

# Painful symptoms and quality of life in multiple sclerosis

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## Abstract

Pain is a common symptom in patients with multiple sclerosis (MS). However, different reports have indicated varying prevalence of pain in MS. This is considered to be due to differences in study samples or study designs. There are different types of pain such as trigeminal neuralgia, painful tonic spasms, and Lhermitte's sign. Pain, often overlooked by clinicians, adversely affects a patient's quality of life (QOL). Therapies for pain control should be considered for the relief of MS patients. Maintenance of QOL in MS is a very important factor for the patients, and measurement of QOL indicates the overall impact of the disease. For measuring QOL in MS, there are several MS-specific measures of health-related QOL (HRQOL) such as the Functional Assessment of Multiple Sclerosis (FAMS) instrument, the MSQOL-54 inventory, and the Disability & Impact Profile (DIP). Improvement of HRQOL instruments can have a more profound influence on MS in clinical practice and better quantification of response to a treatment. It is important to systematically investigate QOL as a predictive factor for the development of the disease. Further, it is an important factor in the treatment of MS patients.

## INTRODUCTION

Multiple sclerosis (MS) is a major inflammatory and demyelinating disease of the central nervous system (CNS), associated with a broad spectrum of physical and social impairments in young and middle-aged adults. Pain is a common symptom in MS patients. Numerous studies on pain management in MS have been reported; however, most of these therapeutic approaches were based on clinical experience. Painful symptoms usually decrease quality of life (QOL). MS patients sometimes suffer from a variety of symptoms such as gait ataxia, visual impairment, bowel or bladder dysfunction, and decreased cognitive function, and these symptoms decrease the QOL of the patients. Measurement of QOL is important in the assessment of MS patients' conditions, especially of those who develop multiple disabilities. However, most of the research on MS had been limited to the concepts of impairment and disability. This short review discusses the painful symptoms and QOL in MS.

## PAINFUL SYMPTOMS

World Health Organization (WHO) classifies pain syndromes as neuropathic pain, nociceptive somatic/visceral pain, and psychogenic pain.<sup>1</sup> Neuropathic pain is caused by any injury in

the nervous system, and includes central pain, trigeminal neuralgia, optic neuritis, Lhermitte's sign, glossopharyngeal neuralgia, and dysesthetic pain. Nociceptive somatic/visceral pain is due to an inappropriate physiologic response when nociceptors are activated, and includes painful tonic spasms, low-back pain, and paroxysmal pelvic pain. Psychogenic pain has a mental or psychosocial origin or cause. MS patients usually have several kinds of painful symptoms, and the prevalence of pain in MS has been reported to range from 29% to 86%.<sup>2</sup> The variation in data may be due to the different methods used, patient populations studied, and definitions of pain.<sup>2</sup> With regard to the correlation between pain frequency and medication use, only 22% subjects with pain have been reported to take medication for pain relief in a study.<sup>3</sup> Another report provided similar data, and indicated that the use of symptomatic medications was significantly lower than the frequency of symptom(s).<sup>4</sup> Many papers describing studies investigating the risk factors for painful symptoms have been published, and some of the risk factors that have been reported to be associated with painful symptoms are old age, long disease duration, high disease severity as measured by an Expanded Disability Status Scale (EDSS), female sex, and depression.<sup>2</sup>

Trigeminal neuralgia is relatively common in MS patients, and its prevalence has been reported to range from 0.9% to 4.9%.<sup>2</sup> In MS patients with trigeminal neuralgia, the percentage of bilateral symptoms is 11-31%, and that rate is much higher than that observed in trigeminal neuralgia patients without MS.<sup>5-8</sup> Tricyclic antidepressants and antiepileptics are usually used for relief from some pain syndromes associated with MS, including trigeminal neuralgia, central neuropathic pain, and paroxysmal pain. Uncontrolled pain can cause complications beyond the scope of symptom management; therefore, pain has a significant influence on a person's QOL. Painful symptoms should be relieved by appropriate medications.

### QUALITY OF LIFE

WHO defines QOL as "the individual's perceptions of their position in life in the context of the culture and value system in which they live, and in relationship to their goals, expectations, standards, and concerns".<sup>9</sup> Health contributes to QOL, and the true impact of health and disease on QOL is known as health-related QOL (HRQOL). It is conceptualized as those aspects of QOL that are influenced by the health of a person. Development of tools to measure HRQOL in individuals over time has produced important benefits.<sup>10</sup> It is generally accepted that HRQOL includes numerous domains. There is a wide range of potential domains, but all of them are not relevant to all studies; however, wherever possible, those that are relevant should be considered. For example, the following domains have been proposed: (1) Physical status and functional abilities; (2) Psychological status and well-being; (3) Social interactions; (4) Economic and/or vocational status and factors; and (5) Religious and/or spiritual status.<sup>11</sup> There are several general measures of HRQOL such as the Short Form-36 (SF-36) questionnaire and Sickness Impact Profile (SIP), which are sometimes used for evaluating QOL in MS. On the other hand, there are several MS-specific or hybrid (i.e., both general and MS-specific) measures of HRQOL such as the Functional Assessment of Multiple Sclerosis (FAMS), the Multiple Sclerosis Quality of Life-54 Instrument (MSQOL-54), and the Disability & Impact profile (DIP). A disease-specific tool may provide additional information regarding QOL in MS patients and assist caregivers to gain better insight into the lives of the patients, thereby leading to improved treatment and patient care.<sup>12</sup>

Several studies have shown that MS patients have lower HRQOL scores than patients with inflammatory bowel disease<sup>13</sup>, rheumatoid arthritis<sup>13</sup>, epilepsy<sup>14</sup>, and diabetes.<sup>14</sup> For evaluating the patients' status, disability is an important factor, and the evaluation of the factor is included in almost every therapeutic drug trial for MS. However, QOL is also an important factor for evaluating the disease status of MS patients, and consideration for maintaining QOL is critical in the treatment of MS patients. Several studies have been conducted to investigate the changes produced in the HRQOL scores of MS patients by drugs used in disease-modifying therapies, such as interferon beta-1b, interferon beta-1a, and glatiramer acetate.<sup>15-21</sup> Although the patients' QOL was not formally evaluated in the pivotal studies on disease-modifying therapies, by using a variety of HRQOL measures, some of the studies reported improvements of the patients' QOL, whereas others reported no change or even worsening of the outcome. Recently, QOL of MS patients treated with natalizumab was assessed, and it was shown to improve QOL by the use of natalizumab.<sup>22</sup>

Assessment of QOL may reveal problems that are amenable to corrective intervention, and with regard to the mode and place of treatment or other factors, may result in a change of policy and care.<sup>12</sup> In addition to validity and reliability, other factors that investigators should consider when using QOL instruments are appropriateness and responsiveness.<sup>23</sup> Responsiveness is particularly important when an instrument is used to evaluate the effect of a therapy on QOL. Failure to show responsiveness may affect the ability of the QOL instrument to detect change in subjective measures.<sup>23</sup>

### CONCLUSION

Therapies for pain control should be considered for the relief of MS patients. The effects of pain on QOL should be investigated in future clinical trials. It is important to systematically investigate QOL as a predictive factor for the development of MS. Further, it is an important factor in the treatment of MS patients. Validated QOL measures should be used for evaluating the global effects of therapy in future clinical trials.

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