

Are people with whiplash-associated neck pain different from people with nonspecific neck pain?

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OBJECTIVE

To determine whether individuals with whiplash-associated neck pain (WAD) are different from individuals with non-specific neck pain (NSNP) upon presentation to secondary care and at long-term follow-up.

METHODS

A secondary analysis was performed on a prospective cohort study of people presenting to a Danish outpatient spinal clinic following unsatisfactory recovery from primary care management. Participants included those on the registry who had: (i) a primary complaint of persistent neck pain, (ii) recorded a response regarding past experience of whiplash trauma, and (iii) complete data sets for baseline and at least one of six or 12 month follow-up measures. Baseline clinical characteristics including pain intensity, pain frequency, previous episodes, neck disability, general health, anxiety, depression, expectations of recovery, dizziness, memory difficulties and morning stiffness were assessed at initial consultation using self-report questionnaires. Long-term follow-up measures comprised pain intensity (Numerical Pain Rating Scale (NPRS)) and neck disability (Neck Disability Index (NDI)) assessed at six and/or 12 months post-initial presentation. Mean WAD and NSNP baseline characteristics were compared descriptively and with hypothesis testing as appropriate to data distribution. Linear mixed modelling was performed to identify between-group differences in follow-up measures.

RESULTS

In total, 2578 participants with a mean age of 48.8 (SD 13.2) years and median neck pain duration of 10.5 (IQR 4.1-32.6) were included in the study. Of these, 488 (19%) and 2090 (81%) were classified with WAD and NSNP, respectively. The WAD group demonstrated greater symptom severity at baseline as evidenced by often small but statistically significant between-group differences in all measures ($p < .006$) except pain frequency ($p = .09$). Large between-group differences were evident in memory difficulties (WAD=68%, NSNP=36%, $p < .001$) and dizziness measures (WAD=67%, NSNP=45%, $p < .001$). Between-group differences increased significantly at long-term follow-up ($p < .001$), with the NSNP group demonstrating a 1.64 point greater improvement in NPRS and 11% greater reduction in NDI score compared to the WAD group. Study drop-out was substantial with only 1093 (42%) participants contributing data to follow-up outcomes.

CONCLUSION

Individuals presenting to secondary care with persistent WAD experience greater symptom severity and poorer long-term outcomes than those with NSNP.

COMMENTARY

Whilst quantifying the clinical characteristics of people with neck pain is not new, the head-to-head comparison of individuals with persistent WAD and NSNP provided by this study is unique, and helps establish whether these groups are clinically distinct. The results indicate that people with WAD experience significantly higher levels of pain, disability and associated clinical characteristics than those with NSNP. Although many between-group differences were not clinically significant, more frequent signs of functional, sensory, psychological, and cognitive impairments in the WAD group may reflect greater need for multi-domain assessment and management. For example, higher rates of anxiety and depression serve as a reminder that evaluation of psychological symptoms is important in this population. Use of measures such as the Impact of Events or Depression Anxiety Stress Scales are recommended to assist physiotherapists in identifying people with psychological symptoms, prompt referral to a general practitioner or clinical psychologist, or informing the decision to monitor those with milder symptoms (Motor Accident Authority, 2014). The presence of dizziness in 67% of WAD participants is also notable due to its association with poor recovery and indicators of sensorimotor dysfunction (Treleaven, Jull, & Sterling, 2003). Assessment of dizziness can therefore provide physiotherapists with prognostic information, as well as prompting investigation of other sensorimotor functions (e.g. cervical kinaesthetic sense and head-eye movement control), which may lead to the selection of more efficacious impairment-targeted interventions (e.g. head relocation and eye-head coordination exercises).

Over the course of secondary management, individuals with WAD improved significantly less than their NSNP counterparts. Whilst substantial drop-outs and an absence of intervention details limit the interpretation of these findings, minimal improvement in the WAD group is consistent with results of treatment trials that demonstrate difficulties in changing the clinical course of chronic WAD. It remains uncertain how clinicians should communicate unfavourable prognostic information in this context, since this might compound negative expectations and influence outcome (i.e. via the nocebo effect). Conversely, providing inaccurate expectations or information that is inconsistent to that provided by other practitioners can result in distrust of health providers and reduced willingness to seek future treatment. Instead, it may be reasonable to indicate that symptomatic improvement is likely, but may be smaller, and occur more gradually than what is expected in other conditions. Further, recent evidence suggests that benefits normally achieved through positive treatment expectation can be harnessed without deception, by educating patients about established links between mind and body (Carvalho et al., 2016). Given the current study demonstrated that people with WAD have less favourable expectations, such education might be particularly important in this group.

It should be noted that the results of this study do not infer that every individual with WAD will experience severe symptoms or an unfavourable outcome. Recovery from WAD is widely acknowledged as heterogeneous. As such, early identification of prognosis can facilitate the provision of reassurance and concerted management of people who are likely to make a rapid recovery, whilst enabling greater allocation of resources towards more detailed assessment and management of those who may not. To detect those with a less favourable prognosis, Australian WAD management guidelines recommend identifying those with high initial pain intensity, high disability, and low expectations of recovery (Motor Accident Authority, 2014). Application of a validated clinical prediction rule (Ritchie, Hendrikz, Jull, Elliott, & Sterling, 2015) to complement these indicators may further enhance certainty in prognostic decision-making.

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