Neurophysiological Tools for Small Fiber Assessment in Painful Diabetic Neuropathy (Comment Letter)

We would like to congratulate Veves et al. for their excellent review that stressed the importance of painful diabetic neuropathy diagnosis [1]. However, apart from neuropathic pain scales and skin biopsy, we believe that neurophysiological tools are also useful in the diagnostic work-up of diabetic patients with neuropathic pain complaints due to small fiber involvement. Small fiber function can be noninvasively assessed by quantitative sensory testing for thermal sensation [2], in which warm and heat pain thresholds reflect the function of C- and Aδ-fibers, respectively. This method has been proposed in the assessment of patients with diabetic neuropathy [3], but is limited by the subjectiveness of the individual’s responses [4]. In the last few years, more objective techniques have been developed for small fiber assessment. Laser-generated radiant heat pulses selectively activate Aδ and C nociceptors [5] and have been used for the early diagnosis of diabetic neuropathy [6,7]. Unfortunately, because of the imminent risk for skin lesions—especially in diabetic subjects—it’s use is not recommended in routinary basis. More recently, contact heat-evoked potentials have been introduced for small fiber evaluation without the risk of cutaneous lesions [8]. The system delivers rapidly raising heat stimuli through a thermode placed in the skin, able to evoke cerebral potentials reliably [9,10], and has been used for the study of many small fiber syndromes [9–11] with a good correlation with the density of C fibers in the superficial skin [10].

Disclosure

All authors declare no conflict of interest.

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