# Relationship between abobotulinumtoxinA injections into shoulder muscles and patient-centred primary goal selection and achievement: sub-analyses from the Upper Limb International Spasticity (ULIS)-II Study



of this poster

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# Background

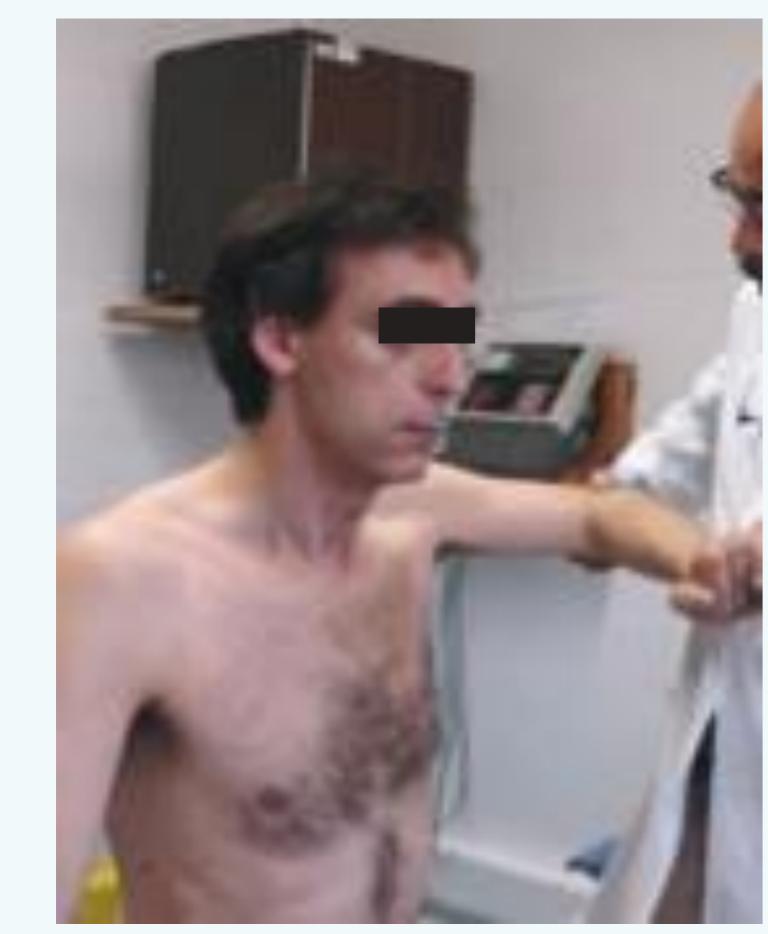
- Upper limb spasticity (ULS) often involves the shoulder, affecting functional movements and daily activities of patients.<sup>1,2</sup> Shoulder pain in ULS can interfere with rehabilitation<sup>1,2</sup> and is associated with poorer outcomes and prolonged hospital stays.1
- In addition, recruitment and complex integration of muscle activity from the shoulder to the fingers is required for functional arm recovery (enabling patients to reach and rotate to place the hand in a functional position).3
- Figure 1 shows assessment of range of movement in a patient with shoulder spasticity.
- Botulinum toxin A (BoNT-A) reduces spasticity at the level of impairment (muscle tone), but functional gains have been harder to demonstrate.4
- Patient-centred goal setting, tailoring treatment goals to individuals, is an integral part of neurological rehabilitation.<sup>5</sup>
- Goal Attainment Scaling (GAS) is a well-established, effective method for quantifying patientcentred goal achievement.<sup>6,7</sup>

# The Upper Limb International Spasticity (ULIS) programme

The ULIS programme describes real-life clinical practice and patient-centred outcomes (goal attainment) in the treatment of ULS with BoNT-A.8,9

- The ULIS-II study was a non-interventional 18-month international prospective longitudinal study conducted in 84 centres in 22 countries across Europe, Pacific Asia and South America.
- AbobotulinumtoxinA (aboBoNT-A; Dysport®), onabotulinumtoxinA (Botox®) and incobotulinumtoxinA (Xeomin®) were used by 70%, 22% and 8% of patients in the ULIS-II cohort, respectively.9
- The most common primary goals selected in the ULIS-II cohort were related to passive function, active function, impairment and pain. Overall, 80% of patients achieved their primary goals.9
- The most frequently injected were the long finger flexors, followed by biceps and brachioradialis. Shoulder muscles were less commonly injected.9

Figure 1. Assessment of range of movement in a patient with shoulder spasticity.



Patient consent has been obtained for use of this image

# Objectives

- ULIS-II aimed to quantify and characterise patient-centred goal achievement in patients with post-stroke ULS following one BoNT-A injection cycle.
- This sub-analysis explores primary goal selection and achievement in patients receiving aboBoNT-A injections in shoulder muscles.

# Methods

• The study design and results of ULIS-II have been published.<sup>8,9</sup>

Figure 2. Patients included in the sub-analysis population.

- This post-hoc sub-analysis population comprised adult patients receiving aboBoNT-A injections in at least one shoulder muscle, in accordance with routine local clinical practice (Figure 2).
- Of the 321 patients injected with aboBoNT-A in the upper limb muscles (finger, wrist, elbow and/or shoulder), 82 (26%) received aboBoNT-A in at least one shoulder muscle.

#### Outcome measures

aboBoNT-A, abobotulinumtoxinA.

- At baseline, patients set one primary and up to three secondary goals, agreed upon by the treating team.
- Goal were assigned to the following goal areas: pain, passive function, active function, mobility, involuntary movement, impairment, other.

Study population

Global population administered aboBoNT-A

N=321 (70%)

Affected by shoulder spasticity

n=99 (31%)

Sub-population receiving aboBoNT-A in ≥1 shoulder muscles

n=82 (26%)

• GAS was applied using the GAS-light method<sup>5</sup> rated on a six-point verbal rating scale.

# Results

#### Goal selection

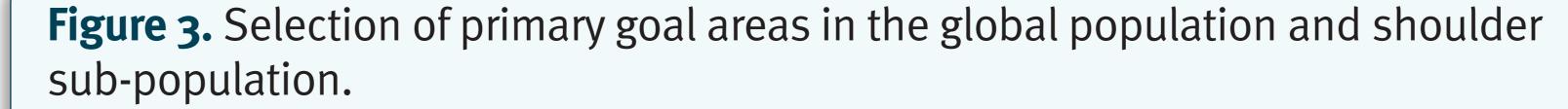
Figure 3 shows the selection of primary goals in the shoulder sub-population (N=82) compared with the global population (N=321).

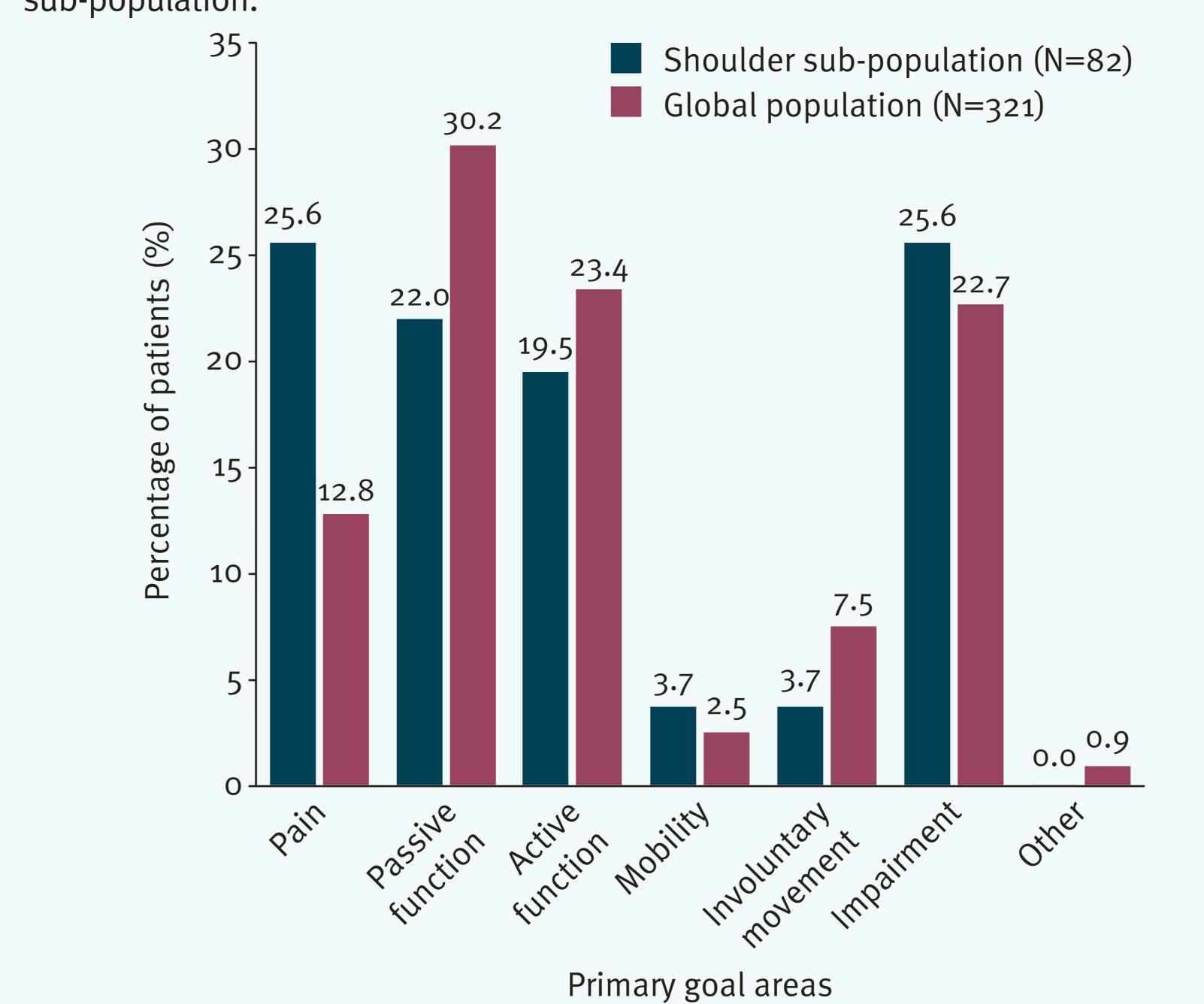
- Pain was selected twice as often (26% vs. 13%), and was significantly higher than in the non-shoulder subgroup (26% vs. 8%; chi-square test *p*<0.001).
- Passive function was selected less often in the shoulder sub-population (22% vs. 30%).
- Other goal selection rates were comparable with the global population:
- Impairment: 26% vs. 23%
- Active function: 20% vs. 23%
- Few patients selected mobility and involuntary movement as their primary goal in either population and no other goal areas were identified in the shoulder sub-population.

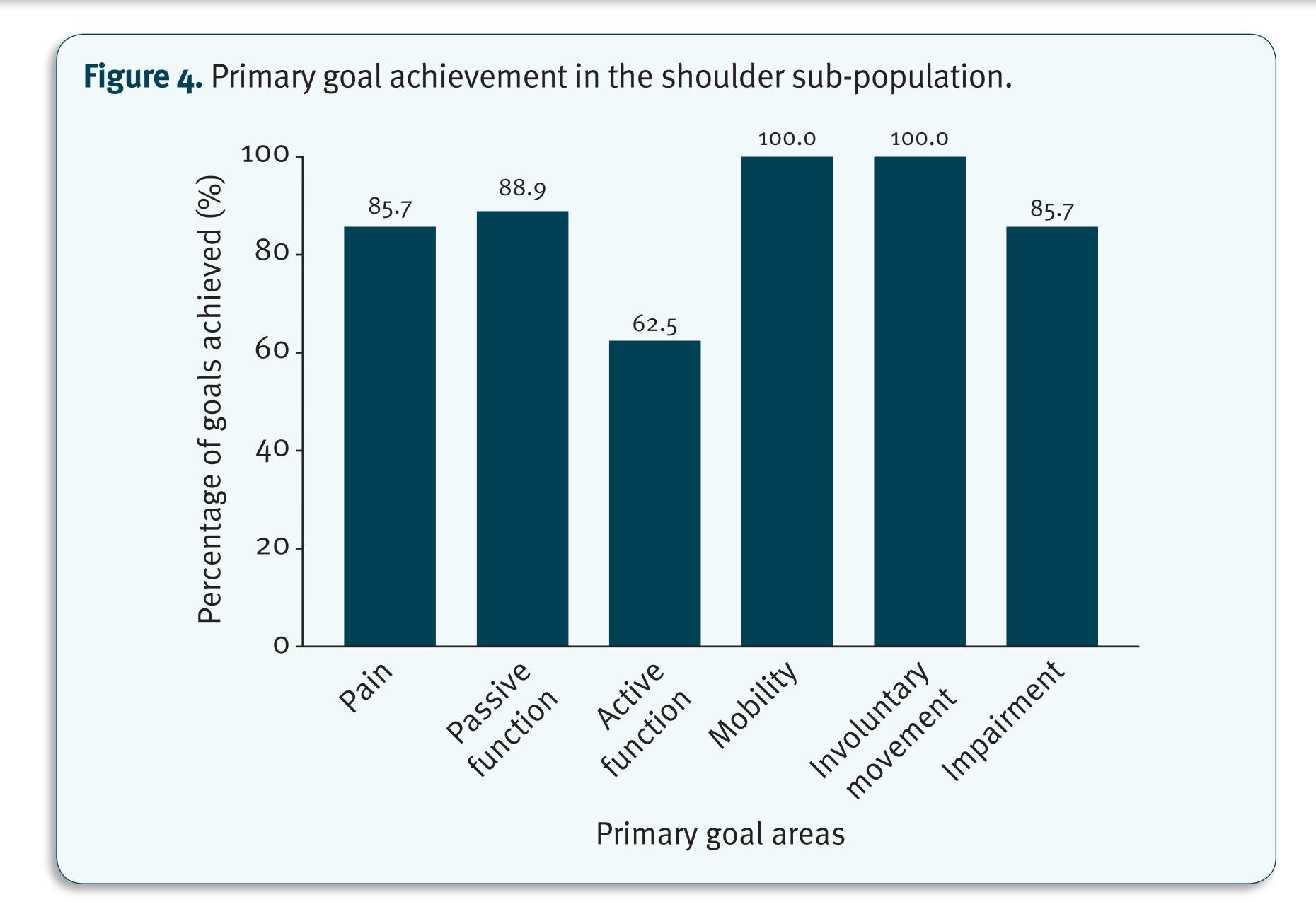
#### Goal achievement

Figure 4 shows the rates of primary goal achievement across the different goal areas.

- Overall 83% of patients in the shoulder sub-population achieved their primary goals.
- Over 85% of patents achieved their primary goals in pain, passive function and impairment.
- A lower rate of goal achievement were seen for active function (63%).
- Although only set by 3 patients, 100% of goals related to mobility and involuntary movement were achieved.







# Conclusions

- In this sub-population, pain was selected as a primary goal significantly more often than in the non-shoulder subgroup, suggesting shoulder spasticity may be responsible for post-stroke upper limb spasticity-related pain.
- Overall, high levels of goal achievement were observed for all primary goals in this sub-population of patients receiving shoulder muscle injections.
- These results suggest that injection with abobotulinumtoxinA into shoulder muscles may help to achieve patient-centred goals, particularly those relating to pain.

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