

# 5-YEAR FOLLOW-UP AFTER FIRST BOTULINUM TOXIN A INJECTION IN REAL-LIFE POSTSTROKE SPASTICITY: A SINGLE-CENTER EXPERIENCE IN BARCELONA



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## Introduction and Objectives:

Variability in botulinum toxin A (BoNT-A) injection practice is a common issue, and real-life practice data are scarce in the literature. In order to investigate practical clinical experience, we describe local practices at a public health clinic in Spain where poststroke spasticity patients were treated at least once with botulinum toxin A.

## Methods:

This was a retrospective study of poststroke patients in a spasticity unit who started BoNT-A treatment during the years 2008 to 2011. Patients were included if 5-year follow-up data after first BoNT-A injection were available. Basic demographic data, treatment dynamics, and BoNT-A usage are reported.

## Results:

The study population comprised 43 patients (21 male, 22 female) aged  $65.81 \pm 12.34$  years (mRankin scale: 1[0], 2 [6], 3 [9], 4 [27], 5[1]). At 5-year follow-up, 22 patients were still receiving active treatment, whereas 21 patients were inactive (11 patients had died; 1 rejected treatment; 4 were lost to follow-up; in 3 cases, the physician considered continuation of BoNT-A to be unnecessary; and 2 patients had moved to another city). Of the 43 patients in the study, 36 (83.7%) had received a second BoNT-A treatment (Image 1), with the mean time-to-second treatment being  $198 \pm 82.9$  days (Image 2). The number of injection sessions per patient averaged  $5.95 \pm 3.34$  (range, 1 to 12 sessions) (Image 3).

The average number of vials used per patient in 5 years was  $18.72 \pm 13.73$  (Image 4).

The total amount of BoNT-A administered in this population over 5 years was as follows: onabotulinumtoxinA (Botox®), 55505 U; incobotulinumtoxinA (Xeomin®), 20840 U; and abobotulinumtoxinA (Dysport®), 10100 U.

The number of injection sessions for the active patients was statistically significant ( $P > 0.001$ , student t test). (Image 5)

The mean interval between injections was  $208.7 \pm 96.1$  days (Image 3).

The mean interval between the last injection and death was  $519.6 \pm 508.8$  days ( $P = 0.008$  using the Mann-Whitney test).

## Conclusions:

In our study, a high percentage of retreatment with BoNT-A was common in patients with post-stroke spasticity.

About a quarter of patients died during follow-up. No death could be directly attributed to botulinum toxin injection, attesting to a temporal plausibility.

The study identified 2 subgroups of BoNT-A users: short-term users, defined by a smaller number of sessions; and long-term users, who received injections on a more regular basis.

The long intervals between the last BoNT-A injection and death in our series suggests either that BoNT-A injection is not a priority in poststroke spasticity as patients enter the last period of life or that social or contextual factors preclude continuing injections.

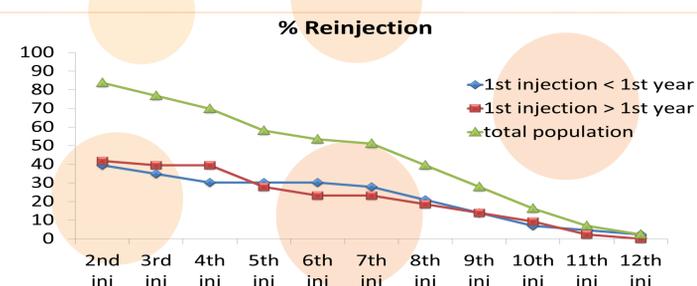


Image 1: Reinjection percentage

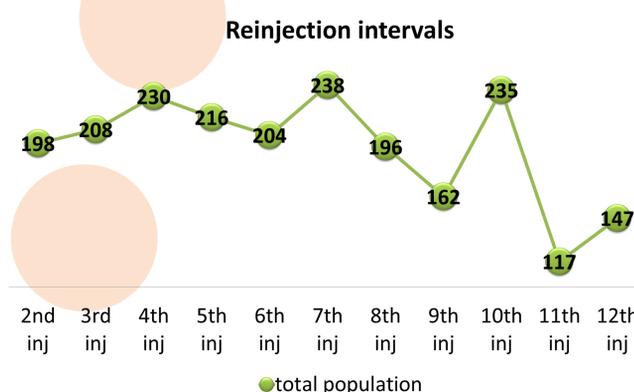


Image 2: Reinjection intervals

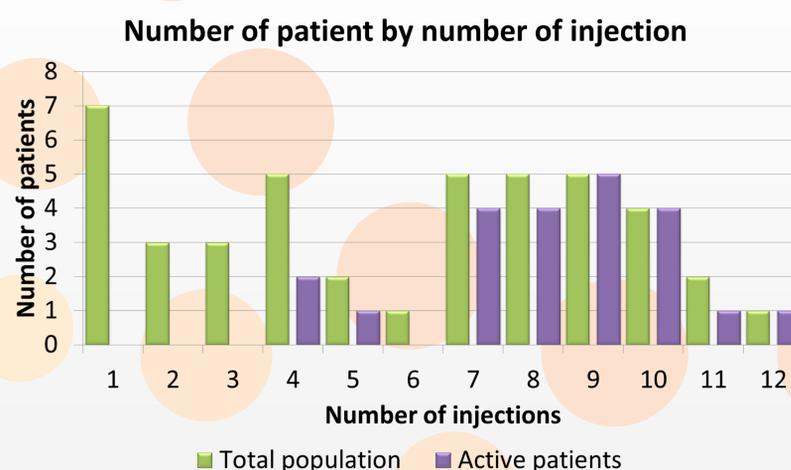


Image 5: Distribution of number of patient by number of injection

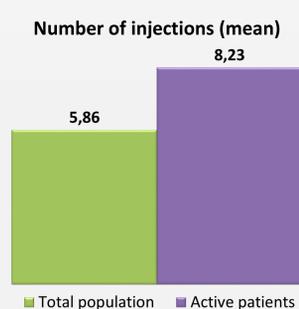


Image 3: Number of injection for active patients vs total population

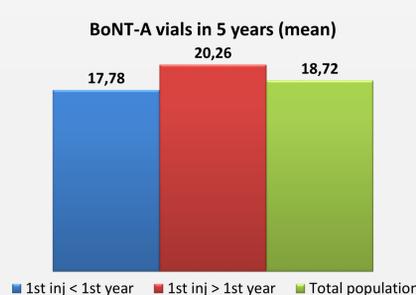


Image 4: mean number of BoNT-A vials injected by patient

## Bibliography:

Mohammadi B et al. Long-term treatment of spasticity with botulinum toxin type A: an analysis of 1221 treatments in 137 patients. *Neurol Res* 2010 Apr;32(3):309-13  
Turner-Stokes et al. Upper limb international spasticity study: rational and protocol for a large, international, multicenter prospective cohort study investigating management goal attaining following treatment with botulinum toxin A in real life clinical practice. *BMJ Open*. 2013 Mar 18; 3(3). pii: e002230