

## Editorial

# Towards safer musculoskeletal care

G.G.M. Scholten-Peeters<sup>a,\*</sup>, B. Cagnie<sup>b</sup> and R. Castien<sup>a,c</sup>

<sup>a</sup>*Faculty of Behavioural and Movement Sciences, Vrije Universiteit Amsterdam, Amsterdam Movement Sciences Program Musculoskeletal Health, Amsterdam, The Netherlands*

<sup>b</sup>*Department of Rehabilitation Sciences, Ghent University, Ghent, Belgium*

<sup>c</sup>*Amsterdam Public Health Research Institute, Department of General Practice and Elderly Care Medicine, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands*

Dear colleagues,

(Cost)-effectiveness and safety are important pillars for policymakers, guideline developers and clinicians to recommend or advocate specific interventions. Mobilizations, manipulations and exercises are effective and often-used interventions in people with neck pain and headache [1–3]. The safety of these interventions, however, remains a discussion since years. To improve the safety of musculoskeletal management in the cervical spine, the International Federation of Orthopaedic Manipulative Physical Therapists (IFOMPT) has launched an international framework for clinicians who treat people with neck pain and headache [4,5]. The framework is informative, based on the best evidence, and aims to enhance clinical reasoning for identifying potential vascular pathologies in patients with neck pain and headaches [4,5].

The recent hypothesis is that vascular pathologies such as a dissection of the vertebral artery have the potential to mimic musculoskeletal pain in the early stage and that serious adverse events may occur when an underlying vascular pathology has not been recognized [4,5]. Treatment could subsequently aggravate this pathology leading to e.g. stroke. Therefore, a thorough patient interview based on signs/symptoms and risk factors for vascular pathology, a focused clinical ex-

amination and sound clinical reasoning is needed. Neck pain and headache are the most frequent and sometimes even only symptoms for non-ischæmic vascular pathology [6], making the distinction between vascular and musculoskeletal disorders challenging. Moreover, people with neck pain and headache are most likely to (directly) visit a physical or manual therapist. This makes adequate diagnostic reasoning primarily important for these care providers in advance of musculoskeletal interventions.

A recent survey showed that the IFOMPT framework has been implemented in ~60% of the IFOMPT-affiliated educational manual therapy programs, and ~30% will implement it in the coming two years [7]. To support the implementation of the IFOMPT framework in education and clinical practice, in this issue of the Journal of Back and Musculoskeletal Rehabilitation (JBMR) an easy applicable flowchart adapted to the Dutch standards is presented [8].

The free to read Editor's Choice article is granted to Wang et al., who assessed risk factors for early complications after arthroplasty in 119 elderly patients with a femoral neck fracture [9]. They found that higher pre-operative body mass index (BMI) and lower serum Albumin were risk factors for early complications. From previous research we know that individuals who are overweight and obese have altered serum levels of inflammatory cytokines such as tumor necrosis factor-alpha (TNF- $\alpha$ ), C-reactive protein (CRP), interleukins (IL-6, IL-18) leading to low-grade inflammation [10]. This low-grade inflammation is not only a risk factor

\*Corresponding author: G.G.M. Scholten-Peeters, Faculty of Behavioural and Movement Sciences, Vrije Universiteit Amsterdam, Amsterdam Movement Sciences Program Musculoskeletal Health, Amsterdam, The Netherlands. E-mail: g.g.m.scholten-peeters@vu.nl

for early complications after surgery but also seems to play a role in vascular pathology and complications after conservative treatment [11,12]. With the increasing prevalence of overweight and obesity [13], attention to the risk of complications after treatment is urgently needed.

In this issue of JBMR, we have developed a framework flowchart which will assist clinicians in clinical reasoning to differentiate the suspicion of a vascular and musculoskeletal disorder. Whether this will help to further decrease the risk of misdiagnosis and the number of serious adverse events in the coming years will be monitored. We will keep you informed.

## References

- [1] Hidalgo B, Hall T, Bossert J, Dugeny A, Cagnie B, Pitance L. The efficacy of manual therapy and exercise for treating non-specific neck pain: A systematic review. *J Back Musculoskelet Rehabil.* 2017 Nov 6; 30(6): 1149–1169. doi: 10.3233/BMR-169615. PMID: 28826164; PMCID: PMC5814665.
- [2] Castellini G, Pillastrini P, Vanti C, Bargerì S, Giagio S, Bordignon E, Fasciani F, Marzioni F, Innocenti T, Chiarotto A, Gianola S, Bertozzi L. Some conservative interventions are more effective than others for people with chronic non-specific neck pain: A systematic review and network meta-analysis. *J Physiother.* 2022 Oct; 68(4): 244–254. doi: 10.1016/j.jphys.2022.09.007. Epub 2022 Oct 17. PMID: 36266185.
- [3] Varangot-Reille C, Suso-Martí L, Dubuis V, Cuenca-Martínez F, Blanco-Díaz M, Salar-Andreu C, Casaña J, Calatayud J. Exercise and manual therapy for the treatment of primary headache: An umbrella and mapping review. *Phys Ther.* 2022 Mar 1; 102(3): pzab308. doi: 10.1093/ptj/pzab308. PMID: 35084039.
- [4] Rushton A, Carlesso L, Flynn T, Wing W, Kerry R, Rubinstein S, Vogel S. International Framework for Examination of the Cervical Region for potential of vascular pathologies of the neck prior to Orthopaedic Manual Therapy (OMT) Intervention: International IFOMPT Cervical Framework, IFOMPT October 2020.
- [5] Rushton A, Carlesso LC, Flynn T, Hing WA, Rubinstein SM, Vogel S, Kerry R. Position Statement: International Framework for Examination of the Cervical Region for potential of vascular pathologies of the neck prior to Musculoskeletal Intervention: International IFOMPT Cervical Framework. *J Orthop Sports Phys Ther.* 2022 Sep 13: 1–62. doi: 10.2519/jospt.2022.11147. Epub ahead of print. PMID: 36099171.
- [6] Thomas LC, Rivett DA, Attia JR, Parsons M, Levi C. Risk factors and clinical features of craniocervical arterial dissection. *Man Ther.* 2011 Aug; 16(4): 351–6. doi: 10.1016/j.math.2010.12.008. Epub 2011 Jan 20. PMID: 21256072.
- [7] Hutting N, Kranenburg R, Taylor A, Wilbrink W, Kerry R, Mourad F. Implementation of the International IFOMPT Cervical Framework: A survey among educational programmes. *Musculoskelet Sci Pract.* 2022 Jul 7; 62: 102619. doi: 10.1016/j.msksp.2022.102619. Epub ahead of print. PMID: 35839703.
- [8] Cagnie B, Castien R, Scholten-Peeters GGM. Translating the new International IFOMPT Cervical Framework into a framework flowchart for clinical practice and education. *J Back Musculoskelet Rehabil.* 2022 Nov 10. doi: 10.3233/BMR-220155. Epub ahead of print. PMID: 36404531.
- [9] Wang J, Zhao C, Yang B. Risk factors for early complications following arthroplasty in elderly patients with a femoral neck fracture. *J Back Musculoskelet Rehabil.* 2022 Oct 9. doi: 10.3233/BMR-220044. Epub ahead of print. PMID: 36278337.
- [10] Khanna D, Khanna S, Khanna P, Kahar P, Patel BM. Obesity: A chronic low-grade inflammation and its markers. *Cureus.* 2022 Feb 28; 14(2): e22711. doi: 10.7759/cureus.22711. PMID: 35386146; PMCID: PMC8967417.
- [11] Zhang L, Liu L, Wang M. Effects of puerarin on chronic inflammation: Focus on the heart, brain, and arteries. *Aging Med (Milton).* 2021 Dec 15; 4(4): 317–324. doi: 10.1002/agm2.12189. PMID: 34964013; PMCID: PMC8711227.
- [12] Moriya J. Critical roles of inflammation in atherosclerosis. *J Cardiol.* 2019 Jan; 73(1): 22–27. doi: 10.1016/j.jjcc.2018.05.010. Epub 2018 Jun 12. PMID: 29907363.
- [13] Ward ZJ, Bleich SN, Cradock AL, Barrett JL, Giles CM, Flax C, Long MW, Gortmaker SL. Projected U.S. State-Level Prevalence of Adult Obesity and Severe Obesity. *N Engl J Med.* 2019 Dec 19; 381(25): 2440–2450. doi: 10.1056/NEJMsa1909301. PMID: 31851800.