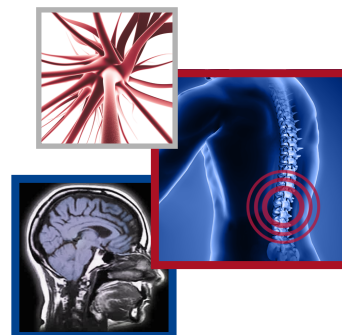


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Clinical practice guidelines for the management of patients with complex regional pain syndrome: a systematic appraisal using the AGREE II instrument

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Aim: Complex regional pain syndrome (CRPS) is a debilitating, painful condition of limbs that often arises after an injury and is associated with significant morbidity. **Materials & methods:** The Appraisal of Guidelines for Research and Evaluation (AGREE II) instrument, used to assess the quality of clinical practice guidelines (CPGs), was used to evaluate seven CRPS management guideline. **Results:** Out of the seven CPGs evaluated using the AGREE II instrument, only one from Royal College of Physicians was found to have high-quality consensus guidelines for diagnosis and management of CRPS. **Conclusion:** Future CPGs should be backed by systematic literature searches, focus on guidelines clinical translation into clinical practice and applicability to the desired patient population.

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Complex regional pain syndrome (CRPS) is a debilitating, painful condition of a limb that often arises after an injury and is associated with sensory, motor, autonomic or skin and bone abnormalities [1]. The most common presentation of CRPS is significant pain that typically begins 1 month after an insult to the limb, and may present with abnormalities such as allodynia, hyperalgesia or asymmetric differences in temperature, color, edema or sweating and/or changes in motor function [2]. Furthermore, the symptoms of CRPS may change over the course of the disease with the temperature, color, edema or sweating abnormalities sometimes reducing over time, but the pain and motor function persisting [3,4]. Symptoms are more likely to stabilize rather than resolve, evidenced by a Dutch study in which 30% of CRPS patients reported complete recovery and 54% reported stable disease after a mean follow-up of 5.8 years [3]. A population study in the Netherlands reported an incidence of 26.2 per 100,000 person years (the number of people per year) with diagnosis at a mean age of 52.7 +/- 2.20 years of age 5. In the USA, the reported incidence in Olmsted County was reported to be 5.25 per 100,000 person years [6]. Both studies report an increased incidence of CRPS in females [5,6].

Many non standardized diagnostic schemes created differently named syndromes to stratify CRPS, notably reflex sympathetic dystrophy (CRPS Type I) and causalgia (CRPS Type II), which can now collectively be better characterized as CRPS [7,8]. Harden *et al.* created the 'Budapest criteria' to diagnose CRPS, and these criteria have been well adopted and validated by practitioners [2,9]. Importantly, diagnosis by the Budapest criteria requires that

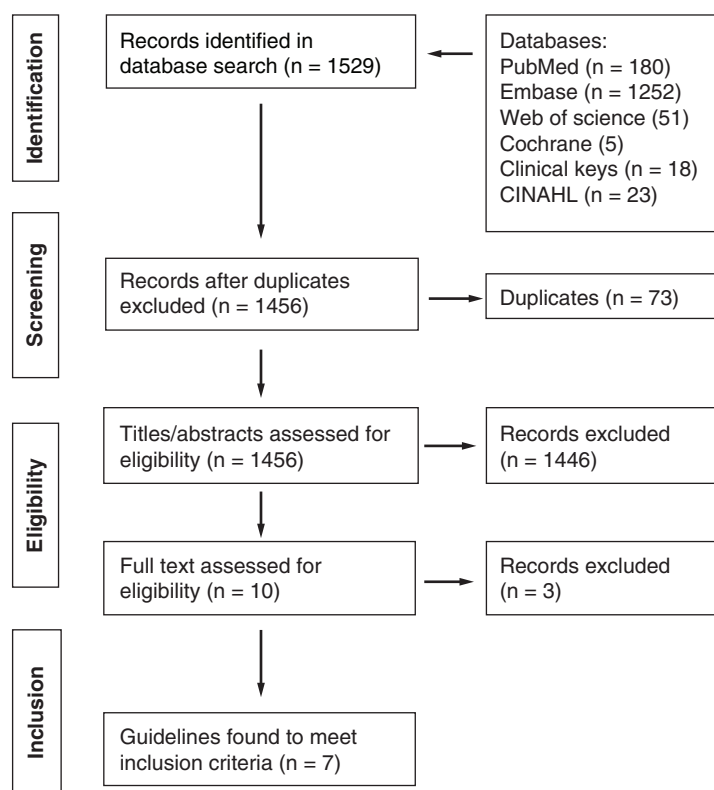


Figure 1. Identification, screening, eligibility and inclusion of studies identification screening eligibility inclusion.

no other diagnosis can better explain the patient's symptoms as CRPS is a diagnosis of exclusion. CRPS can be further divided into the more common CRPS Type 1 and less common CRPS Type 2. Both types present similarly, but a nerve lesion is present in CRPS type 2, a distinction that does not significantly affect management [10].

Difficulty in properly diagnosing and few evidence-based treatments challenge the practitioner in the treatment of CRPS. Given the complexity and variability in management of CRPS, the prognoses of patients often depend on timely diagnosis and appropriate management. Furthermore, optimal treatment of CRPS requires simultaneous interventions from an interdisciplinary team [11]. Although pain is the most common symptom, CRPS patients may also experience limb dysfunction, requiring early physical therapy and psychological distress, requiring counseling [12]. Experts in the field and professional societies have developed clinical practice guidelines (CPGs) to better diagnose and treat CRPS, but to date there has not been a comprehensive review of the quality and methodologic rigor of these CPG [12–17]. The Appraisal of Guidelines for Research and Evaluation (AGREE II) instrument was developed to systematically and objectively assess the quality of CPG, and has been externally validated as the most superior method of validation [18,19]. The purpose of this paper is to assess the quality and developmental rigor of the existing CPG for the management and treatment of CRPS in adults using the validated AGREE II appraisal tool.

Materials & methods

Search & selection

A systematic search of available literature was performed using the following databases: MEDLINE (Via PubMed), EMBASE and Web of Science, Cochrane, Clinical Keys and CINAHL. The following search terms with appropriate combinations were used to screen for related articles: ('Complex regional pain syndrome' or 'CRPS' or 'causalgia' or 'reflex sympathetic dystrophy' or 'RSD' or 'Sudeck's atrophy' and 'guideline' or 'consensus statement' or 'recommendation'). The systematic search for articles dates from the inception of the databases until 1 June 2021 and includes all clinical practice guidelines and consensus statements related to the diagnosis, treatment and overall management of CRPS. The guidelines included both internationally and nationally developed guidelines and if multiple guidelines were established by the same governing body, the most recent guideline was reviewed (Figure 1). While both Pain Practice 2002 and Pain Prac-2010 [15] discuss pathophysiology, CRPS diagnosis and treatment, Pain Practice 2002 [17] is geared more toward the in-depth pathophysiology discussion, diagnosis and clinical presentation, while Pain Practice 2010 has an extensive discussion on various treatments ranging from sympathetic

Table 1. Individual components within the six quality domains in the Appraisal of Guidelines for Research & Evaluation II instrument.

Domain 1: Scope and purpose	
1	The overall objective(s) of the guideline is (are) specifically described
2	The health question(s) covered by the guideline is (are) specifically described
3	The population (patients, public etc.) to whom the guideline is meant to apply is specifically described
Domain 2: Stakeholder involvement	
4	The guideline development group includes individuals from all relevant professional groups
5	The views and preferences of the target population (patients, public etc.) have been sought
6	The target users of the guideline are clearly defined
Domain 3: Rigor of development	
7	Systematic methods were used to search for evidence
8	The criteria for selecting the evidence are clearly described
9	The strengths and limitations of the body of evidence are clearly described
10	The methods for formulating the recommendations are clearly described
11	The health benefits, side effects and risks have been considered in formulating the recommendation
12	There is an explicit link between the recommendations and the supporting evidence
13	The guideline has been externally reviewed by experts prior to its publication
14	A procedure for updating the guideline is provided
Domain 4: Clarity of presentation	
15	The recommendations are specific and unambiguous
16	The different options for management of the condition or health issue are clearly presented
17	Key recommendations are easily identifiable
Domain 5: Applicability	
18	The guideline describes facilitators and barriers to its application
19	The guideline provides advice and/or tools on how the recommendations can be put into practice
20	The potential resource implications of applying the recommendations have been considered
21	The guideline presents monitoring and/or auditing criteria
Domain 6: Editorial independence	
22	The views of the funding body have not influenced the content of the guideline
23	Competing interests of guideline development group members have been recorded and addressed

blocks, radiofrequency ablations, phenol neurolysis, plexus brachialis block, continuous epidural infusion, spinal cord stimulation and more. Hence, it is worth including both of these studies in the discussion. Articles not available directly in English, not CRPS related, not management related or not an expert working group were excluded.

Data collection

Datapoints were extracted from each clinical practice guideline including the development body, context of publication, development method, target users, number of references and relevant sources of funding.

Quality appraisal

All selected investigators for this CRPS appraisal using the AGREE II instrument completed the online training provided by the AGREE II organization (www.agreetrust.org).

$$\text{Scaled domain score} = \left(\frac{[\text{obtained score} - \text{minimum possible score}]}{[\text{maximum possible score} - \text{minimum possible score}]} \right) \times 100$$

Four authors (initials) completed the free, online training available on the AGREE website (www.agreetrust.org) then independently evaluated the clinically available guidelines for CRPS. Using the AGREE II instrument, the authors systematically evaluated and scored these guidelines for 23 items organized into the following quality domains: scope and purpose; stakeholder involvement; rigor of development; clarity of presentation; applicability and editorial independence (Table 1). For each of the 23 items, the authors assigned a score between 1 and 7. A score of 1 was assigned if the guideline provided no relevant information toward the item. A score of 7 was assigned if the guideline provided exceptional quality of reporting and all criteria had been met. From the sum of the authors' scores for each item in a quality domain, an overall domain quality score was calculated for each of the

six quality domains using the following formula:

$$\text{Scaled domain score} = \left[\frac{(\text{obtained score} - \text{minimum possible score})}{(\text{maximum possible score} - \text{minimum possible score})} \right] \times 100$$

The AGREE II system provides no formal recommendations for how to interpret scores. Prior to analysis, the authors used previous AGREE II analyses to determine how to interpret CRPS guidelines [20,21]. At a maximum of 100, an average domain score of 80 or greater was deemed high quality. The overall quality of a CPG was determined as follows: 'high' if the average >80% ; 'average' if >60% ; and 'low' if <60%.

Data analysis

To assess agreement and scoring consistency between the four reviewers, another independent author performed a two-way random effects intraclass correlation coefficient analysis (ICC) with a 95% CI using Python 3.8 and the pingouin analytical profile index . ICC was considered as poor (<0.20), fair (0.21–0.40), moderate (0.41–0.60), good (0.61–0.80) or very good (0.81–1.00) per ICC classification previously established [22].

Results

Results from the initial literature search yielded 1529 articles. [Figure 1](#) demonstrates the literature review process utilized in this study. Articles were then evaluated based on title and summary abstract to determine inclusion. After eliminating duplicates, 1456 were screened for eligibility. Articles not available directly in English, not CRPS related, not management related or not an expert working group were excluded. Seven guidelines were evaluated for assessment under AGREE II practices: Pain Medicine [12], Clinical Journal of Pain [13], European Journal of Pain [14], Royal College of Physicians (RCP) [23], Pain Practice 2010 [15], BioMed Central Neurology [16], Pain Practice 2002 [17] ([Table 2](#)). Among these, only the RCP CPG was deemed as 'high quality', while the remaining six CPGs were categorized as either 'average' or 'low' quality ([Table 3](#)). All CPGs scored highly in the domains of 'scope and purpose' (82.3% ± 9.3) and 'clarity and presentation' (83.72 ± 8.44). Domains that generally scored lower among CPGs evaluated included the other four domains, 'stakeholder involvement' (67.85% +/- 19.14), 'rigor of development' (59.59% +/-19.99), 'applicability' (63.84% +/- 15.86) and 'editorial independence' (55.05% +/- 28.15). ICCs to assess interrater reliability for each of the six AGREE II domains can be found in [Table 4](#). The guidelines that scored poorly overall (and scored the lowest within specific items in each domain) were as follows: Clinical Journal of Pain [13] (Domain 2, item 5; Domain 3, item 7; Domain 6, item 22 and 23), Pain Practice 2010 [15] (Domain 3, item 14), Pain Practice 2002 [17] (Domain 6, item 23). Overall, there was high consistency between the four independent reviewers. In five of the six AGREE II domains, ICC was classified as 'very good' interrater reliability, defined by an ICC of 0.81 or higher. In Domain 4 (clarify of presentation), scores between the four independent reviewers received an ICC score of 'good' (0.73).

Discussion

CRPS is an uncommon and challenging condition to diagnose and treat. Both CRPS type I and type II have different pathophysiologic origins but are clinically treated the same. The condition may also mimic more common conditions seen by physicians which further complicates the diagnosis of exclusion. Management of CRPS typically begins with primary care and requires timely diagnosis and appropriate referrals to multidisciplinary teams. Once diagnosed, treatment of CRPS requires simultaneous interventions from an interdisciplinary team, often requiring intervention from neurology, rheumatology, physical therapists, pain specialists, orthopedic surgeons, physiatrists and psychological counseling [11,24]. Furthermore, timely diagnosis and treatment is needed to minimize the development of secondary conditions. Left untreated, patients with CRPS are at risk of developing complications from limb disuse and mental illness from living with chronic pain [25].

CPGs help clinicians provide standardized and cost-effective care while reducing adverse events [26]. However, CPGs vary considerably in overall quality and applicability of recommendations, necessitating that clinicians evaluate the CPG prior to implementation. To assess the quality of existing CPGs, this paper methodically assesses CRPS CPGs using the AGREE II tool. Seven guidelines were identified to evaluate across six AGREE II domains to identify high quality CPGs. It is worth noting that CPGs discussed here range over a 20-year period (1998–2019) while the AGREE II instrument was published in 2010. Of the seven CPGs, Pain Medicine [12], RCP [23] and European Journal of Pain [14] were published after the AGREE II instrument whereas Pain Practice 2002 [17],

Table 2. Guideline development and methodology.

Journal	Society/authors	Pub. Year	Country	Development method	Developers	Target user	# of References	Funding source	Ref.
Pain Medicine	American Academy of Pain Medicine	2013	USA	Systematic literature review, expert panel	PM&R; physical therapy; pain specialists; rehab specialists; anesthesiologists	Healthcare practitioners	343	Reflex Sympathetic Dystrophy Syndrome Association; Dutch Alliance for Improvement of Paincare funded by Pfizer Inc.	[12]
Clinical Journal of Pain	Stanton-Hicks <i>et al.</i>	1998	USA	Expert Consensus	Pain specialists	Healthcare practitioners	74	Not reported	[13]
European Journal of Pain	European Pain Federation Task Force	2019	Europe	Four-stage consensus challenge process, Expert panel	Pain specialists; neurologists; PM&R; psychologists; anesthesiologists; general and hand surgery	Healthcare practitioners in Europe	30	European Pain Federation	[14]
Royal College of Physicians	Royal College of Physicians	2018	UK	Expert Panel	General practitioners, pain specialists; occupational therapists; orthopedic specialists; psychiatrists; PM&R; physiotherapy specialists; neurosurgeons; emergency medicine physicians; plastic surgeons; hand therapists; sports and exercise medicine specialists; podiatrists; rheumatologists; radiologists; vascular surgeons; neurophysiologists; patients and their families	Patients and healthcare providers for CRPS broken down by specialty interest	148	Royal College of General Practitioners, the Royal College of Physicians, the Faculty of Pain Medicine of the Royal College of Anaesthetists, the Royal College of Occupational Therapists, the British Orthopedic Association, the British Pain Society, the British Psychological Society, the British Society of Rehabilitation Medicine, the Chartered Society of Physiotherapy, the Directorate of Defense Rehabilitation, the Physiotherapy Pain Association, the Society of British Neurological Surgeons, the Royal College of Emergency Medicine, the British Association of Plastic, Reconstructive and Aesthetic Surgeons, the Faculty of Occupational Medicine, the British Society for Surgery of the Hand, the British Association of Hand Therapists and the Pain Relief Foundation, The Association of Orthopedic Practitioners, the Faculty of Sport and Exercise Medicine and the College of Podiatry	[23]
Pain Practice 2010	World Institute of Pain	2010	North America & Europe	Expert panel	Anesthesiologists; pain specialists; neurologists	Initially for Dutch speaking pain physicians, now translated for US/international pain specialists	102	Dutch Government Grant	[15]

CRPS: Complex regional pain syndrome; PM&R: Physical medicine and rehabilitation; Pub.: Publication.

Journal	Society/authors	Pub. Year	Country	Development method	Developers	Target user	# of References	Funding source	Ref.
BioMed Central Neurology	Perez <i>et al.</i>	2010	Netherlands	Expert panel	Anesthesiologists; rehab specialists; neurosurgeons; rheumatologists; plastic surgeons; neurologists; insurance medicine specialists; general physicians	Multidisciplinary healthcare providers	26	None	[16]
Pain Practice 2002	World Institute of Pain	2002	USA	Expert panel	Not reported	Not reported	120	Medtronic Inc.	[17]

CRPS: Complex regional pain syndrome; PM&R: Physical medicine and rehabilitation; Pub.: Publication.

Journal	Domain 1 Scope and purpose %	Domain 2 Stakeholder involvement %	Domain 3 Rigor of development %	Domain 4 Clarity and presentation %	Domain 5 Applicability %	Domain 6 Editorial independence %	Average domain scores	Overall quality	Ref.
Pain Medicine	83.33	62.5	63.54	81.9	84.37	62.5	73.02	Average	[12]
Clinical Journal of Pain	80.5	45.8	34.37	72.22	51.04	4.16	48.01	Low	[13]
European Journal of Pain	87.5	88.88	54.16	90.28	60.42	79.17	76.73	Average	[14]
Royal College of Physicians	97.22	98.61	93.23	98.61	87.5	83.33	93.08	High	[23]
Pain Practice 2010	68.06	52.78	54.17	79.17	54.17	52.08	60.07	Low	[15]
BioMed Central Neurology	75.0	66.66	75.52	81.94	47.92	70.8	69.64	Average	[16]
Pain Practice 2002	84.7	59.7	42.19	81.94	61.46	33.33	60.55	Low	[17]

Agree II domain	Intraclass correlation coefficient	95% CI
Scope and purpose	0.931	0.778–0.987
Stakeholder involvement	0.824	0.433–0.966
Rigor of development	0.926	0.761–0.986
Clarity of presentation	0.734	0.144–0.949
Applicability	0.8	0.356–0.962
Editorial independence	0.88	0.612–0.977

Pain Practice 2010 [15], BioMed Central Neurology [16] and Clinical Journal of Pain [13] were published before the AGREE II instrument. In light of this timeframe, the average domain scores of all three CPGs published after the AGREE II instrument came out in 2010 was higher than the average domain score of those CPGs published prior to the AGREE II instrument.

Domain 1 (scope and purpose) evaluates how clearly a guideline describes its objective, health questions and target population. Overall, all CPGs were rated 'high quality' in this domain and RCP scored highest at 97.22% ± 6.1 [23]. For CRPS, guidelines need to clearly outline how to diagnose CRPS as the initial diagnosis is often a challenge and may also delay treatment. The CPGs tended to perform worse on item 3, which evaluates how well the target population is described. In these CPGs, the target population was simply described as patients with CRPS, but the age, disease severity and comorbid conditions of this population was not described. In the future, CPGs could better describe how management may differ depending on patient characteristics, which may influence management. Of note, the RCP guideline describes how management changes depending on disease severity and comorbidities. This allows readers to provide more targeted treatment for patients with CRPS [23].

Domain 2 (stakeholder involvement) evaluates how a guideline describes the development group for the CPG, views of the target population and target users. Most CPG were rated as 'high quality' in domain 2 as seen in Table 3, with RCP guideline scoring the highest at 98.61 ± 8.4 . Domain 2 is of particular importance for CRPS guidelines because optimal treatment often requires a multidisciplinary team including primary care, pain specialists, rehabilitation therapy and psychological therapy [11,23,24]. Therefore, input from these specialists are integral in describing the management of CRPS and should be present for the development of CRPS guidelines. Including the public and patients in the development process has been shown to produce guidelines that are more relevant and understandable while also addressing public concerns [26]. However, only three CPGs sought patient feedback on guidelines before publishing: European Journal of Pain, RCP and Pain Practice 2002 [14,17,23]. Furthermore, including patients in the development process is readily available through patient organizations or recruitment and offers the important patient perspective in CPGs.

Domain 3 (rigor of development) is the strongest predictor for overall guideline quality [27]. Overall, the CPGs as a whole performed second worst in this domain with only three CPGs rated as 'high quality': Pain Medicine, RCP and BioMed Central Neurology [12,16,23]. The RCP scored the highest at 93.23 ± 9.5 [23]. This domain evaluates the methodology utilized to generate guidelines from medical evidence, including how the evidence is found, selected and appraised. High quality CPGs not only perform systematic literature reviews to ensure the guidelines are informed by all available evidence, but also conduct an evidence appraisal. Evidence appraisal is an important step in developing high quality CPG and can be achieved by externally validated appraisal methods such as the GRADE system.

Domain 4 (clarity and presentation) evaluates how well a CPG communicates recommendations. This domain reflects the overall usability of a CPG in clinical practice, considering structure, formatting and ambiguity. On average, all the CPGs performed most strongly in this domain with a cumulative average score of 83.73 ± 8.44 . CPGs increased clarity and presentation by listing key recommendations separately, providing a list of recommendations or outlining a flow diagram to aid in management.

Domain 5 (Applicability) evaluates how a CPG's recommendations can be realistically implemented in clinical practice. This domain considers how CPG authors identify and address barriers to recommendation implementation, such as required patient resources and facilities for treatment. RCP performed the highest at 87.50 ± 8.2 [23]. RCP uniquely provided a list of centers with an interest in CRPS treatment, however this list was limited to Europe. Additionally, the CPGs consistently performed worse in how cost of treatment was considered and addressed, which is a trend across CPGs, despite the fact that chronic pain conditions are financially costly to the individual [28,29]. Overall, the consideration of barriers in CRPS management is especially important because inadequate treatment of the disease may create barriers in a population that likely already experiences a higher financial burden.

Domain 6 (editorial independence) evaluates if the funding body influenced the CPG and if competing interests have been identified. All CPGs performed most poorly in this domain, averaging at 55 ± 28.15 . The CRPS CPGs require greater clarity in this domain. Appropriate reporting of funding and competing interests is important in communicating how external factors influenced the development of the CPG. Additionally, CPGs had the greatest variability in this domain with a standard deviation of 28.15. This variability has been observed in other AGREE II analyses and may be caused by reporting of funding outside of the CPG itself [21,30]. Overall, appropriate reporting of funding and competing interest increases transparency in CPG development and provides users the information needed to inform clinical decisions.

Recommendations

Through comprehensive review of the eight available CPGs, the authors and independent reviewers have compiled a set of key clinical management points for management of CRPS. Table 5 summarizes the diagnostic and treatment recommendations for management of CRPS. Table 6 lists the Budapest criteria [2]. For completion purposes, it is worth noting that a third type of CRPS has been proposed for patients not meeting Budapest Criteria called CRPS not otherwise specified [9]. More recently, The Valencia consensus-based adaptation of the IASP CRPS diagnostic criteria published changes concerning 3 areas: diagnostic parenting under ICD-11; CRPS subtypes; and the diagnostic procedure [31]. Listed under the CRPS subtypes, in addition to CRPS I, II, not otherwise specified, there is now 'CRPS with remission of some features' for patients previously documented as having fully met CRPS criteria but who currently display CRPS features insufficient to fully meet the diagnostic criteria.

Table 5. Key recommendations.

Diagnosis	Diagnosis of exclusion; based on clinical examination and when patient meets Budapest criteria (Table 6); however patients with clinical condition similar to CRPS but without meeting Budapest criteria are diagnosed as CRPS not-otherwise specified
Symptoms of CRPS	Sensory – hyperesthesia, allodynia, hyperalgesia Vasomotor – temperature asymmetry, skin color changes or asymmetry Sudomotor/edema – edema, sweating changes Motor/trophic – decreased range of motion, motor dysfunction, trophic changes
Nonpharmacological treatment of CRPS	Patient education and support Physical and vocational rehabilitation (exercises and strengthening, posture control) Psychological interventions (mirror visual feedback, relaxation techniques)
Pharmacological treatment of CRPS	Drugs with efficacy in neuropathic pain (tricyclic antidepressants, anticonvulsants, NSAIDs, analgesic cream, ketamine, opioids), neridronate [32]
Interventional pain management of CRPS	Interventional pain procedures (dry needling, lumbar sympathetic, stellate ganglion, Bier block, brachial plexus block, spinal cord stimulator, intrathecal therapy)
CRPS: Complex regional pain syndrome; NSAIDs: Non-steroidal anti-inflammatory drugs.	

Table 6. Budapest criteria.

<p>a) The patient has continuing pain which is disproportionate to any inciting event</p> <p>b) The patient has at least one sign in two or more of the categories</p> <p>c) The patient reports at least one symptom in three or more of the categories</p> <p>d) No other diagnosis can better explain the signs and symptoms</p>	
Category	
1. Sensory	Allodynia (to light touch) and/or temperature sensation and/or deep somatic pressure and/or hyperalgesia (to pinprick) and/or hyperesthesia
2. Vasomotor	Temperature asymmetry and/or skin color changes and/or skin color asymmetry
3. Sudomotor/edema	Edema and/or sweating changes and/or sweating asymmetry
4. Motor/trophic	Decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair/nail/skin)

Limitations

The Agree II instrument is used to evaluate the quality and methodologic rigor of a clinical practice guideline. However, the accuracy and interpretation of medical evidence used to develop the guidelines are not directly investigated and should be considered independently from the AGREE II analysis. The AGREE II instrument does investigate the methodology utilized to generate guidelines from medical evidence in domain 3 (rigor of development). Domain 3 is critical in evaluating how evidence informs guidelines but is assigned equal weight as other domains in the AGREE II instrument. For a guideline, the scores of other domains may generate a high overall score in the analysis despite poor methodological rigor. Additionally, domain 3 (rigor of development) and domain 6 (editorial independence) are more strongly associated with effective guidelines, but also considered equally. Another limitation is found in how each domain is scored from subjective evaluations by four independent reviewers. Although statistical techniques were used to assess variation, the evaluations are informed by subjective reviewer interpretation and individual understanding of research methodology. At last, the literature search likely missed some applicable guidelines as the search excluded articles not available in English and guidelines not indexed in the searched databases.

Conclusion

Based on the AGREE II instrument, there is only one available high quality consensus statement on the diagnosis and management of CRPS and it is one from RCP. Low scores in domains such as ‘stakeholder involvement’, ‘rigor of development’, ‘applicability’ and ‘editorial independence’ suggest weaknesses in the development process, targeting user, generating guidelines from medical practice, implementation in clinical practice and proper identification of competing interests. Future guidelines should be backed by systematic literature searches, focus on guidelines clinical translation into clinical practice and applicability to the desired patient population.

Summary points

- All clinical practice guidelines (CPGs) studied were rated ‘high quality’ in domain 1 (scope and purpose) but Royal College of Physicians (RCP) scored highest as they clearly defined how to diagnose complex regional pain syndrome (CRPS), described the target population, including age, disease severity and comorbid conditions of this population.
- Most CPG were rated as ‘high quality’ in domain 2 (stakeholder involvement) with RCP guideline scoring the highest as they described treatment with an emphasis on multidisciplinary team including primary care, pain specialists, rehabilitation therapy and psychological therapy and also sought patient feedback.
- Overall, the CPGs as a whole performed second worst in this domain 3 (rigor of development), again with RCP scored the highest.
- All CPGs studied did strongly in domain 4 (clarity and presentation) but providing clarity and presentation, listing key recommendations separately, providing a list of recommendations or outlining a flow diagram to aid in management.
- RCP CPG scored the highest in domain 5 (applicability) which provides guidance on how recommendations can be realistically implemented as they uniquely provided a list of centers with an interest in CRPS treatment.
- Out of the seven CPGs evaluated using the AGREE II instrument, only one from RCP was found to have high-quality consensus guidelines for management of CRPS.

Financial & competing interests disclosure

The authors have no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

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