Introduction

- Following a traumatic musculoskeletal injury, pain and disability are common and expected. It is unknown why some transition from acute to chronic pain.
- Central sensitisation (CS), characterised by clinical features such as secondary hyperalgesia, tactile allostheny and widespread pain, offers a potential explanation for the development of chronic pain.
- Multiple outcome measures are suggested to evaluate CS, with no gold standard proposed.
- Established measurement properties are imperative to avoid bias in findings and to have confidence in results.
- No systematic review exists evaluating the measurement properties of CS within musculoskeletal trauma.

Aim

- Identify what outcome measures are used in musculoskeletal trauma to evaluate CS.
- Investigate whether current CS measures within musculoskeletal trauma have established measurement properties.

Methods

- PROSPERO registered systematic review (CRD42018091531) with a pre-defined published protocol. Reported in line with PRISMA guidelines.
- 2 stage systematic review:
  - Stage 1: Identified all CS outcome measures within musculoskeletal trauma.
  - Stage 2: Evaluated the measurement properties of identified CS measures.
- Inclusion criteria:
  - Adults (≥16 years), who had experienced any type of musculoskeletal trauma and were evaluating CS. Any domain or measurement property as defined by COSMIN2.
- Exclusion criteria:
  - Studies investigating traumatic brain injury, burns or neurological injury.
  - Studies not written in English.
  - Multiple databases (MEDLINE, CINAHL, EMBASE, PUBMED, ZETOC), Google Scholar, grey literature and hand searching of key journals were completed.
  - 2 independent reviewers conducted searches, title and abstract and full text screening, with a third reviewer available for any disagreement. Data extraction, risk of bias and overall quality was completed independently.
  - Risk of bias was evaluated using the COSMIN risk of bias tool, with overall quality evaluated using a modified GRADE recommended by COSMIN2.

Results

- Stage 1: 86 studies were included, with 30 different CS measures identified. Majority of studies evaluated whiplash associated disorders (WAD) n=76.
- Majority of measures were quantitative sensory testing (QST) focused (figure 1)

![Figure 1. Summary of the measures found in stage 1 to evaluate CS](image)

Discussion

- Further high quality studies are required to evaluate measurement properties within musculoskeletal trauma.
- Reporting of measurement properties and appropriate statistical methods was variable and consistency in reporting is required.
- Non-English studies were excluded in this review.

Conclusion & Implications

- A wide range of measures are used to evaluate CS, with the majority of research in the WAD population.
- Further high quality research is now required to establish measurement properties in this population to be confident in using these measures in clinical practice.

References


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