Results Availability for Analgesic Device, CRPS and Post-Stroke Pain Trials: Comparing the RReADS, RReACT and RReMiT Databases

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ABSTRACT

Evidence-based medicine rests upon the assumption that treatment recommendations are robust, free from bias, and include results of all randomized clinical trials. The Repository of Registered Analgesic Clinical Trials (RReACT) search and analysis methodology was applied to create databases on complex regional pain syndrome (CRPS) and central post-stroke pain (CPSP), and adapted to create the Repository of Registered Analgesic Device Studies (RReADS) databases for trials of spinal cord stimulation (SCS), repetitive transcranial magnetic stimulation (rTMS), and transcranial direct current stimulation (tDCS). We identified 34 CRPS trials, 18 CPSP trials, 72 trials of SCS, and 92 trials of rTMS/tDCS. Irrespective of time since study completion, 45% of eligible CRPS and CPSP trials, and 46% of eligible SCS and rTMS/tDCS trials, had available results (peer-reviewed literature, results entered on registry, or grey literature); peer-reviewed publications could be found for 38% and 39%, respectively. Examining almost 1,000 trials across a spectrum of painful disorders (fibromyalgia, diabetic painful neuropathy, post-herpetic neuralgia, migraine, CRPS, CPSP) and types of treatment, no single study characteristic consistently predicts unavailability of results. Results availability is higher 12 months after study completion, but remains below 60% for peer-reviewed publications. Recommendations to increase results availability include: supporting organizations advocating for transparency, enforcing existing results reporting regulations, enabling all primary registries to post results, stating trial registration numbers in all publication abstracts, and reducing barriers to publishing 'negative' trials. For all diseases and treatment modalities, evidence-based medicine must rigorously adjust for the sheer magnitude of missing results in formulating treatment recommendations.