

Predicting outcome in patients with carpal tunnel syndrome receiving conservative management as part of a randomised control trial (Injection versus Night Splints in Carpal Tunnel Syndrome)

Claire Burton, Ying Chen, Danielle Van der Windt

Keele University, United Kingdom

Abstract

Background

Carpal tunnel syndrome (CTS) is a symptomatic compression neuropathy of the median nerve at the level of the wrist. Primary care treatments of mild to moderate CTS include local corticosteroid injections and night splinting. The aim of this study was to investigate the value of candidate prognostic factors, available from a randomised clinical trial cohort (INSTINCTS), in predicting outcome.

Methods

Previous work including a systematic review and clinical advisory group was used to identify candidate predictors. Multiple linear regression with backward step selection of variables was used to identify the combination of factors most strongly associated with the future course of symptoms and functional limitation. The event per variable rate was considered and missing data handled using multiple imputation-chained equations.

Results

234 patients were followed over 6 months. Missing data (predictors and outcomes) were imputed for 96 (37%) of participants. 24 candidate predictors were considered for the prediction model. The final multivariable model included the sum Boston Carpal Tunnel Questionnaire, baseline symptom severity and associated symptoms of the neck, shoulder or elbows (adjusted R^2 0.31).

Discussion

The outcome of CTS patients presenting at baseline in this trial population is difficult to predict and mainly associated with the baseline level of severity. It is likely that the trial population represented a homogenous group of patients and a large variability in improvement was unlikely given patients with severe symptoms were excluded from the trial. Patients who do not respond to initial conservative treatment measures should be considered for referral for surgery.

Patient and Public Involvement (PPI)

Whilst patients were not directly involved in this sub-study, they were involved in the inception, planning and analysis of the main trial (Injection versus night splints for carpal tunnel syndrome - INSTINCTS).