

Adherence to focal spasticity guidelines: A systematic review

Sutherland E^{1,2}, Ashford S³, Berwick S⁴, Fheodoroff K⁵, Hoare B⁶, Hill B^{1,2}, Hastings-Ison T⁷, Singer B⁸, Williams G^{1,2}.

¹Epworth Healthcare, ²University of Melbourne; ³London North West University Healthcare NHS Trust; ⁴Schon Klinik Vogtareuth & Ludwig-Maximilians-University of Munich; ⁵Gaital-Klinik; ⁶La Trobe and Monash Universities; ⁷Royal Childrens' Hospital; ⁸Edith Cowan University;

Introduction

Focal muscle spasticity is a disabling impairment, affecting as many as two-thirds of people with a neurological condition. Level 1 evidence exists for the use of botulinum toxin (BoNT-A) to reduce spasticity, and this is stipulated in twenty-five international management guidelines. However, given that intramuscular BoNT-A does not always translate to improved functional outcomes, the association between other guideline-endorsed aspects of care and patient goal attainment remains unclear in the literature.

Aims

The purpose of this review is to determine the extent to which randomized controlled trials (RCT) evaluating functional outcomes following BoNT-A injection adhere to the current guidelines for the management of focal spasticity.

Methodology

Seven electronic databases were searched. RCT inclusion, data extraction and quality assessment was performed independently by two reviewers in accordance with the PRISMA guidelines. Inclusion criteria:

1. RCT published since 2010
2. Focus on focal spasticity
3. Includes BoNT-A
4. Randomise a physical intervention for the upper or lower limb, or
5. The primary aim relates to the activity and participation domain of the International Classification of Function

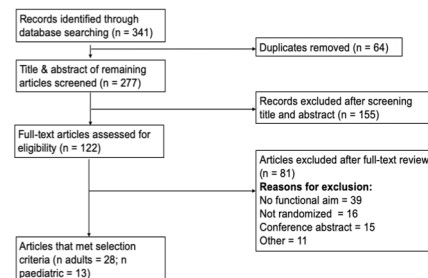


Figure 1: PRISMA flow diagram.

Results

Item	Adult (n=28)		Paediatric (n=13)	
	Yes	No	Yes	No
Principles of management				
SMART goal setting	5 (18%)	23	4 (30%)	9
Use of MTS	5 (18%)	18	5 (18%)	8
Use of MAS	23 (82%)	3	10 (36%)	3
Active function assessed	26 (93%)	2	10 (36%)	3
Education provided	1 (4%)	27	4 (31%)	9
Short term <6 weeks clinical review	23 (82%)	5	8 (62%)	5
Long term >6 months clinical review	4 (14%)	24	2 (15%)	11

Table 1: Data extraction.

Forty-one RCTs were included. Each study was evaluated against the 22 management principles synthesized from the twenty-five international guidelines. SMART goal setting was rarely included (18% of adult studies). Not all studies included a measure of focal spasticity, nor a measure of active function despite an having an aim targeting active function. Only 5 (12%) of RCTs included patient education. Despite the long term nature of spasticity management, only 14% of adult studies measured outcomes beyond 6 months. 13 RCTs (32%) incorporated a focal spasticity guideline in their methodology. One RCT used the CERT/TIDIER guidelines. Average modified PEDro score was 9.8 (range 5-12).

Conclusions

Adherence to international guideline recommendations for focal spasticity management is low. Stronger guideline adherence, prioritizing recommendation importance or understanding barriers to guideline implementation could help to focus future research towards key areas of spasticity management that have the greatest impact on functional outcomes.