

ABSTRACT

An injury or malfunction of the peripheral or central nervous system causes neuropathic pain in an individual. The pain persists for several months or years in people despite healing the damaged tissues. Some metabolic conditions are reported to induce such pain in individuals. Disorders like anxiety, depression, and sleeping disorders like insomnia and excessive daytime sleepiness are majorly causing neuropathic pain. This pain is frequently seen in cancer, HIV, diabetic polyneuropathy, cardiac problems, and multiple sclerosis. They induce neuropathic pain due to certain metabolic conditions in their bodies. The commonly seen diseases among all the other diseases to induce this pain are diabetic polyneuropathy, multiple sclerosis, and sleeping disorders also have a significant influence on such pain. The scope of this review is to provide current insight into the prevalence of neuropathic pain by the different disorders. Furthermore, it helps to understand the proper therapeutics that should be provided to reduce such conditions in individuals experiencing neuropathy

BACKGROUND

- The condition that results in severe pain among individuals due to complications like dysfunction or a lesion inside the (PNS) peripheral and (CNS) central nervous system and leads to chronic distress among patients is termed as neuropathic pain (NP).
- Affects 7% - 10% of the common population. Its rate of incidence is high due to existing factors like senescent global population, elevated diabetic population and a larger population of cancer survivors who underwent through chemotherapy.
- NP is correlated with various comorbidities including mood disorders like depression, anxiety etc.
- It also results in various sleeping disorders. The correlation between NP and these conditions are that, NP can exaggerate the endurance of those who have any of the associated condition.
- NP is also noticed to coexist with certain metabolic diseases like cancer, HIV, diabetes, multiple sclerosis etc. the interrelationship between them is studied and observed to be present among many patients.

OBJECTIVES

- To focus the specific neurological disease conditions that cause neuropathic pain based in specialist settings.
- To determine the pathogenesis of neuropathic pain, either as part of a specific disease related to the neuropathic condition or as a metabolic disorder that causes neuropathic pain.

METHODS

- The study is conducted to review and understand the association and incidence of this pain in certain diseases and disorders by investigating their mechanisms with therapeutic measures for such metabolic conditions.
- Online databases were searched from January 2000 to May 2020, and studies were included based on the inclusion criteria.

DISEASE ASSOCIATED WITH NP

Some of the majorly affecting comorbidities are diabetes, HIV, cancer, multiple sclerosis, sleeping disorders and mood disorders

Diabetic neuropathy:

- It is a condition that occurs so common that it affects 1 out of 4 diabetic patients. Commonly, the reason for this metabolic state is the insufficient control of blood glucose measure in diabetic patients.
- It causes abnormal weakness and sensations. The most affected age group are individuals above 40 years.
- The most usual form is the distal symmetric sensory is the its correlation to the autonomic action.

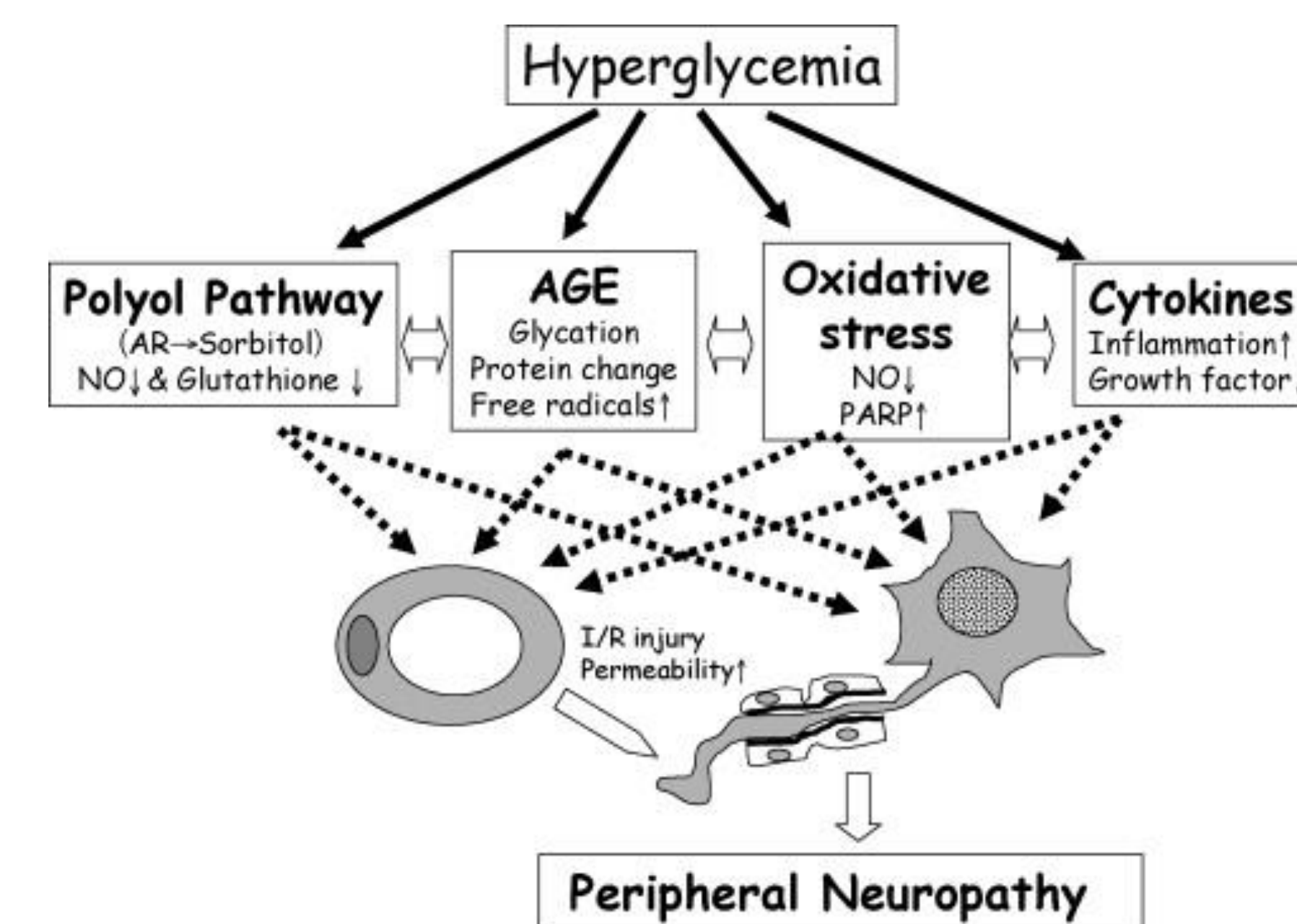


Figure 1. Pathophysiology of diabetic neuropathy.

Cancer:

- The occurrence of NP is high among patients undergoing treatment for cancer.
- NP is considered as severe effects of the treatments like chemotherapy.
- 90% of the individuals that attend neurotoxic chemotherapy are diagnosed with chemotherapy-induced peripheral neuropathy.

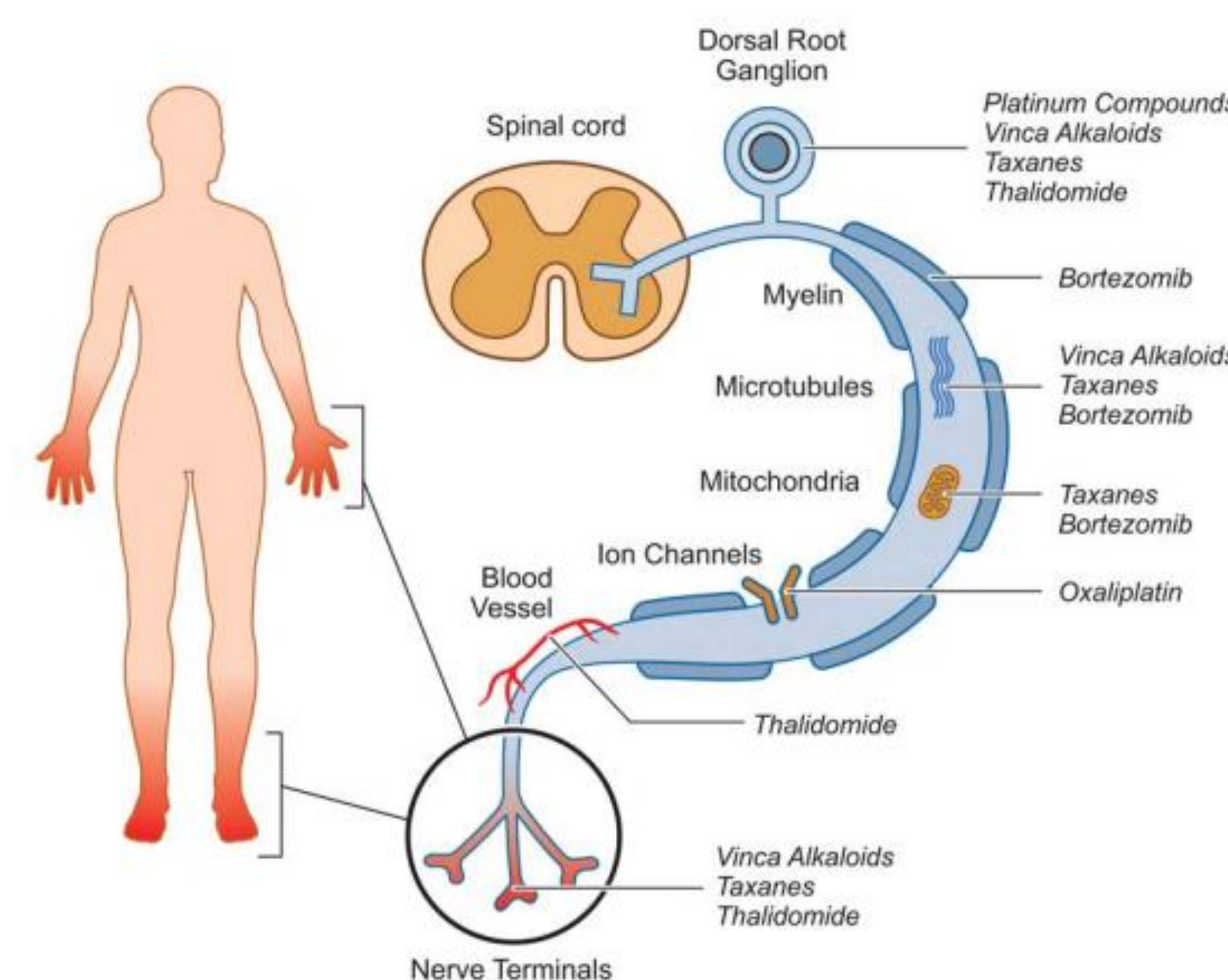


Figure 2. Distribution of Chemotherapy-Induced Peripheral Neuropathy (CIPN) Symptoms

Distal symmetric polyneuropathy:

- It is noticed to be commonly related to HIV. DSP occurs like 1/3rd of the HIV population.
- NP is an under-treated as a complication in HIV patients.
- Direct infection of HIV inside the nerve (peripheral nerve) is not bound to be the basis of the pathological alterations, whereas para-infections are said to be responsible for the alteration.

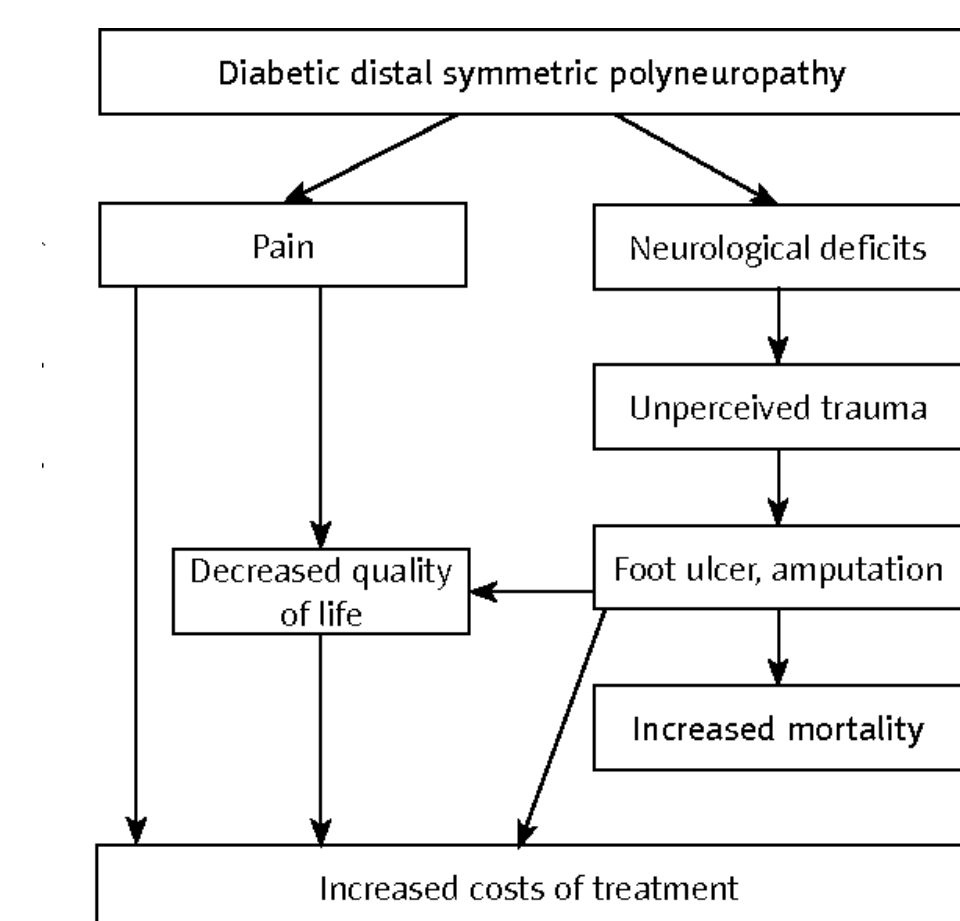


Figure 3. Burden of Distal symmetric polyneuropathy

Multiple sclerosis

- It is an ailment that destroys the myelin sheath that coats the nerves as the autoimmune disease.
- It has high rate of NP in patients since it affects almost 1/4th of the patient population experiencing multiple sclerosis.

Sleep disturbances

- Sleep disorders are common in individuals experiencing NP. The incidence of sleep disturbances in these patients are high.
- Above 70% of the population experiencing NP, reported to have sleep disturbances. Patients are reported to have additional effects like drowsiness, lack of energy and struggling concentration.

CONCLUSIONS

- When experienced by individuals, such comorbidities can be reduced by discovering more therapeutic techniques to ease the difficulties in the individual and by making their lives better.
- NP can be temporarily subsided using pharmacological techniques by the intake of antidepressants or anticonvulsants.
- Single cure does not exist, only early prevention and awareness of these comorbidities can make a difference in the patient's state.
- Future discoveries of drugs or relaxation techniques can bring a cure to the severe pain experienced by people.

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REFERENCE

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