Editorial comment

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Systemic inflammation firmly documented in chronic pain patients by measurement of increased levels of many of 92 inflammation-related proteins in blood – normalizing as the pain condition improves with CBT-based multimodal rehabilitation at Uppsala Pain Center

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1 Introduction

In this issue of the *Scandinavian Journal of Pain* we publish a remarkable and highly important study-report by Eva-Britt Hysing and co-workers with Professor Torsten Gordh as senior author from Uppsala Pain Center [1]. They accept the most severely disabled chronic pain patients, often given up as intractable at other pain units in Sweden.

2 Markedly increased inflammation-related blood proteins in chronic pain patients

These patients are managed in an in-hospital period, followed-up at home, with a second in-hospital period and close follow-up for at least 1 year. About half of their patients improve with this extensive multimodal pain rehabilitation program [1]. In this article they report results of a particularly detailed biochemical screening of 92 inflammation-related blood proteins at baseline and 1 year later – I refer to their article for details, but briefly they find that many of these cytokines, chemokines, growth factors and other inflammatory markers are significantly elevated, some markedly so, compared with those in healthy blood-donors.

And even more remarkable is their finding that among the patients whose pain, fatigue, and cognitive impairments improve, most of their inflammation-related protein tend to normalize.

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3 A systemic inflammation may explain some of the symptoms of chronic pain, but are we closer to understanding the cause(s) of chronic pain?

The Eva-Britt Hysing paper clearly documents that chronic pain patients, at least the most severely suffering pain patients, have an ongoing low-grade systemic inflammation, and that the concentrations of blood inflammatory biomarkers decrease when patients feel and function better after the CBT-based pain rehabilitation program at Uppsala Pain Center. Their improving pain patients had not changed drug therapy or life-style, so clearly through a cognitive-behavioural based management, somehow the basic cause(s) of their ill-health and degree of systemic inflammation were positively influenced by the care they received in Uppsala.

As the authors state, measuring and following these inflammation bio-markers improves our understanding of some symptoms of the most severely suffering chronic pain patients, and at least they can be used as bio-markers of effects of treatment of severe chronic pain patients.

4 Chronic pain patients and patients with chronic fatigue syndrome (CFS) have similar symptoms, based on similar mechanisms?: Fatigue, widespread pain, cognitive impairment

In a recent doctoral thesis by Maria Pedersen studying CFS after Epstein-Barr virus infection (mononucleosis) one of the findings was a significant difference in high-sensitivity

CRP between those adolescents with this infection who later developed a CFS, compared with those that did not [2, 3]. These findings indicate that a low-grade systemic inflammation also may explain some of the typical “sickness-syndrome” symptoms of the CFS-patients – similar to those of the chronic pain patients.

It may be wise for those studying CFS and those studying chronic pain to join forces: similar basic causes and pathophysiological mechanisms may be hiding behind these common symptoms [4]. Although symptom-profiles and temporal developments are not equal, there may be some basically similarly deranged physiological mechanisms. Revealing these, may help improve management of both of these two groups of truly suffering patients, often difficult to help. They are both major health conditions costly to our health care systems, as well as the individual patients and their relatives.

References

- [1] Hysing E-B, Smith L, Thulin M, Karlsten R, Bothelius K, Gordh T. Detection of systemic inflammation in severely impaired chronic pain patients and effects of a multimodal pain rehabilitation program. *Scand J Pain* 2019;19:235–44.
- [2] Pedersen M. Chronic fatigue and chronic fatigue syndrome following acute Epstein-Barr virus infection in adolescents. Series of dissertations submitted to the Faculty of Medicine, University of Oslo. 2019. ISBN 978-82-8377-394-1.
- [3] Pedersen M, Asprusten TT, Godang K, Leegaard TM, Osnes LT, Skovlund E, Tjade T, Øie MG, Wyller VBB. Predictors of chronic fatigue in adolescents six months after acute Epstein-Barr virus infection: a prospective cohort study. *Brain Behav Immun* 2019;75:94–100.
- [4] Wyller VBB. Pain is common in chronic fatigue syndrome – current knowledge and future perspectives. *Scand J Pain* 2019;19:5–8.