Kinesiophobia after complex regional pain syndrome type one in a case of stroke hemiplegia and effect of cognitive behavior therapy

Sir,

Complex regional pain syndrome type one (CRPS-I) is a heterogeneous disorder that falls in the spectrum of neuropathic pain disorders.[1] More than 12% of hemiplegic patients' rehabilitation programs are often seriously hampered by the development of CRPS-I.[2] Kinesiophobia is a condition, in which a patient has an excessive, irrational, and debilitating fear of physical movement and activity resulting from a feeling of vulnerability to painful injury or reinjury.[3] Vlaeyen et al.[4] elaborated on the kinesiophobia phenomenon, defining it as a fear of movement/(re) injury, a specific fear believed to cause injury or reinjury. Since kinesiophobia is said to have a negative influence on the outcome of rehabilitation, this phenomenon ought to be taken into

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A 57-year-old woman had a cerebrovascular accident resulting in the right-sided hemiparesis on October 26, 2016. She was treated at R. G. Kar Medical College and Hospital, West Bengal, India. After 1½ months of the incident, she developed CRPS-I in her right shoulder, wrist, and hand due to incorrect handling of the upper limb after stroke. Before her admission to Occupational Therapy at National Institute for Locomotor Disabilities, Kolkata, she was under nonsteroidal anti-inflammatory drugs/analgesics but that did not improve her complaints. Consent was obtained from the patient before participation in this study. On evaluation, she had pain and swelling over shoulder joint, wrist joint, and dorsum of the hand. On range of motion assessment, she had restriction of range of motion at shoulder, wrist, and finger joints. The forearm was cold and atrophic. Pain was always present; it was provoked by trying to move the arm, or by contact with surroundings or cloth even with slightest touch. She was not following the activities prescribed for upper limb rehabilitation by the occupational therapist due to fear of increase of pain with exercise. The patient was evaluated for pain, kinesiophobia, and upper limb function before and 6 weeks after CBT. Tampa Scale of Kinesiophobia (TSK) was used to measure Kinesiophobia. Visual analog scale (VAS): A 10-cm VAS was used to evaluate the hemiplegic upper limb pain. Function of the arm, shoulder, and hand was assessed by the Disability of Arm, Shoulder and Hand (DASH) measure.

The patient received CBT incorporating (1) cognitive reconditioning, that included relaxation training, deep breathing exercises, active engagement in activities for attention diversion and guided imagery and (2) behavioral modifications of specific activities (e.g., operant treatment, pacing, graded exposure to activities, and exercises) to modify and/or reduce the impact of pain and physical and psychosocial disability and to overcome barriers to physical and psychosocial recovery. The patient received CBT for 18 sessions, a session of 1 h duration, over 6 weeks.

After 6 weeks of CBT intervention, the intensity of pain reduced from a high score of 9-4, which says that though pain did not reduce completely, there was a definite reduction of pain after the implementation of CBT. The cognitive relearning and reconditioning used for this patient might have helped her in accepting pain, developing awareness of the problem, and seeking a means of coping with frightening thoughts and mood alterations. Kinesiophobia was significantly associated with pain intensity and poor self-perceived health. Kinesiophobia reduced from an initial score of 22-14 on TSK. With the reduction of pain intensity, kinesiophobia reduced. The intervention worked by means of modifying maladaptive and dysfunctional thoughts and improving mood (e.g., anxiety and depression), leading to gradual changes in cognition and illness behavior. Thus, upper limb function in DASH scale also improved (pre-DASH score 63 and post-DASH score 54).

Although kinesiophobia is a poorly addressed problem in stroke upper limb rehabilitation, if identified and managed through CBT at an early stage, there will be a better functional recovery of the upper limb in patients with stroke hemiplegia.

**Declarations of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

**Conflicts of interest**

There are no conflicts of interest.

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**REFERENCES**

1. Chung OY, Bruehl SP. Complex regional pain syndrome. Curr Treat Options Neurol 2003;5:499-511.
2. Davis SW, Petrillo CR, Eichberg RD, Chu DS. Shoulder-hand syndrome in a hemiplegic population: A 5-year retrospective study. Arch Phys Med Rehabil 1977;58:353-6.
3. Kori SH, Miller RP, Todd DD. Kinesiophobia: A new concept of chronic pain behavior. Pain Manag 1990;3:35-43.
4. Vlaeyen JW, Kole-Snijders AM, Boeren RG, van Eek H. Fear of movement/(re) injury in chronic low back pain and its relation to behavioral performance. Pain 1995;62:363-72.
5. Crombez G, Vlaeyen JW, Heuts PH, Lysens R. Pain-related fear is more disabling than pain itself: Evidence on the role of pain-related fear in chronic back pain disability. Pain 1999;80:329-39.
6. Verbunt JA, Westerterp KR, van der Heijden GJ, Seelen HA, Vlaeyen JW, Knottnerus JA, et al. Physical activity in daily life in patients with chronic low back pain. Arch Phys Med Rehabil 2001;82:726-30.
7. Buer N, Linton SJ. Fear-avoidance beliefs and catastrophizing: Occurrence and risk factor in back pain and ADL in the general population. Pain 2002;99:485-91.

Sir,

We thank the authors immensely for their interest shown in our article “Treatment compliance and non-compliance in psychoses” [1] and more so for their incisive evaluation.

We prefer to respond to all issues raised in the letters to the editor.

We are aware of the concept of adherence and have alluded to it in the introduction. Although the word noncompliance denotes the conformity of patient behavior to treatment recommendations, it does not degrade noncompliant patients as uncooperative and untrustworthy. It is true that in the article persistence with medication use was considered central for compliance/adherence with treatment. The first component of adherence, namely, initiation of first dose of medication was not focused as the cases had already approached for treatment and were in treatment for sometime. Compliance is akin to the second component of adherence-implementation of treatment regimen. The third component, discontinuation can denote noncompliance. Hence, in clinical practice adherence and compliance are used interchangeably though academic scrutiny may not agree with it. It reminds the adage "call the rose by any name it smells the same" but it is true roses themselves vary in their fragrances.

Focus of the present study was to simultaneously study reasons for compliance and/or noncompliance so that a comprehensive list of factors could be arrived at. We have brought out the point that relapse of a symptom as a factor for compliance. It is interesting to note that...