

Emerging Medicines in Multiple Sclerosis

Kommu Santhosh*

Department of Biotechnology, Kakatiya University, Warangal, Telangana, India

Abstract

Multiple sclerosis (MS) is a progressive autoimmune neurological condition that mostly affects young adults and may be debilitating. Multiple sclerosis (MS) is currently treated with a number of disease-modifying medications (DMDs) (MS). There has been a surge in the discovery and advancement of possible novel drugs for MS, including oral therapies, in recent years. The aim of this review is to provide concise information on the mechanism of action, signs, symptoms, diagnosis as well as new therapies and medications that may be used off-label in MS.

Keywords: Multiple sclerosis; Symptoms; Diagnosis; Disease-modifying medications; Emerging therapies; Drugs

Introduction

Multiple sclerosis (MS) is the most prevalent nontraumatic debilitating condition in young people. MS is becoming more common and prevalent in both developed and developing countries, with the underlying cause still unknown. MS is a complex disorder in which many genes, as well as many well-defined environmental causes, such as vitamin D or ultraviolet B light (UVB) exposure, Epstein-Barr virus (EBV) infection, obesity and smoking light, contribute to disease susceptibility. Historically, MS was thought to be an organ-specific T-cell mediated autoimmune disorder. The effectiveness of B-cell targeted therapies, on the other hand, calls into question the traditional T-cell autoimmune orthodoxy. It has long been thought to be a two-stage illness, with early inflammation triggering relapsing-remitting disease and delayed neurodegeneration causing nonrelapsing development, i.e. secondary and primary progressive MS [1].

The defensive sheath (myelin) that protects nerve fibers is attacked by the immune system in MS, causing coordination issues between the brain and the rest of the body. The disease will eventually cause permanent nerve damage or degradation. Multiple sclerosis has no known remedy. Treatments, on the other hand, will help patients recover faster from attacks, change the course of the illness, and control symptoms.

Symptoms

Based on where the infected nerve fibers are located, the signs and symptoms of multiple sclerosis can vary widely from person to person and throughout the duration of the illness. Movement is also hampered by symptoms such as:

- Numbness or weakness in one or more limbs that typically occurs on one side of your body at a time, or your legs and trunk
- Electric-shock sensations that occur with certain neck movements, especially bending the neck forward (Lhermitte sign)
- Tremor, lack of coordination or unsteady gait
- Partial or complete loss of vision, usually in one eye at a time, often with pain during eye movement
- Prolonged double vision
- Blurry vision
- Slurred speech
- Fatigue

- Dizziness
- Tingling or pain in parts of your body
- Problems with sexual, bowel and bladder function [2]

Diagnosis

MS does not have any basic examinations. Instead, a differential diagnosis, or leaving out any disorders that may cause related signs and symptoms, is often used to confirm a diagnosis of multiple sclerosis. The diagnosis of relapsing-remitting MS is usually easy, based on a history of symptoms that are associated with the condition and validated by brain imaging scans such as MRI. When individuals have irregular symptoms or a progressive illness, diagnosing MS may be more complex. Further monitoring for spinal fluid analysis, evoked potentials, and further imaging could be essential in these situations [3].

Treatments for Multiple Sclerosis

The treatment of multiple sclerosis (MS) falls into 3 categories: treatment of exacerbations, slowing disease progression with disease-modifying therapies (DMTs), and symptomatic therapies. With the advent of new DMTs that, like older DMTs, decrease the incidence and magnitude of relapses as well as the accumulation of lesions found by magnetic resonance imaging, MS management is getting more complicated. Early therapy to delay or reverse the development of inflammatory lesions is recommended as a means to avoid the accumulation of disabilities. Nevertheless, there is a lack of comparative efficacy data and few clinical guidelines to aid healthcare providers in the optimal selection of DMTs. Given that some of the newer agents are associated with potentially serious, but rare, adverse events, careful consideration of the risk-benefit profile is necessary to minimize the risk to patients [4].

The newest immunotherapies for multiple sclerosis (fingolimod, natalizumab, dimethyl fumarate, teriflunomide, alemtuzumab)

*Corresponding author: Kommu Santhosh, Department of Biotechnology, Kakatiya University, Warangal, Telangana, India, Tel: 040-47482235, E-mail: kommusanthosh@hotmail.com

Received February 10, 2021; Accepted February 20, 2021; Published February 27, 2021

Citation: Santhosh K (2021) Emerging Medicines in Multiple Sclerosis. J Neuroinfect Dis 12: 320.

Copyright: © 2021 Santhosh K. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

outperform the injectable treatments of the 1990s in terms of potency and tolerability. For MS, there are no approved drugs to support nerves or stimulate remyelination. However, recent evidence suggests that repurposed approved therapies, such as amiloride and phenytoin for neuroprotection and bexarotene for remyelination, could be useful. Before they can be used on a regular basis, they need to be thoroughly tested [5].

Conclusion

Multiple sclerosis is no longer regarded as incurable. Active management of the relapsing-remitting process early in the path, before disease has been gained, may provide long-term effects. The newer therapies offer physicians and patients more options, with medications that are more effective or tolerable than those used in the 1990s, but have higher toxicity. The effectiveness and safety profiles of emergent oral and intravenous agents must be determined before they can be

used in the care of MS patients. Biomarkers that can predict a patient's reaction to treatment are becoming more important as novel treatments become available. To improve therapies for halting neurodegeneration, promoting remyelination, and promoting neuronal recovery, more research is required.

References

1. Dobson R, Giovannoni G (2019) Multiple sclerosis—a review. *European J Neurol* 26: 27-40.
2. Kister I, Bacon TE, Chamot E, Salter AR, Cutter GR, et al. (2013) Natural history of multiple sclerosis symptoms. *Int J MS Care* 15:146-156.
3. Goldenberg MM (2012) Multiple sclerosis review. *Pharmacol Ther* 37:175.
4. Hart FM, Bainbridge J (2016) Current and emerging treatment of multiple sclerosis. *Am J Manag Care* 22:159-170.
5. Coles A (2015) Newer therapies for multiple sclerosis. *Ann Indian Acad Neurol* 18: S30.