “Pain education Special Interest Group” of IASP: <https://www.iasp-pain.org/SIG/Education?navItemNumber=5272>
9. 2019-2021: Editor: Acute Pain SIG newsletter of IASP: <https://www.iasp-pain.org/SIG/AcutePain?navItemNumber=5262>
10. 2017-2018: Task force member " Global Year for excellence for Education (2018)" of IASP

## **IMPORTANT NATIONAL ACADEMIC EXECUTIVE POSITIONS**

1. 2021-ongoing: Specialist Board Member of Pain medicine for DNB/DrNB/FMB of National Board of Examination of Medical Sciences (MBEMS)
2. 2020-Ongoing: Chairperson COVID training committee of PGIMER, Chandigarh
3. 2019-2021: Core Committee member for the formulation of A consensus practice guideline on Multimodal opioid sparing oncoanesthesia from Society of OncoAnesthesia and Perioperative Care (SOAPC) for minimally invasive onco-surgery
4. 2018-ongoing: Member Institutional Ethics Committee (Human Studies) of National Institute of Pharmaceutical Education and Research (NIPER), Mohali.
5. 2018-current: Executive council Member of Chandigarh Chapter of ISA
6. 2018-2021: Executive member of Indian Academy of Pain Medicine (IAPM) an academic wing of Indian Society for Study of the Pain (ISSP): <https://www.issp-pain.org/education/iapm-2/governing-council/>

7. 2018-2021: Core committee member of Acute pain SIG of ISSP for formulation, of Acute Pain Management guidelines for patients with special needs from Indian Society for the Study of Pain (ISSP)
8. 2018-2021: Chair of Special Interest Group for interventional pain procedure for Indian Guideline development of ISSP
9. 2018-2021: Core member for ISSP Position statement: Position statement for pain medicine practice during the COVID pandemic of ISSP
10. 2016: Expert group member to develop consensus guideline for common pain conditions for project entitled "Action Against Pain" managed by "Asian Society of Continuing Medical Education". 2016
11. 2015-2018: National joint secretary, Indian Society for Study of the Pain
12. 2015: Haryana Government nominated EXPERT for strengthening of district hospital with pain management clinic under National Program for the prevention and control of Cancer, Diabetes, Cardiovascular disease and stroke for advisory services proposal by the government of Haryana in April 2015.
13. 2011-2014: Executive member of ISSP
14. 2008-2011: Executive member of ISSP
15. 2008-2011: Secretary and Founder member of "Chandigarh chapter of ISSP"

### **PATENTS AND INNOVATION**

May 2021	Design patent for the innovation in "FACE MASK" for use by interventionist/surgeon for performing procedures in COVID patient	Design patent number 343871-001 dated 26/05/2021
Dec 2022	Design patent for the innovation "AMBU BAG SYSTEM"	Design patent number 376249-001 dated 27/12/2022

### **AWARDS AND HONOURS**

#### **INTERNATIONAL AWARDS/HONOURS AND GRANTS**

<b>S.no.</b>	<b>Year</b>	<b>Award details</b>	<b>Granting authority</b>
1	2014	Awarded a grant of US\$10,000 by IASP Developing Countries Working Group: Initiative for Improving Pain Education in developing countries	IASP, USA
2	2012	Awarded Commonwealth Academic Staff Fellowship in pain management at Barts and The London NHS Trust, London, UK from January 2012 to July 2012 through rigorous selection process	British Council, UK
3	2012	Conferred with "Good Clinical Practice certificate award" by St Bartholomew's Hospital NHS trust, London	Queens Mary University, London,
4	2011	Awarded AHA accredited Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) provider	American Heart Association
5	2010	Awarded financial grant of \$ 1200 CAD to attend 13th World Congress on Pain at Montreal, Canada, 29 August -2 September 2010	IASP, USA
6	2009	Awarded AHA accredited Basic Life Support (BLS) and	American Heart

		Advanced Cardiac Life Support (ACLS) provider	Association
7	2008	Awarded financial grant of \$ 1000 to attend 12th World Congress on Pain at Glasgow, Scotland, UK, 17-22, August 2008	IASP, USA
8	2005	Awarded financial grant of Aus \$ 1000 grant to attend 11th World Congress on Pain at Sydney, Australia, August 21-26, 2005	IASP, USA and DST and ICMR, India
9	2018	Awarded financial grant of \$ 1600 to attend 17th World Congress pain at Boston, USA, September 12-16, 2018	IASP, USA

### NATIONAL AWARDS/HONOURS

S.no.	Year	Award details	Granting authority
1	Nov 2021	Indian Society of Anaesthesiologists Presidents Appreciation award for academic achievements	Indian Society of Anaesthesiologists
2	2015	National Hindi Award for Publishing “Back Care Booklet” in Hindi.	Ministry of Home Affairs, Govt. of India.
3	2015	Prestigious “TEDx Talk” on theme “Accessibility” (Journey of becoming pain physician) at Lalbahadur Shastri Institute of Management (LBSIM), New Delhi	TEDx committee, LBSIM, New Delhi
4	2020	Certificate of Appreciation to PPE clad COVID warriors	Indian Society of Anaesthesiologists (ISA)
5	2018	Excellence in Pain Research award	World Institute of Pain-India Section
6	2017	Scroll of Fellow of National Academy of Medical Sciences (FAMS)	National Academy of Medical Sciences (NAMS)
7	2018	Scroll of “Fellow of Indian Academy of Pain Medicine (FIAPM)	Indian Society for Study of Pain (ISSP)
8	2008	National level Dr. Kop’s Award for paper entitled “Subtenon block compared to intravenous fentanyl for perioperative analgesia in paediatric cataract surgery” at the 56th ISACON.	Indian Society of Anaesthesiologists (ISA)
9	2008	Felicited as Member of National Academy of Medical Sciences (MAMS)	National Academy of Medical Sciences (NAMS)
10	2018	High Quality Research Work award for High Prevalence of Hypovitaminosis D in Indian Chronic Low Back Patients at 6th, Annual Research Day	PGIMER, Chandigarh
11	2017	High Quality Research Work award for research work published “Vitamin D Supplementation in Patients with Chronic Low Back Pain: An Open Label, Single Arm Clinical Trial” at 5th Annual Research Day	PGIMER, Chandigarh
12	2016	High Quality Research Work award on 4th Annual Research Day, PGIMER, Chandigarh for research work published “Transforaminal versus parasagittal interlaminar epidural steroid injection in low back pain with radicular pain: a randomized, double-blind, active-control trial” at 4th Annual Research Day	PGIMER, Chandigarh
13	2013	High Quality Research Work award for research work published “Lateral parasagittal versus midline	PGIMER, Chandigarh

		interlaminar lumbar epidural steroid injection for management of low back pain with lumbosacral radicular pain: a double-blind, randomized study” at 3rd Annual Research Day,	
14	2011	Third best paper award for the paper at the 26th Annual national conference of ISSP.	Indian Society for the Study of Pain (ISSP)

### **FACULTY FOR INTERNATIONAL CONFERENCES**

1. May 18, 2022: Invited guest lecture on “Pain research In India” at Toronto Western Hospital Virtual Mode
2. April 8, 2022: Invited as visiting professor to University of Arizona, to deliver guest lecture on “Back pain and its management in Health Care workers” at Tucson, Arizona
3. April 5, 2022: Invited as visiting professor to University of Arizona, to deliver guest lecture on “Back pain management: Indian Perspective” at Tucson, Arizona
4. March 26, 2022: keynote lecture on “Back pain research In India, Translating from Bench to Bedside” at Pain association of Singapore, Annual Scientific Meeting 2022, held virtually on 26.03.2022.
5. Nov 2021: Sydney, Australia: keynote speaker “17<sup>th</sup> International Forum for Back and Neck Pain Research in Primary Care” organized by center for pain IMPACT Sydney, Australia, to deliver talk on “Back pain In India and south Asia”.
6. June 2021: Leeds: North England Pain Group Annual Meeting: Invited speaker to deliver talk on “Pain management, how do we do it?, Challenges and collaboration” (online meeting)
7. April 2021: London: William Harvey European Executive Program on Neuromodulation (EEPIN): Invited Resource faculty (online program of six half days session over three weekends)
8. April 2019: Kuching, Sarawak, Malaysia at 8<sup>th</sup> Association of South-East Asian Pain Societies Congress (ASEAPS): For the USG hands on workshop for two stations “Principles of Ultrasound” and “Knobology” and “hip and Knee Joint interventions for chronic pain”.
9. Sep 2018: Boston: 17<sup>th</sup> World Congress on Pain: Invited Workshop faculty for hand on Ultrasound workshop for the station on “Basics on Ultrasound and Knobology”.
10. Sep 2018: Boston: 17<sup>th</sup> World Congress on Pain: Invited Guest Speaker: for “Its time to move from center to periphery” at the satellite symposium of “Acute Pain Special Interest Group of IASP.
11. Sep 2017: Copenhagen, Denmark: EFIC: Invited guest speaker for talk on “Postoperative pain management in older persons” at the satellite symposium of Acute Pain SIG of IASP.
12. July 2017: Delhi: Invited resource faculty for IASP at the IASP-ISSP Multidisciplinary Evidence-Based Pain Management Program, Evidence-Based Guidelines, Interventional Therapies and Multimodal Management.
13. February 2017: Yangon, Myanmar: 7<sup>th</sup> Association of South-East Asian Pain Societies Congress (ASEAPS): Invited speaker to deliver a talk: “Low Back Pain: Does Epidural Steroids help?” at 7<sup>th</sup> Association of South-East Asian Pain Societies Congress (ASEAPS).
14. February 2017: Yangon, Myanmar: 7<sup>th</sup> Association of South-East Asian Pain Societies Congress (ASEAPS): Invited workshop faculty at international for “Pain Ultrasound workshop”
15. Nov 2016: Thimpu, Bhutan: 2<sup>nd</sup> International Conference on Medical and Health Sciences Invited international faculty for “Low back pain/pelvic girdle pain/Lumbo-pelvic pain in pregnancy”.
16. Sep 2016: Japan: 16<sup>th</sup> World Congress on Pain: Special invitee (as speaker) for meeting on Advancing Pain relief Education: Anchoring pain competencies around the world. A meeting to bring together international community to discuss global pain competencies



17. Sep 2016: Japan: 16<sup>th</sup> World Congress on Pain: Chaired a session on “Are Perioperative Opioids Obsolete” “Making change happen: measurements driving metamorphosis” at the satellite symposium of the Acute Pain SIG of IASP.
18. March 2010: Dubai: New York School of Regional Anesthesia World Anesthesia Congress (NWAC) Invited speaker to deliver a talk on “Analgesia for the Adult and Pediatric Multi-trauma Patient”.
19. March 2010: Dubai: New York School of Regional Anesthesia World Anesthesia Congress (NWAC) Invited Workshop faculty: “Ultrasound - guided nerve blocks intensive workshop : Upper Extremity Nerve Blocks”.

#### **FACULTY LECTURES AT NATIONAL CONFERENCES:**

**Lectures around 250**

**Around 200 : workshops and CME conducted at national conferences: around 60**

### **RESEARCH PROJECTS AND GRANTS**

#### **INTERNATIONAL GRANT**

S.no.	Role	Time Period	Granting Agency	Funds	Title:
1	PI	2014-2015	International Association for the Study of Pain (IASP)	US \$10,000	Pain education in the graduate nursing school at a tertiary care center in India

#### **EXTRAMURAL GRANTS**

S.no.	Role	Time Period	Granting Agency	Funds	Title:
1	PI	2022-2025	Department of Science and Technology, (DST) Satyam. Sanction letter number: DST/SATYAM/2020/62 dated 4 <sup>th</sup> Feb 2022	530,000 INR (5.3 million INR)	Evaluating the long term effect of Integrated Approach of Yoga Therapy (IAYT) on physical and mental health, quality of life and biomarkers in patients with chronic low back pain and comparing it with physical exercise or usual care: A community based randomized Controlled Trial.
2	PI	2015-2018	Department of Science and Technology, UT, (DST UT) India,	1,10,000 INR	Effect of two different doses of lumbar epidural steroid injection on plasma cortisol and ACTH levels in patients with low back pain in UT Chandigarh
3	PI	2013-2015	DST, UT, India,	1,25,000	Improvement of Chronic Back Pain with Vitamin D supplementation: An open

				INR	label, single arm study at UT Chandigarh
4	Co-PI	2017-2019	DST UT, India,	1,00,000 INR	Comparison of systemic dexamethasone levels following its perineural versus intravenous administration: A randomized, double-blind study
5	Co-PI	2018-2021	ICMR, New Delhi	20,00,000 INR	A community study to assess the prevalence, knowledge and disability regarding low back pain among North Indian population

### INTRATRAMURAL GRANTS

S.no.	Role	Time Period	Granting Agency	Funds	Title:
6	PI	2017-2019	PGIMER, Chandigarh, India, (Intramural),	4,00,000 INR	Pulsed radiofrequency for the treatment of low back pain with radicular pain and its correlation with Quantitative Sensory Testing—a prospective, parallel group, randomized, double blind, sham-controlled trial.
7	PI	2015-2017	PGIMER, Chandigarh, India,	99,000 INR	Development, validation and evaluation of effectiveness of novel self-instructional module for patients with chronic non-specific low back pain
8	PI	2012-2015	PGIMER, Chandigarh, India,	55,000/ INR	Efficacy of subtenon block in infants – a comparison with intravenous fentanyl for perioperative analgesia in infantile cataract surgery.

## PEER REVIEWED PUBLICATIONS IN JOURNAL

### Citation indices

- H index=31, i10 index=68, Citations=2678

### The publications related to chronic pain field

#### 2023

1. Fandim JV, Hinman RS, Øverås CK, Sharma S, Belton J, Oliveira VC, Dear BF, Parker R, **Ghai B**, Bennell KL, Ferreira P, Hartvigsen J, Saragiotto BT. One step at a time. Shaping consensus on research priorities and terminology in telehealth in musculoskeletal pain: an international modified e-Delphi study. *BMC Musculoskelet Disord*. 2023 Oct 3;24(1):783. doi: 10.1186/s12891-023-06866-0.
2. Bansal D, Favas Kt M, Bharti SK, **Ghai B**. Identifying Risk Factors and Health Concerns Associated With Chronic Low Back Pain Among Northern Indians: A Community-based Study. *Pain Physician*. 2023;26: E549-E556.
3. Poojari S, Dhiman D, **Ghai B**, Mathur D, Metri K, Kataria K, Anand A. Effectiveness of integrated approach of yoga therapy versus usual care in management on chronic low back pain patients: A randomized controlled pilot study. *Pain Pract*. 2023 Sep 19. doi: 10.1111/papr.13296. Epub ahead of print.
4. Goyal A, Makkar JK, **Ghai B**, Sharma R, Kumar V. Cross-Cultural Adaptation and Validation of the Hindi Version of EuroQol (EQ-5D-3L) Health Questionnaire in Patients With Chronic Low Back Pain. *Spine (Phila Pa 1976)*. 2023; 48: E330-E338.
5. Mohan A, Sharma R, **Ghai B**, Kumar V, Makkar JK, Jain A. Cross-cultural Adaptation and Validation of Hindi Version of Roland Morris Disability Questionnaire for Chronic Low Back Pain in Indian Population. *Spine (Phila Pa 1976)*. 2023 Mar 1;48(5):364-370.

#### 2022

6. **Ghai B**, Jafra A, Bhatia N, Chanana N, Bansal D, Mehta V. Opioid sparing strategies for perioperative pain management other than regional anaesthesia: A narrative review. *J Anaesthesiol Clin Pharmacol*. 2022 Jan-Mar;38(1):3-10. doi: 10.4103/joacp.JOACP\_362\_19
7. **Ghai B**, Kumar M, Makkar JK, Goni V. Comparison of ultrasound guided pulsed radiofrequency of genicular nerve with local anesthetic and steroid block for management of osteoarthritis knee pain. *Korean J Pain*. 2022 Apr 1;35(2):183-190.

#### 2021

8. Solanki SL, Thota RS, Rajan J, Gangakhedkar GR, Jain P, Gottumukkala V, Garg R, Cata JP, Goswami J, Ranganath N, Ramkiran S, **Ghai B**, Popat KU, Buggy DJ, Pingle AA, Baxi V, Rayani BK, Thomas M, Bhatnagar S, Divatia JV. Multimodal opioid sparing onco-anesthesia: A consensus practice guideline from Society of Onco-Anesthesia and Perioperative Care (SOAPC). *J Opioid Manag*. 2021 Sep- Oct;17(5):417-437. doi: 10.5055/jom.2021.0675. PMID: 34714542.
9. Chandrasekhr B, Bansal D, **Ghai B**. In Response to Comments on the Efficacy and Safety of Opioid Analgesics for the Management of Chronic Low Back Pain. *Pain Physician*. 2021 May;24(3):E379-E380. PMID: 33988961.
10. Asrar MM, **Ghai B**, Pushpendra D, Bansal D. Psychosocial morbidity profile in a community-based sample of low back pain patients. *Sci Rep*. 2021; 11: 2610. doi: 10.1038/s41598-021-82324-y.
11. Boya C, Bansal D, Kanakagiri S, **Ghai B**. Efficacy and Safety of Opioid Analgesics for the Management of Chronic Low Back Pain: An Evidence from Bayesian Network Meta-Analysis. *Pain Physician*. 2021; 24: 73-82.

#### 2020

12. Poojari S, **Ghai B**, Metri K, Gupta JS, Verma P. Chronic low back pain: Can Yoga as an integrative approach be the best way forward? *Integrative Medicine Case Reports*. 2020; 1(1): 6-7.
13. Bansal D, Asrar MM, **Ghai B**, Pushpendra D. Prevalence and Impact of Low Back Pain in a Community-Based Population in Northern India. *Pain Physician*. 2020; 23: E 389-98.
14. **Ghai B**, Malhotra N, Bajwa SJS. Telemedicine for chronic pain management during COVID-19 pandemic. *Indian J Anaesth*. 2020; 64: 456-462.
15. **Ghai B**, Gupta AK, Makkar JK, Dhath SS. Contrast Medium Volume Needed to Reach Anterior Epidural Space via the Kambin Triangle or Subpedicular Approach for Transforaminal Epidural Injection. *Pain Physician*. 2020; 23: 383-92.
16. **Ghai B**, Gudala K, Asrar MM, Chanana N, Kanukula R, Bansal D. Development, validation and evaluation of a novel self-instructional module in patients with chronic non-specific low back pain. *Indian J Anaesth*. 2020; 64: 299-305.
17. **Ghai B**, Verma S. Unique challenges and opportunities faced by pain physicians during COVID-19 crisis. *Indian J Pain* 2020; 34: 85-8

18. Verma S, Surange P, Kothari K, Malhotra N, **Ghai B**, Jain A, et al. Indian society for study of pain position statement for pain medicine practice during the COVID pandemic. *Indian J Pain* 2020; 34: 71-84

#### **2019**

19. **Ghai B**, Gupta V, Jain A, Goel N, Chouhan D, Batra YK. Effectiveness of platelet rich plasma in pain management of osteoarthritis knee: Double blind, randomized comparative study]. *Rev Bras Anesthesiol*. 2019; 69: 439-447.

#### **2018**

20. Ahuja V, Thapa D, **Ghai B**. Strategies for prevention of lower limb post-amputation pain: A clinical narrative review. *J Anaesthesiol Clin Pharmacol*. 2018; 34: 439-449.
21. **Ghai B**, Dhiman D, Loganathan S. Extended duration pulsed radiofrequency for the management of refractory meralgia paresthetica: a series of five cases. *Korean J Pain*. 2018;31: 215-220.
22. **Ghai B**, Bansal D, Abdul AJ. Ghai B, Bansal D, Abdul AJ. Adrenal suppression after epidural steroids. *Pain*. 2018;159: 2678.
23. Bhatia N, Mehta S, Saini V, **Ghai B**, Kaman L. Comparison of Intraperitoneal Nebulization of Ropivacaine with Ropivacaine-Fentanyl Combination for Pain Control Following Laparoscopic Cholecystectomy: A Randomized, Double-Blind, Placebo-Controlled Trial. *J Laparoendosc Adv Surg Tech A*. 2018: 28: 839-844.
24. Bansal D, Boya CS, Vatte R, **Ghai B**. High Prevalence of Hypovitaminosis D in Patients with Low Back Pain: Evidence from Meta-Analysis. *Pain Physician*. 2018; 21: E389-E399.
25. **Ghai B**, Bansal D, Abdul AJ. In Response to Huhn et al RE: Hypothalamic Pituitary Adrenocortical Axis Suppression Following a Single Epidural Injection of Methylprednisolone Acetate: Review, Patient Safety and Clinical Care. *Pain Physician*. 2018; 21: E288.

#### **2017**

26. Abdul AJ, **Ghai B**, Bansal D, Sachdeva N, Bhansali A, Dhatt SS. Hypothalamic Pituitary Adrenocortical Axis Suppression following a Single Epidural Injection of Methylprednisolone Acetate. *Pain Physician*. 2017; 20: E991-E1001.
27. Gudala K, **Ghai B**, Bansal D. Hindi version of short form of douleur neuropathique 4 (S-DN4) questionnaire for assessment of neuropathic pain component: a cross-cultural validation study. *Korean J Pain*. 2017; 30: 197-206
28. Gudala K, Bansal D, Vatte R, **Ghai B**, Schifano F, Boya C. High Prevalence of Neuropathic Pain Component in Patients with Low Back Pain: Evidence from Meta-Analysis. *Pain Physician*. 2017; 20: 343-352.
29. Mehta V, Snidvongs S, **Ghai B**, Langford R, Wodehouse T. Characterization of peripheral and central sensitization after dorsal root ganglion intervention in patients with unilateral lumbosacral radicular pain: a prospective pilot study. *Br J Anaesth*. 2017; 118: 924-931
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