

Chapter 7


Nutraceuticals for Fibromyalgia and Neuropathic Pain

Garima Mishra

 <https://orcid.org/0000-0002-8665-5635>

*Department of Pharmacy, College of Health Sciences, Debre Tabor University,
Ethiopia*

Pradeep Singh

 <https://orcid.org/0000-0003-2908-2823>

*Department of Pharmacy, College of Health Sciences, Debre Tabor University,
Ethiopia*

Faheem Hyder Pottoo

*College of Clinical Pharmacy, Imam Abdulrahman Bin Faisal University, Saudi
Arabia*

Md Noushad Javed

 <https://orcid.org/0000-0002-5775-8256>

School of Pharmaceutical Sciences and Research, Jamia Hamdard, India

Mulugeta Molla Zeleke

*Department of Pharmacy, College of Health Sciences, Debre Tabor University,
Ethiopia*

Yohannes Shumet Yimer

College of Health Sciences, Debre Tabor University, Ethiopia

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ABSTRACT

Both neuropathic pain and fibromyalgia are horrific painful conditions arising due to impairment in the somatosensory nervous system and the musculoskeletal system, respectively. They share some common symptoms like hyperalgesia, allodynia, insomnia, cognitive deficits, and mood disturbances. It is believed that fibromyalgia is the consequence of dysfunction of the central nervous system, autonomic nervous system, imbalance in neurotransmitters, and psychological and emotional stress. Henceforth, these pain syndromes have become a major challenge for healthcare professionals due to their complex etiology and poor availability and effectiveness of the drugs. Notably, the available synthetic drugs possess serious side effects including physical dependence and tolerance. Therefore, researchers are now seeking natural-based therapy for modulating chronic pain conditions. This chapter has been written with the intention of exploring the beneficial effects of various nutraceuticals including herbal dietary supplements in neuropathic pain and fibromyalgia.

INTRODUCTION

Pain is a common presenting complaint of patients in daily life. It is an indication to prevent the detrimental effects of tissue damage and maintaining people's health. Acute pain is self-limiting and takes place in reaction to a specific injury (Wang & Wang, 2003), while chronic pain is relatively caused due to direct injury to neuronal tissue that invokes certain conditions like fibromyalgia, neuropathic pain that last longer than acute pain (Alles and Smith, 2018). In recent times, neuropathic pain has become a significant burden affecting approximately 7-8% population worldwide (Jensen *et al.*, 2011).

Neuropathic pain (NP) was formerly stipulated as pain emanates from primary lesion and peripheral or central nervous malaise. The definition of NP was updated later on account of the term dysfunction which could not explain the pathophysiology. Pain triggered by a disorder or lesion of the somatosensory nervous system is referred to as neuropathic pain as claimed by International Association for the Study of Pain (Jensen *et al.*, 2011; Murnion, 2018). It is most commonly associated with several diseased conditions comprising diabetes mellitus, cancer, human immunodeficiency virus (HIV) infection, and degenerative spine disorders (Schmader, 2002). On the other hand, fibromyalgia (FM) also has an excessive vulnerability to pain and recurrent comorbidities, such as insomnia and affective disorders (Arnold *et al.*, 2006). Contrary to traditional NP syndromes, in FM patients, no nerve lesions can be observed (Vierck, 2006). Despite these major variations in the molecular

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