

Dysphagia management: A crucial problem in multiple sclerosis

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Multiple sclerosis (MS) is a chronic inflammatory and neurodegenerative disease of the central nervous system in young adults [1]. Dysphagia, or swallowing difficulties, is a relatively common and potentially life-threatening symptom of MS [2-5]. In a recent meta-analysis study, Guan *et al.* [4] found that more than one-third of patients with MS were suffering from dysphagia. Dysphagia in MS may lead to dehydration, malnutrition, aspiration pneumonia and decreased quality of life, which, in turn, affect mortality risk [5-7]. There are many factors that contribute to dysphagia in this population [6].

However, data regarding dysphagia in patients with MS are limited. According to Guan *et al.* [4], “although dysphagia was recognized as a clinical finding in MS as early as 1877, it has not received enough attention yet” [p. 671]. On the other hand, the results of the studies widely discrepant due to the methods used to evaluate dysphagia such as clinical assessment, instrumental examination, or questionnaire survey, and the characteristics of the patients [4]. In Levinthal *et al.* [8]’s study, the prevalence of dysphagia was found to be 21.1% among 218 patients with MS in the United States. In a study of 101 Iranian patients with MS, Poorjavad *et al.* [5] reported that 31.7% of patients had dysphagia. The investigators have also showed that dysphagic patients had longer disease duration, more severe cerebellar dysfunction and more neurological disability (as measured by Kurtzke’s Expanded Disability Status Scale; EDSS) compared to non-dysphagic patients [5]. In a multicenter study of 1875 Italian patients with MS, 31.3% were found to have dysphagia. Similarly, dysphagic patients had longer disease duration and higher EDSS score than other patients. The overall dysphagia rate was higher in patients with secondary progressive and primary progressive MS [9]. In another Italian study, the prevalence of dysphagia was found to be 34.3% in 143 patients with MS. Dysphagia was associated with both severe brainstem impairment and severity of illness (as measured by EDSS score). In addition, patients with higher EDSS scores (> 6.5) had a risk of dysphagia approximately three times greater than patients with lower EDSS scores [7]. A recent study found that the prevalence of dysphagia was 45.3% in Turkish patients with MS [10]. In Alfonsi *et al.* [2]’s study, the rate of dysphagia in Italian patients with MS increased to 76.9%. Interestingly, in the studies of Sales *et al.* [11] and Fernandes *et al.* [12], dysphagia was found in, respectively, 58% and 90% of Brazilian patients with MS.

A variety of neurorehabilitative treatments are required to achieve the optimum results in dysphagia management. Dysphagia rehabilitation is defined as “the initiation of therapy to maximize the degree of recovery following a swallowing insult” [13, p. 370]. Early identification of dysphagia in MS is very important in terms of implementing prevention, treatment and rehabilitation activities, reduction of complications, and improving health and wellbeing [14]. Calcagno *et al.* [7] reported that compensatory strategies, including postural changes, modification of the amount, and change

in food consistency and speed of food presentation were effective to remove the risk of aspiration in the majority of the patients with MS (93.8%). Restivo *et al.* [15] indicated that the efficacy of botulinum neurotoxin type A on swallowing functions in dysphagic patients with MS. However, the investigators have pointed out potential risks in performing this treatment [15]. There are also several studies on transcutaneous electrical stimulation have been implicated in improving muscle strength among dysphagic patients with MS [13]. Alfonsi *et al.* [2] reported that 92% of patients with MS had at least one electrophysiological abnormality. A pilot study showed a potential benefit of intraluminal electrical pharyngeal stimulation in improving dysphagia in patients with MS [6]. In another pilot study, it was also found that submental sensitive transcutaneous electrical stimulation was easy to use at home and improved both swallowing coordination and neurogenic chronic oropharyngeal dysphagia related to quality of life [13]. Longitudinal randomized controlled trials are needed to confirm these results [3]. Future research will likely enhance understanding of dysphagia in MS and develop more effective rehabilitation strategies.

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