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**EFFICACY & SAFETY OF ULTRASOUND GUIDED INTRAMUSCULAR
BOTULINUM TOXIN INJECTION IN TREATING SPASTICITY**

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Introduction

Botulinum toxin are effective in treating spastic muscles in children with cerebral palsy or in adults following central nervous system insults. Its success relies on correct needle placement, which can be difficult in small and deep seated muscles. Moreover, accurate site of injection is necessary due to the potential systemic side effects of botulinum toxin such as swallowing or respiratory difficulty. Here, we describe the use of ultrasonography in guiding safe botulinum toxin injection.

Objectives

The purpose of this study was to describe our local experience in ultrasound-guided intramuscular injection of Botulinum toxin in treating muscle spasticity. Clinical outcome and complications are audited against Royal College of Physicians (UK) and NICE guidelines.

Methodology

Retrospective study of 32 consecutive patients who underwent USG-guided Botulinum toxin injection at our institute from January 2011 to January 2016. The indication, dosage, clinical success, and complications were retrieved from electronic patients' record (ePR) and analyzed.

Result

32 patients (21 males and 11 females; mean age= 22+/-21 years old; range 1 to 68) underwent 47 botulinum toxin injections from January 2011- January 2016 under ultrasound guidance with a 7.5-12MHz linear transducer. The commonest indication was cerebral palsy with either spastic hemiplegia (20/32; 62.5%) or spastic diplegia

(8/32; 25%). The rest of the patients suffered from CNS insult such as stroke, meningitis, or tumour removal (4/32; 12.5%). Dosage of Botulinum toxin ranged from 5 units in small muscle groups such as the interossei to 1000 units in large muscles such as the latissimus dorsi. All pediatric patients had either oral or IV sedation prior to procedure. In clinical follow within 1 month of injection, caregivers suggested improvement of the spasticity in 25 out of 32 patients (78%), while 7/32 (22%) of patients did not have significant clinical improvement. Potential contributing factors for a lack of treatment response included difficult ultrasound assessment due to severe contracture, muscle atrophy or fibrosis. 4% of patients commented on subjective tiredness for 2-3 days after the procedure, but no adverse effect such as respiratory failure or arrhythmia requiring hospitalization was recorded. In conclusion, USG-guided intramuscular botulinum toxin injection is safe and effective in relieving muscle spasticity.