More than “just do it”—fear-based exposure for complex regional pain syndrome

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Complex regional pain syndrome (CRPS) is difficult to treat, no matter what your treatment approach. Of the 25 pharmacological, interventionist, exercise, and alternative therapy approaches that have been systematically reviewed, only a few have any promise and even those “may” be helpful. Clinical guidelines reflect this underwhelming situation—recommendations to promote function, to include “physiotherapy” (whatever that might be?), and to act early are common, but so too are recommendations that reflect the expert panels’ expertise rather than published data. This is understandable when the level of evidence is so low, but it presents a clinical conundrum—should we indeed “turn people with CRPS away”?4

Fortunately, the situation is not quite that dismal—there are promising developments. One such development is presented in an article in this issue by den Hollander et al.8 Their randomized controlled trial compared “Exposure in vivo” to a “Treatment as usual” approach. Exposure was the better of the 2, and most patients had clinically important symptomatic and functional gains. There is much to like about this study—the authors check treatment fidelity and consider potentially powerful factors such as perceived credibility of the intervention and patient expectations, which were similar between treatments, and clinician expectations, which were not. That clinician expectations were much higher for Exposure is arguably worthy of more attention than den Hollander et al. give it—Gracely et al.’s elegant study in which dentists’ expectations of the probability that they were delivering an active drug markedly modulated pain relief induced by an inactive one, surely provides evidence enough that it matters. den Hollander et al.’s use of a Reliable Change Index,19 which accounts for variability of the measurement tool and allows confident conclusions about the proportion of participants who make clinically important gains, is also commendable and showed that most patients in the Exposure group improved and most patients in the Treatment as usual group did not.

That Exposure was clearly better than Treatment as usual could of course be due to how bad Treatment as usual was. Indeed, their selection of the control treatment is intriguing. It was based on a previous clinical trial and updates consolidate the focus on function not pain relief.13 That the control treatment may still reflect common clinical practice is disturbing; that it was based on a treatment that seemed effective in clinical trials but was more or less useless in real life provides an important reminder that effects vary when apparently efficacious treatments are implemented in “real-world scenarios” characterized by competing conceptual paradigms, variable clinician expectations, and logistical and administrative barriers (eg, see Refs. 14, 20).

Aside from the research team’s preliminary case series a decade ago,7 others have taken a pain exposure approach to CRPS. Over a decade ago, rumors spread of a “Ms Shinka” and her “Macedonian method” of treating CRPS. She focussed solely on getting the patient to regain use of the affected extremity, with little or no regard for the pain evoked by attempts to do so. A group of open-minded Dutch clinicians visited “the guru” and subsequently embarked on testing the approach. They established the safety of this “Pain exposure physical therapy” (PEPT) and observed improvements in pain and disability.37 They developed a protocol for a randomized controlled trial comparing PEPT to care based on the Utrecht-based Institute for Healthcare Improvement (CBO) CRPS guidelines1 and ultimately undertook the trial. They did everything “by the book” and deserve great credit for doing so, but the results of PEPT seemed underwhelming—the intention to treat analysis showed similar outcomes in the 2 groups. Closer appraisal, however, was more promising: of the 28 participants allocated to the CBO Guidelines group, only 17 actually participated and the “per protocol” analysis (as distinct from the intention to treat analysis) showed significant and clinically important differences between the groups on several outcomes.

The Exposure approach tested by den Hollander et al.7 corroborates the promise of the PEPT but it also has some important differences. Aside from being much more intensive (approximately 17 hours vs approximately 3 hours), the Exposure approach targets patients with high fear, is directed by a fear-based hierarchy of activities (something PEPT specifically avoids), and is centered on the creation of “expectancy violations.” Critical to that approach is ascertaining a patient’s personal theory of their pain—what biological mechanisms are causing it—and gleaning specific hypotheses that the patient may have about their pain. The clinician’s task then is to formulate alternative hypotheses that are grounded in current pain science knowledge. Treatment seems to involve a progression of “behavioural experiments” that serve to falsify the patient’s hypotheses and support the alternative. One can see clear similarities between this approach and approaches that center around “Explaining...
pain” (EP), which is the utilization of a range of educational and conceptual change strategies to shift a patient’s understanding of the biological processes that underpin their pain.27 Although EP has level 1 supportive evidence,27 an ongoing (although arguably achievable)26 challenge for EP is the requirement that the clinician has a high-level knowledge of modern pain science and high-level expertise in teaching the patient. Treatments are only as good as the clinician’s ability to deliver them, and this is as important a consideration for Exposure as it seems to be for EP.

How does Exposure compare? Although den Hollander compared Exposure to what seems an outdated control intervention, the reliable change data are very promising indeed. The long-term effects seem to be better than the short-term effects, which, interestingly, is also the case for Graded Motor Imaging5,26—another treatment that prioritizes the patient gaining a sound understanding of contemporary pain science—and indeed for EP itself.15 The effect sizes for Exposure are at least as good and mostly better than previously published data, regardless of the modality or setting of treatment.157 (2016) 2145–2147

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