International Journal of Pharmaceutical Research and Applications
Volume 10, Issue 6 Nov - Dec 2025, pp: 1116-1118 www.ijprajournal.com ISSN: 2456-4494

Prescribing Patterns and Off-Label Use of Gabapentinoid Agents

Dr. Abinash.K[1], Dr. Madhavan.S[2], Dr. Yashmi Agwina Xavier[3]
Tamil Nadu Dr. M.G.R. Medical University

Date of Submission: 05-12-2025 Date of Acceptance: 12-12-2025

ABSTRACT
Gabapentinoid agents, including gabapentin and pregabalin, are widely prescribed for a range of conditions due to their analgesic, anxiolytic, and anticonvulsant properties. Originally approved for epilepsy and neuropathic pain, their clinical use has expanded substantially to include numerous off-label indications such as fibromyalgia, generalized anxiety disorder, insomnia, and chronic pain syndromes. This increasing trend has raised concerns regarding prescribing patterns, rationality of use, and potential safety risks. A growing body of evidence highlights issues such as polypharmacy, inappropriate dosing, limited clinical efficacy in some off-label conditions, and risk of dependence or misuse. Studies analyzing prescription data indicate substantial variation in prescribing practices across regions and specialties, with a significant proportion of use being off-label. While gabapentinoids remain important therapeutic options, careful evaluation of their clinical appropriateness, monitoring of patient outcomes, and stricter regulatory guidelines are necessary to ensure rational use and minimize misuse.

KEYWORDS: Gabapentinoids, Gabapentin, Pregabalin, Prescribing patterns, Off-label use, Neuropathic pain, Polypharmacy, Drug safety, Rational prescribing, Misuse potential

I. INTRODUCTION

Gabapentinoid agents, primarily gabapentin and pregabalin, belong to a class of drugs initially developed as antiepileptics but later recognized for their role in neuropathic pain management. Despite their structural similarity to the neurotransmitter γ-aminobutyric acid (GABA), they act by binding to the α2δ subunit of voltage-gated calcium channels, thereby modulating excitatory neurotransmitter release. Over the past two decades, gabapentinoids have witnessed a substantial rise in prescription rates worldwide, extending far beyond their approved indications.

The prescribing patterns of gabapentinoids reveal a broad clinical utilization, particularly in primary care and pain management settings. While their efficacy in neuropathic pain and partial seizures is well established, a significant proportion of their use is attributed to off-label indications, including fibromyalgia, generalized anxiety disorder, chronic low back pain, migraine prophylaxis, and insomnia. This trend is partly driven by the limited therapeutic options for chronic pain and psychiatric disorders, coupled with the relatively favorable safety profile of gabapentinoids compared to opioids and benzodiazepines.

However, increasing off-label prescribing has raised important concerns regarding the rationality and safety of their use. Reports highlight variations in dosing practices, potential lack of efficacy in certain conditions, and emerging risks such as sedation, cognitive impairment, misuse, and dependence. The growing recognition of gabapentinoid misuse, often in combination with opioids, has further amplified the need to critically assess prescribing trends. Understanding the prescribing patterns and off-label utilization of gabapentinoids is therefore essential for promoting rational drug use, preventing inappropriate prescribing, and ensuring patient safety. By analyzing clinical practices, regulatory frameworks, and real-world outcomes, healthcare professionals and policymakers can establish evidence-based guidelines to optimize the therapeutic role of gabapentinoids while minimizing risks associated with their misuse and off-label use.

PRESCRIBING PATTERNS OF GABAPENTINOIDS

1. **Approved (On-label) Indications**
   - **Gabapentin**
     - Partial seizures (as adjunctive therapy)
     - Post-herpetic neuralgia
   - **Pregabalin**
     - Partial seizures (as adjunctive therapy)
     - Neuropathic pain (diabetic neuropathy, post-herpetic neuralgia, spinal cord injury)
     - Fibromyalgia
     - Generalized anxiety disorder (in some countries, e.g., EU but not FDA-approved in the USA)

International Journal of Pharmaceutical Research and Applications
Volume 10, Issue 6 Nov - Dec 2025, pp: 1116-1118 www.ijprajournal.com ISSN: 2456-4494

2. **Common Off-label Indications**
- Chronic low back pain
- Sciatica and radiculopathy
- Migraine prophylaxis
- Insomnia and sleep disturbances
- Restless legs syndrome (RLS)
- Alcohol withdrawal and dependence
- Bipolar disorder and mood stabilization
- Anxiety disorders (other than GAD)
- Hot flashes in menopause or cancer patients
- Pruritus (uremic, cholestatic, neuropathic itch)
- Post-operative pain management

3. **Prescription Trends / Patterns Observed in Practice**
- **High-dose use:** Often prescribed at doses higher than recommended, especially for pain management.
- **Combination therapy:** Frequently co-prescribed with opioids, NSAIDs, or antidepressants for multimodal pain control.
- **Polypharmacy issues:** Prescribed alongside benzodiazepines or sedative drugs, increasing risk of CNS depression.
- **Elderly patients:** Commonly used in geriatric populations for chronic pain, though associated with higher risk of dizziness, falls, and cognitive impairment.
- **Primary care dominance:** Large proportion of prescriptions come from general practitioners rather than neurologists or psychiatrists.
- **Escalating off-label use:** In many countries, more than half of gabapentinoid prescriptions are for unapproved indications.
- **Regional variation:** Prescribing patterns differ widely between countries due to differences in approval status, clinical guidelines, and regulation.

4. **Concerns and Emerging Trends**
- Increasing **misuse and abuse potential**, particularly in patients with a history of opioid or substance use disorder.
- **Inappropriate continuation** despite limited benefit, leading to long-term dependence.
- Growing **regulatory restrictions** in several countries (e.g., scheduling pregabalin/gabapentin as controlled substances).

OFF-LABEL USES OF GABAPENTINOIDS

1. **Neurological Disorders**
- Migraine prophylaxis
- Restless legs syndrome (RLS)
- Essential tremor
- Peripheral neuropathy (non-diabetic, chemotherapy-induced, HIV-related)
- Trigeminal neuralgia (alternative therapy)
- Spinal cord injury–related pain

2. **Psychiatric &Behavioral Disorders**
- Anxiety disorders (other than GAD, e.g., social anxiety, panic disorder, PTSD)
- Bipolar disorder (as adjunct therapy)
- Mood stabilization in depressive disorders
- Insomnia and sleep disturbances
- Behavioral symptoms in dementia

3. **Substance Use & Withdrawal**
- Alcohol withdrawal syndrome
- Maintenance therapy in alcohol dependence
- Reduction of craving in cocaine and cannabis dependence
- Opioid withdrawal management
- Smoking cessation (limited evidence)

4. **Pain & Musculoskeletal Conditions**
- Chronic low back pain
- Sciatica and radiculopathy
- Fibromyalgia (gabapentin, though pregabalin is approved in some regions)
- Osteoarthritis-related pain
- Complex regional pain syndrome (CRPS)
- Post-surgical and post-traumatic pain

5. **Oncology & Palliative Care**
- Cancer-related neuropathic pain
- Hot flashes (in breast cancer patients or post-menopausal women)
- Pruritus associated with cancer or treatment

6. **Other Medical Conditions**
- Uremic pruritus (in chronic kidney disease)
- Pruritus in cholestatic liver disease
- Chronic cough (refractory)
- Irritable bowel syndrome (IBS) with pain-predominant symptoms
- Vulvodynia and pelvic pain syndromes

II. CONCLUSION

Gabapentinoid agents, particularly gabapentin and pregabalin, have become widely utilized in clinical practice beyond their approved indications. While their effectiveness in neuropathic pain and certain seizure disorders is well established, a significant portion of their

International Journal of Pharmaceutical Research and Applications
Volume 10, Issue 6 Nov - Dec 2025, pp: 1116-1118 www.ijprajournal.com ISSN: 2456-4494

prescriptions are for off-label conditions such as chronic pain syndromes, psychiatric disorders, insomnia, and substance withdrawal. This trend reflects both the therapeutic versatility of gabapentinoids and the clinical demand for alternatives to opioids and benzodiazepines. However, the rapid increase in off-label prescribing raises important concerns regarding rational drug use, variable efficacy, inappropriate dosing, and the growing recognition of misuse and dependence. Prescribing patterns often demonstrate polypharmacy and long-term use without adequate monitoring, particularly in vulnerable populations such as the elderly and those with substance use disorders.Therefore, while gabapentinoids remain valuable therapeutic tools, their use must be guided by evidence-based practice, patient-specific risk–benefit assessment, and strict adherence to prescribing guidelines. Enhanced physician awareness, patient education, and regulatory oversight are essential to ensure rational prescribing, minimize misuse, and optimize patient outcomes.

REFERENCES

[1]. Goodman CW, Brett AS. Gabapentin and pregabalin for pain — is increased prescribing a cause for concern? N Engl J Med. 2017;377(5):411–414.
[2]. Evoy KE, Morrison MD, Saklad SR. Abuse and misuse of pregabalin and gabapentin. Drugs. 2017;77(4):403–426.
[3]. Peckham AM, Evoy KE, Ochs L, Covvey JR. Gabapentin for off-label use: Evidence-based or cause for concern? Subst Abuse. 2018;12:1178221818801311.
[4]. Johansen ME. Gabapentinoid use in the United States 2002 through 2015. JAMA Intern Med. 2018;178(2):292–294.
[5]. Bonnet U, Scherbaum N. How addictive are gabapentin and pregabalin? A systematic review. EurNeuropsychopharmacol. 2017;27(12):1185–1215.
[6]. Chiappini S, Schifano F. A decade of gabapentinoid misuse: an analysis of the European Medicines Agency's 'suspected adverse drug reactions' database. CNS Drugs. 2016;30(7):647–654.
[7]. Goodman CW, Brett AS. A clinical overview of off-label use of gabapentinoid drugs. JAMA Intern Med. 2019;179(5):695–701.
[8]. Zaccara G, Gangemi P, Perucca P, Specchio LM. The adverse event profile of pregabalin: A systematic review and meta-analysis of randomized controlled trials. Epilepsia. 2011;52(4):826–836.
[9]. Häuser W, Petzke F, Sommer C. Comparative efficacy and harms of duloxetine, pregabalin, and gabapentin in neuropathic pain — systematic review and meta-analysis. Pain. 2010;151(3):694–705.
[10]. Montastruc F, Loo SY, Renoux C. Trends in gabapentin and pregabalin use and misuse in the UK and France: A population-based cohort study. Br J Clin Pharmacol. 2018;84(12):2829–2837.
[11]. Wiffen PJ, Derry S, Moore RA, Aldington D, Cole P, Rice ASC. Antiepileptic drugs for neuropathic pain and fibromyalgia — an overview of Cochrane reviews. Cochrane Database Syst Rev. 2013;2013(11):CD010567.
[12]. Verma V, Singh N, Singh Jaggi A. Pregabalin in neuropathic pain: Evidences and possible mechanisms. Curr Neuropharmacol. 2014;12(1):44–56.
[13]. Food and Drug Administration (FDA). Neurontin (Gabapentin) Prescribing Information. FDA; 2019.
[14]. European Medicines Agency (EMA). Pregabalin: Summary of Product Characteristics. EMA; 2020.
[15]. National Institute for Health and Care Excellence (NICE). Neuropathic pain in adults: pharmacological management in non-specialist settings. Clinical Guideline CG173; 2019.