

Complex Regional Pain Syndrome: Navigating Diagnostic Complexities

Introduction

Complex Regional Pain Syndrome (CRPS) presents significant diagnostic challenges due to its variable clinical presentation. Despite established **Budapest criteria** as the diagnostic standard, independently **assessed CRPS diagnoses using Budapest criteria**. We examined real-world application remains inconsistent. This study examines **referral patterns, diagnostic workup, and demographic data**. Inter-rater reliability was calculated using **Cohen's kappa to assess diagnostic agreement** among clinicians. Patient records were reviewed for documentation of Budapest criteria, nerve injuries, and diagnostic testing. **validity of CRPS diagnoses and the identification of potentially treatable nerve conditions.**

Material & Methods

Results

The median time from initial CRPS mention to nerve clinic referral was **3.9 years**, with Budapest criteria documented in **only 26% of patients** pre-referral. Notably, **33% of patients labeled with CRPS type I had identifiable nerve injuries**. Among all cases, **42% were confirmed as CRPS** by all raters, while 26% were determined not to have CRPS, and **32% showed inconsistent agreement**. Inter-rater reliability varied considerably ($\kappa=0.32-0.72$). Orthopedic Surgery was the primary referral source, with diagnostic workups typically including X-ray, EMG, and MRI studies in most patients.

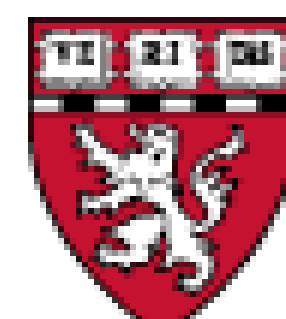
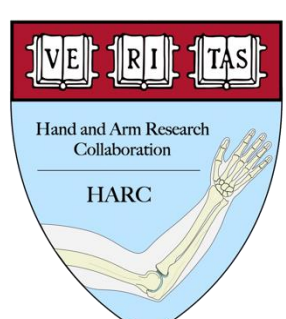
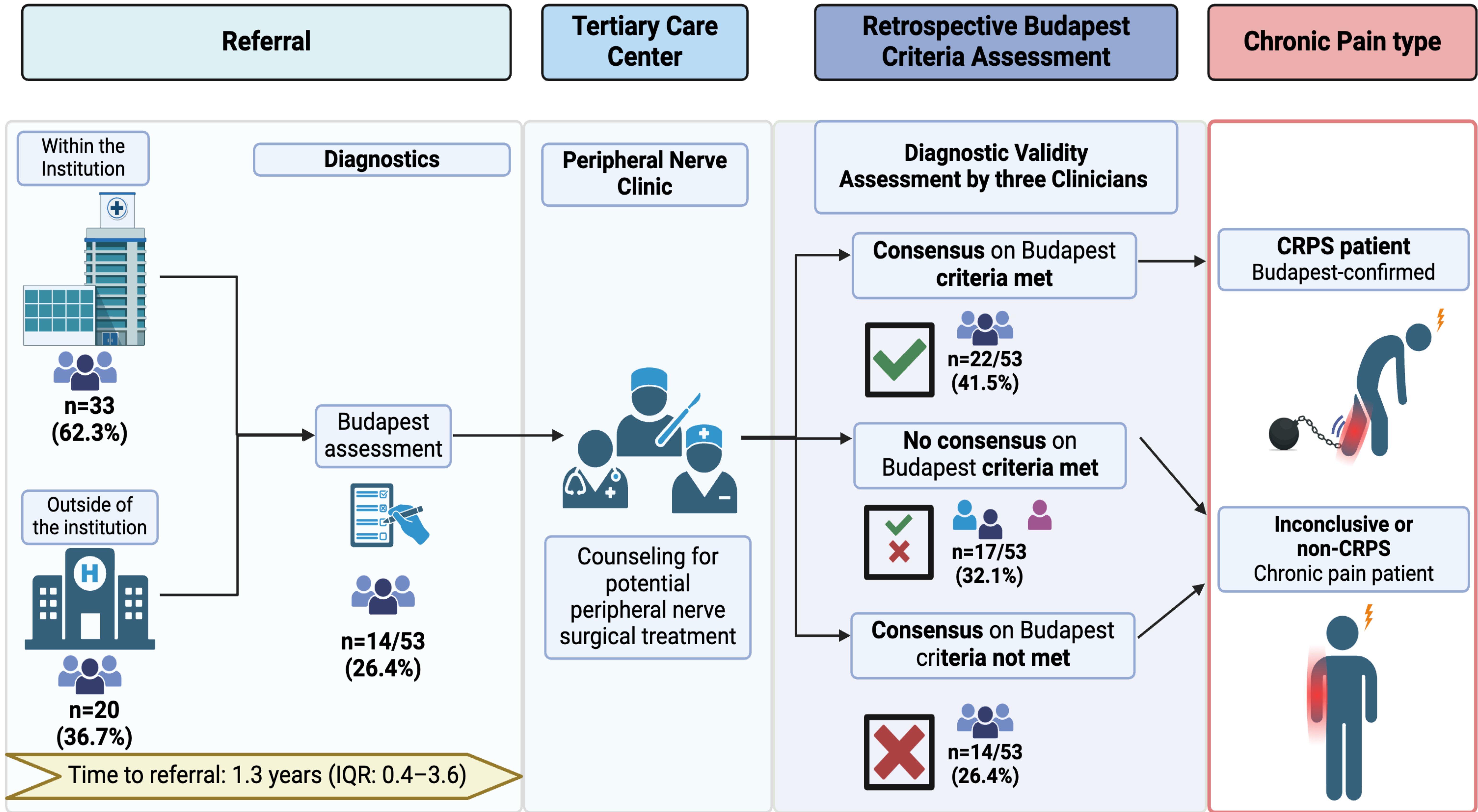
Discussion and Conclusion

Our findings reveal notable gaps in the application of standardized diagnostic criteria for CRPS. The high rate of nerve injuries identified in patients labeled with CRPS type I suggests potential misclassification and missed treatment opportunities. Variable inter-rater reliability, even among experienced clinicians, underscores the inherent challenges in CRPS diagnosis. **We recommend implementing systematic documentation of Budapest criteria, comprehensive nerve injury assessment, standardized evaluation protocols, and regular diagnostic reassessment to improve diagnostic accuracy and patient care.**

Most patients referred with a CRPS diagnosis did not meet the criteria across all raters, highlighting the need for improved diagnostic assessment. These findings emphasize the importance of thorough evaluation for potentially treatable nerve conditions before establishing a CRPS diagnosis. Future efforts should focus on standardizing the diagnostic approach and ensuring appropriate classification of pain syndromes.

References

- Shim H, Rose J, Halle S, Shekane P. Complex regional pain syndrome: a narrative review for the practising clinician. *BJA: British Journal of Anaesthesia*. 2019;123(2):e424.
- Classification of Chronic Pain, Second Harden RN, Bruehl S, Perez RSGM, et al. Validation of proposed diagnostic criteria (the "Budapest Criteria") for Complex Regional Pain Syndrome. *Pain*. 2010;150(2):268.
- Terkelsen AJ, Birklein F. Complex Regional Pain Syndrome or Limb Pain: A Plea for a Critical Approach. *J Pain Res*. 2022;15:1915.
- Goebel A, Birklein F, Brunner F, et al. The Valencia consensus-based adaptation of the IASP complex regional pain syndrome diagnostic criteria. *Pain*. 2021;162(9):2346



**HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL**