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Editorial

The role of REM sleep without atonia in the diagnosis of REM sleep behavior disorder: past errors and new challenges

In this issue of Sleep Medicine, Sasai et al. [1] have published a retrospective study showing that some subjects without REM sleep behavior disorder (RBD) do have "incidental" REM sleep without atonia (RSWA) that falls within the quantitative EMG parameters established by their group for the diagnosis of RBD (the SINBAR method) [2]. Consequently, the authors suggest that future longitudinal studies should be arranged to assess whether non-RBD subjects with isolated and objectively assessed RSWA have an increased risk of developing fully expressed RBD and/or neurodegenerative disease, or not.

First of all, it should be said that this is not the first time that subjects with isolated RSWA have been described, especially with quantitative methods for the assessment of RSWA, but it is the first study specifically arranged for this topic. Montplaisir et al. [3], in the validation study for their chin EMG quantification method (the Montréal method), already reported that a significant number of controls (approximately 10-12%) had elevated values in at least one of their chin EMG derived measures. Similarly, decreased atonia has been reported in some normal controls by means of an automated quantitative analysis of the chin EMG (Atonia Index) [4-6], especially in the oldest subjects [7].

It is also crucial to consider that this new report might generate a lively debate on the "normative" cutoff values provided by the same group for the SINBAR method [2] - a nearly 100% accuracy for the diagnosis of RBD - because it shows that finding subjects without RBD, but with RSWA, might be a more frequent event than reported earlier with this method, as established in a single study of an index group of patients [2]. Thus, a validation study on large groups of patients and controls appears to be needed because, from the methodological point of view, the establishment of cut-off values for a clinical measure in an index group of subjects is almost inevitably followed by lower values of specificity and sensitivity when applied to a separate group of subjects.

Moreover, this study did not include the flexor digitorum superficialis muscles that have been indicated to be the most sensitive muscle location for the detection of EMG activity in RBD [8]. Thus, a replication study that includes also these muscles is extremely important because it is essential to know if these muscles really need to be used in the diagnosis of RSWA or not.