

## **EDITORIAL**

## THE ITALIAN CONSENSUS CONFERENCE ON PAIN IN NEUROREHABILITATION PART I

## Time for a Consensus Conference on pain in neurorehabilitation

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Pain has a heavy burden in the general population and epidemiological data indicate that moderate to severe chronic pain occurs in 19% of adult Europeans, seriously affecting the quality of their social and working lives.¹ Despite the notion that pain is frequent in patients undergoing neurorehabilitation, information on its prevalence, severity, and impact in this context are largely lacking.² Among diseases that represent common target for rehabilitation care, painful conditions, such as back pain and arthritis, are the leading causes of economic and social burden,³ but the impact of pain in other neurological diseases that frequently require neurorehabilitation, such as, e.g., stroke, Parkinson's disease, and multiple sclerosis, has been only partially explored.⁴

There is a growing number of guidelines on pain management, such as those on the assessment and treatment of neuropathic pain,<sup>5</sup> but they are often blinded to the specificities and complexity of the rehabilitation setting. At variance, the scenario for guidelines on pain in neurorehabilitation is discouraging. A PubMed search launched in may 2016 with the search string "(((rehabilitation [Title/Abstract]) AND pain [Title/Abstract]) AND guidelines [Title/Abstract]" yielded 344 results. Analysis of the

titles and abstracts of these 344 items showed 24 metaanalyses or systematic reviews, mainly focusing on a single or few outcome measures, and some guidelines, expert opinions or consensus statements on orthopedic and sports medicine conditions (N.=41), osteoarthritis and rheumatologic conditions (N.=17), low back pain and neck pain (N.=24), mixed musculoskeletal conditions (N.=6), oncological pain (N.=4), pelvic pain (N.=3), geriatric pain (N.=2), mixed pain conditions (chronic non-malignant pain, N.=4; complex regional pain syndrome, N.=3; pain associated with burns, N.=2; chronic pain in people undergoing torture, N.=2; fibromyalgia, N.=1; post-operative pain, N.=1; abdominal pain, N.=1), but only few of them dealt with neurological conditions (stroke, N.=4; spasticity, N.=2; spinal cord injury, N.=2, mild traumatic brain injury, N.=1), and pain was often a secondary outcome measure.

Reasons for this paucity of information on pain in neurorehabilitation might include the higher importance given to other outcomes, such as motor, language or cognitive ones, in the context of neurorehabilitation, and the methodological issues in designing and conducting a randomized controlled trial (RCT) in rehabilitation. These issues include the difficulties in designing

true sham control conditions, in defining homogeneous patient groups, and in keeping equal duration and intensity of treatments among different centers.<sup>6,7</sup>

To overcome the scanty information on pain in the setting of neurorehabilitation, the Italian Society of Neurorehabilitation (Società Italiana di Riabilitazione Neurologica) and the Italian Society of Physical and Rehabilitative Medicine (Società Italiana di Medicina Fisica e Riabilitativa) in 2013 promoted the Italian Consensus Conference on Pain in Neurorehabilitation (ICCPN), with a panel of experts representing the main Italian scientific societies that were interested or dealt with neurology, (neuro)rehabilitation, and/or pain.<sup>6</sup> We favored the Consensus Conference approach 8 to a systematical review, because we were aware that sound RCT evidence lacks for most rehabilitative treatments of pain, and the former format allows the inclusion of evidence from experimental, observational, case-control. and other types of studies, and the opinion of experts.<sup>6</sup> The ICCPN methodology was derived from previous literature 7-9 and has been reported in detail elsewhere.6

After many months of work and the involvement of a large number of experts, the conclusions of the ICCPN will be published in two special sections of the European Journal of Physical and Rehabilitation Medicine. The first one, in the present issue, is composed by three articles and will deal with some general questions, including the diagnosis and assessment, 10 the role of sex and psychosocial factors, 11 and the pharmacological and nonpharmacological strategies in the integrated approach to pain in neurorehabilitation. 12 The second special section will be published in the next issue of the Journal and will treat questions related to specific diseases and conditions. including: stroke, multiple sclerosis, cerebral palsy, spinal cord injury, spasticity, movement disorders, motor neuron disease, chronic disorders of consciousness, dementia, oncology and neurooncology, neuroinfectious disease, neuromuscular disorders and neuropathies, deafferentation and phantom limb pain, headache, low back pain, and other nociceptive and mixed pain conditions.

We hope that the conclusions and recommendations of the ICCPN may both offer practical and useful information on how to deal with pain in neurorehabilitation, and represent the basis for future high-quality studies on this topic.<sup>6</sup>

## References

- Breivik H, Collett B, Ventafridda V, Cohen R, Gallacher D. Survey of chronic pain in Europe: prevalence, impact on daily life, and treatment. Eur J Pain 2006;10:287-333.
- Benrud-Larson LM, Wegener ST. Chronic pain in neurorehabilitation populations: prevalence, severity and impact. NeuroRehabilitation 2000;14:127-37.
- Ma VY, Chan L, Carruthers KJ. Incidence, prevalence, costs, and impact on disability of common conditions requiring rehabilitation in the United States: stroke, spinal cord injury, traumatic brain injury, multiple sclerosis, osteoarthritis, rheumatoid arthritis, limb loss, and back pain. Arch Phys Med Rehabil 2014;95:986-995.e1.
- Aprile IG, Briani C, Pazzaglia C, Cecchi F, Negrini S, Padua L. Pain in stroke patients: characteristics and impact on the rehabilitation treatment. A multicenter cross-sectional study. Eur J Phys Rehabil Med 2015;51:725-36.
- Magrinelli F, Zanette G, Tamburin S. Neuropathic pain: diagnosis and treatment. Pract Neurol 2013;13:292-307.
- Tamburin S, Paolucci S, Magrinelli F, Musicco M, Sandrini G. The Italian Consensus Conference on Pain in Neurorehabilitation: rationale and methodology. J Pain Res 2016;9:311-8.
- Làdavass E, Paolucci S, Umiltà C. Reasons for holding a consensus conference on neuropsychological rehabilitation in adult patients. Eur J Phys Rehabil Med 2011;47:91-9.
- 8. Candiani G, Colombo C, Daghini R, Magrin N, Mosconi P, Nonino F, *et al.* Manuale metodologico. Come organizzare una conferenza di consenso, 2009-2013; [Internet]. Available from: http://www.snlg-iss.it/cms/files/manuale\_metodologico\_consensus\_0.pdf. [cited 2015, Aug 10].
- Stroke Prevention and Educational Awareness Diffusion SPREAD. Ictus cerebrale: linee guida italiane di prevenzione e trattamento; [Internet]. Available from: www.spread.it. [cited 2015, Aug 10].
- Porro CA, Sandrini G, Truini A, Tugnoli V, Alfonsi E, Berliocchi L, et al. Diagnosing and assessing pain in neurorehabilitation: from translational research to the clinical setting. Evidence and recommendations from the Italian Consensus Conference on Pain in Neurorehabilitation. Eur J Phys Rehabil Med 2016;52:717-29.
- Aloisi AM, Berlincioni V, Torta R, Nappi RE, Tassorelli C, Barale F, et al. The role of gender, psycho-social factors, psichiatric comorbidity and anthropological-cultural dimensions on pain in neurorehabilitation. Evidence and recommendations from the Italian Consensus Conference on Pain in Neurorehabilitation. Eur J Phys Rehabil Med 2016;53:730.40
- 12. Tamburin S, Lacerenza MR, Castelnuovo G, Agostini M, Paolucci S, Bartolo M *et al.* Pharmacological and non-pharmacological strategies in the integrated treatment of pain in neurorehabilitation. Evidence and recommendations from the Italian Consensus Conference on Pain in Neurorehabilitation. Eur J Phys Rehabil Med 2016;52:741-52.

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