

Cochrane Corner

Does Vitamin D reduce disease activity in people with multiple sclerosis? A Cochrane Review summary with commentary

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Abstract. The aim of this commentary is to discuss in a rehabilitation perspective the recently published Cochrane Review “Vitamin D for the management of multiple sclerosis” by Jagannath et al. (2018)¹ under the direct supervision of Cochrane Multiple Sclerosis and rare diseases of the CNS Group. This Cochrane Corner is produced in agreement with NeuroRehabilitation by Cochrane Rehabilitation.

1. Background

Multiple sclerosis (MS) is an immune-mediated disease of the central nervous system (CNS). It is characterized by inflammation, demyelination, axonal and neuronal loss and astrocytic gliosis in the CNS. Inadequate exposure to sunlight and lack of Vitamin D has been suggested as predisposing factors for MS (Simpson, Blizzard, Otahal, van der Mei

& Taylor, 2011). Vitamin D has the ability to control immune responses and inflammatory cytokines, and that the lack of it contributes to CNS changes associated with MS (Danner et al., 2016). MS is associated with neurological and musculoskeletal impairments, making rehabilitation an essential component of MS treatment. Rehabilitation interventions aim to improving functional activities, prevention of complications and improving quality of life. If Vitamin D is effective in altering the disability outcome, it could be prescribed to enhance rehabilitation outcome.

1.1. Vitamin D for the management of multiple sclerosis

(Jagannath V. A., Filippini G., Di Pietrantonj C., Asokan G.V., Robak E.W., Whamond L., & Robinson S.A., 2018)

¹ The abstract/plain language summary of this Cochrane Review is taken from a Cochrane Review previously published in the Cochrane Database of Systematic Reviews 2018, Issue 9. Art No.: CD008422 <https://doi.org/10.1002/14651858.CD008422.pub3> (see www.cochranelibrary.com for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and Cochrane Database of Systematic Reviews should be consulted for the most recent version of the review.

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2. Objective

The aim of this Cochrane Review was to evaluate the benefit and safety of vitamin D for reducing activity in people with multiple sclerosis.

3. What was studied and methods

The population addressed in this review was adults with MS regardless of subtypes, gender, degree of disability and disease duration. The interventions studied were all preparation of Vitamin D at any dose, frequency, duration or administration route. The intervention was compared to placebo, routine care or low dose of vitamin D. The primary outcomes studied were mean number of relapses, change in disability status, change in magnetic resonance imaging, time to first time treated relapse, quality of life and adverse event. The secondary outcomes include hospitalization, cognitive functions, bone mineral density (BMD), serum Vitamin D, physical and psychological symptoms and immunological outcomes.

4. Results

The review included 12 studies (with 933 participants). The study participants included both genders, aged between 18 and 60 years, had relapsing remitting MS and undergoing immunomodulatory therapy.

- The review shows that Vitamin D:
- Did not reduce the number of relapses (level of evidence: very low)
- Did not reduce disability status (level of evidence: very low)
- Did not reduce number of MRI gadolinium-enhancing lesion (level of evidence: very low)
- In high dose, vitamin D had more adverse effects (level of evidence: low)
- Had uncertain effect on fatigue
- In high dose, achieved adequate serum level
- Had no effect on BMD
- Had no consistent effect on immunological outcome

There was no study looking at hospitalization, cognitive functions and psychological symptoms.

5. Conclusions

The authors concluded Vitamin D appears to have no effect on recurrence of relapse, worsening of disability, MRI lesions and BMD. Effects on health-related quality of life and fatigue are unclear. At the used doses and for the treatment durations, Vitamin D appears to be safe, although available data are limited. Seven ongoing studies will likely provide further evidence that can be included in a future update of this review.

6. Implications for practice in neurorehabilitation

Vitamin D supplementation, irrespective of the form and dose used, provides no benefit to reduce disability and recurrence in patients with MS.

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Conflict of interest

The author declares no conflicts of interest.

References

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