

The goal should instead be to improve the appropriateness of preoperative medical consultations; hence, reducing unnecessary consultations among low-risk patients while potentially increasing consultations among high-risk individuals.

Notably, the existing variability in preoperative consultation practice may actually be helpful in designing initiatives to improve the appropriateness of preoperative medical consultations. Specifically, in characterizing preoperative consultation practices at centers with superior postoperative outcomes, we may be able to identify specific practices that can be implemented more widely at other centers. As suggested in the accompanying editorial,⁵ improved prospective databases will be critical for any such effort to use existing practice variation for identifying “optimal” perioperative practices. Once there is better understanding of which patients should be appropriately referred for preoperative medical consultation, anesthesiologists must take a leadership role in developing preoperative evaluation processes that better target appropriate patients for such specialized preoperative care. The goal for these improved processes should be to simultaneously improve clinical outcomes and patient satisfaction, while reducing healthcare system costs and practice variability.

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Predictors of Analgesic Response to Sympathetic Blockade in Complex Regional Syndrome Type 1: No Conclusive Answers but Best to Get Standard Medical Therapy Right First

To the Editor:

Van Eijs *et al.* must be commended for conducting a clinically useful and informative study on the use of sympathetic

blockade in the management of complex regional pain syndrome (CRPS) type 1.¹ Despite many advances in our understanding of the pathophysiology of this condition, CRPS remains a challenging clinical problem. This study informs our practice thanks to a good methodologic process that captures a homogenous group of patients at an early stage of the condition and a thorough assessment of their clinical response to sympathetic blockade.

However, despite the merits of the study, I would not be satisfied that what was defined as “standard treatment” was sufficient before undertaking an interventional procedure. Physiotherapy and active mobilization are, of course, fundamental to treatment at all stages of CRPS but should first be supported and made possible by adequate medical therapy. Standard treatment in this study is detailed as comprising 50% dimethyl sulfoxide cream with acetaminophen and tramadol (erroneously termed nonsteroidal antiinflammatory medication in the article) supplemented to aide with physiotherapy. Gabapentin was then added after 3 weeks if analgesia was not satisfactory with this initial combination. Gabapentin is then described as being titrated to a maximum dose of only 1,800 mg/day, with 3 weeks given to assess response. Medical treatment was then considered to have failed if analgesia was insufficient at this point.

Although there is no internationally accepted standard of treatment for CRPS, there are a number of therapies that have a good supporting evidence base that should be considered before reverting to an interventional procedure. The use of acetaminophen and tramadol are reasonable first-line choices, but the use of gabapentin as described in this study is inadequate. Gabapentin can be safely titrated to a maximum dose of 3,600 mg and in practice often needs this higher dose for maximum efficacy. In addition, the 3-week limit used in this study probably is too short a time to adequately assess success or failure of gabapentin therapy, which often takes a minimum of 4 weeks to deliver maximum analgesic effect. The protocol used in this study defining standard treatment was, I believe, undertreating with medical therapy in terms of duration and dose of drug administered.

Furthermore, a number of other important therapeutic options were not considered as part of initial therapy. The use of oral steroids (*e.g.*, prednisolone) in early CRPS consistently has been shown to provide a lasting analgesic effect in CRPS,²⁻⁵ yet as demonstrated in this study, it is seldom used in clinical practice and is not included. In addition, tricyclic antidepressants are widely regarded as being fundamental in both the first- and second-line management of many neuropathic pain problems, including CRPS, either alone or in combination with anticonvulsants. Again, this important component of medical management is not included as part of standard treatment in this study.

Medical therapy is not free from side effects; however, because of the potential for significant excess morbidity with a relatively low success rate for sympathetic blockade, far

greater emphasis should be given to aggressive medical management of CRPS. The use of short courses of steroids and the combination of tricyclic antidepressants and anticonvulsants for a period of not less than 4 weeks at the maximum tolerated dose should be recommended in addition to physical therapy as standard initial management. I would agree that sympathetic blockade should be reserved for all but the most refractory cases of CRPS but believe that medical therapy must be more comprehensive than that suggested in this article.

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In Reply:

First of all, we would like to thank our colleague for his comments on our article on predictors of sympathetic blockade (SB) in the management of complex regional pain syndrome type 1.¹ In our study protocol, patients were treated with a conservative therapy protocol, as described in evidence-based guidelines.² In this treatment protocol, corticosteroids, although there is some evidence for their use, were not recommended because of limitations in the methodological quality of the available studies and lack of specifications on dose and duration of therapy. Gabapentin was chosen above amitriptyline because although the latter is a first-line choice treatment of neuropathic pain, there are no controlled studies in complex regional pain syndrome type 1 to support this choice. For gabapentin, the dose of 1,800 mg daily for a duration of only 3 weeks proved effective in a randomized, double-blind, placebo-controlled crossover study in 58 complex regional pain syndrome type 1 patients.³ The aim of our study was to determine predictors that would help us identify

patients who responded favorably to SB. The time between the index event and the SB is an important predictive factor for treatment success. Therefore, patients in our study needed to be treated as early as possible with SB in order to increase the number of patients with a positive response after SB.⁴ At the time of the initiation of the study, the interventional pain management techniques were recommended after a failed trial of 2–4 weeks with any particular therapy.⁵ If we would have treated patients with a more extensive medical therapy protocol, as suggested by Neil, this would inevitably lead to a much longer duration of the conservative treatment protocol. Moreover, diagnosis usually is made several months after the initiating event. A longer duration of conservative treatment may diminish the number of patients who would respond to SB. Nonetheless, we agree with our colleague that a rigorous and multimodal rehabilitation protocol, comprising medicinal interventions as well as physiotherapeutic modalities, is essential for a disease as involved as complex regional pain syndrome. The results of our study, which reveal limited efficacy of sympathetic blockade and lack of clear predictors for a positive response, lends further support to this assumption. Although we are convinced that the therapy provided before the sympathetic blockade was up to standard, we cannot exclude the possibility that the use of other treatment modalities before the interventional procedure might have resulted in a different patient sample participating in this study, and therefore to other outcomes.

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