Incobotulinumtoxin-A for Calf Contouring: A Clinical Study on Effectiveness, Safety and Modifying Factors

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Background

Selecting a BoNT-A formulation with a lower immunogenic potential is crucial for aesthetic treatments involving larger muscle groups, such as the calves. Published literature on the use of incobotulinumtoxin-A (IncoBoNT-A), a complexing protein-free BoNT-A with a demonstrated low risk of immunogenicity, for lower leg contouring is limited and a standardized protocol is yet to be established.

Objectives

Our objective was to evaluate the effectiveness and safety of IncoBoNT-A for calf contouring using an injection protocol that targets specific calf muscles contributing to overall leg shape.

Materials and methods

20 Korean women received 75–100U of IncoBoNT-A per calf muscle (total 150–200U for both calves) administered intramuscularly using a 30G 0.5-inch needle (**Fig 1**).

Follow-up evaluations at 1-, 3- and 6-months post-procedure included:

- Calf circumference (measured by tape) and muscle thickness (measured by ultrasound)
- Clinical photographs
- Subject and physician Global Aesthetic Improvement Scale (SGAIS and PGAIS)
- Blinded evaluation with Merz Aesthetics Scales (MAS) for female Asian calf[1] at rest and dynamic states
- Recording of body weight and daily activities

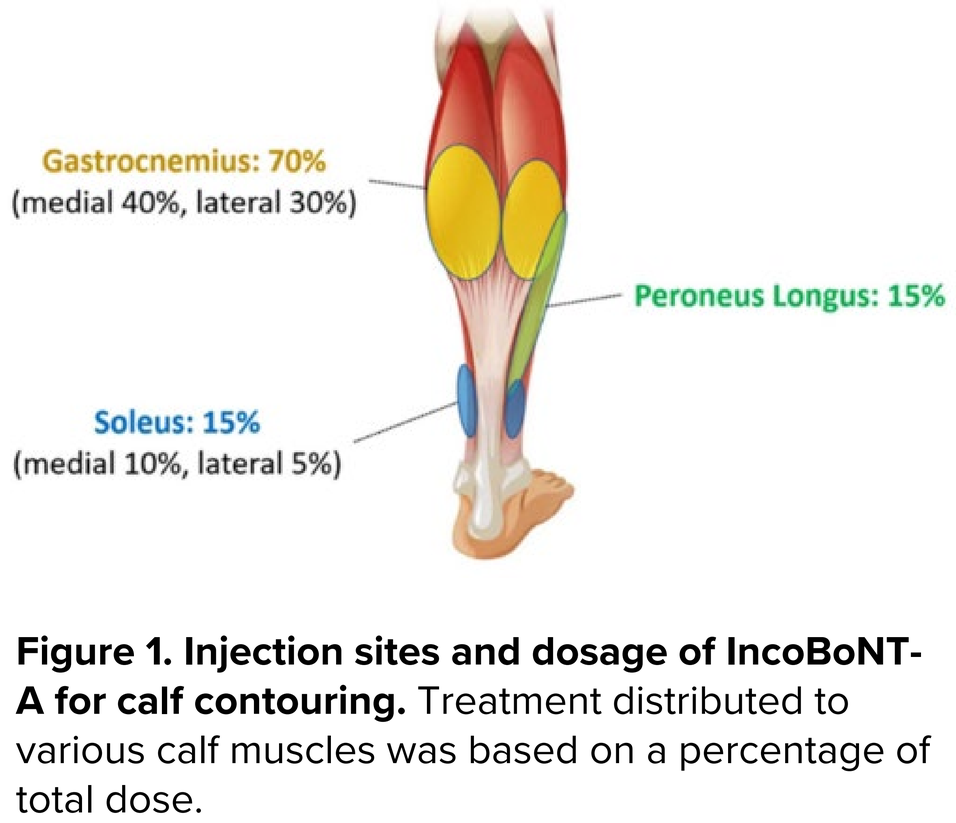

Figure 1. Injection sites and dosage of IncoBoNT-A for calf contouring. Treatment distributed to various calf muscles was based on a percentage of total dose.

Results

- Both calf circumference and muscle thickness at 2 fixed locations declined over time, reductions at each visit compared to baseline was significant (**Fig 2**).
- MAS for female Asian calf demonstrated consistent improvements through the study, particularly at the dynamic state.
- High levels of satisfaction were observed with 100% of participants reporting enhanced appearance based on SGAIS and PGAIS at Month 6.
- Participants experienced mild procedural pain without further complications.
- Notably, weight gain was associated with lesser reductions in calf circumference.

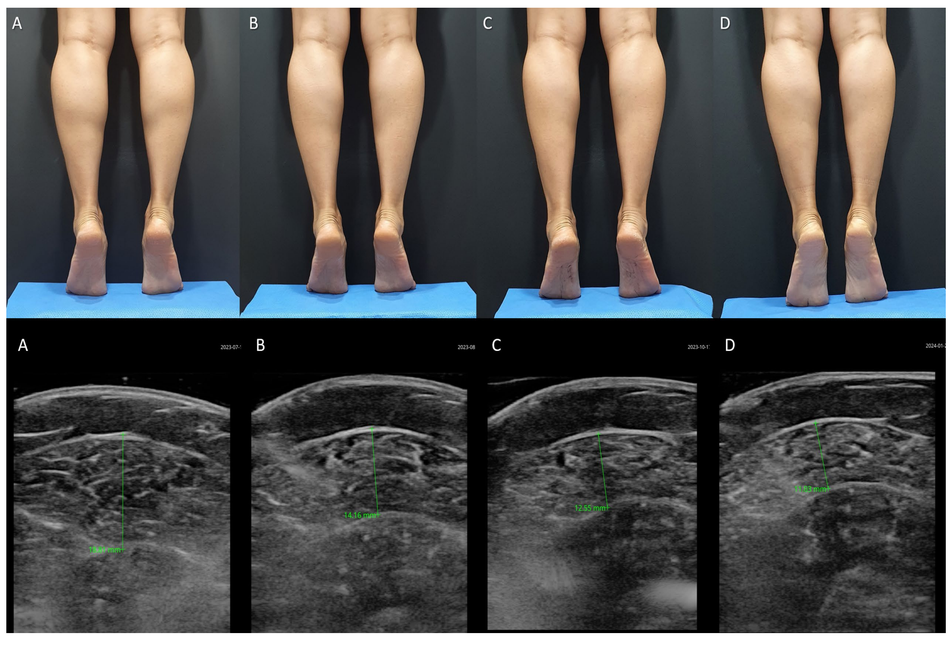

Figure 2. Clinical photographs of the posterior calf at dynamic state and ultrasound images at the level of 5cm above midpoint (inner) of the calf in one representative subject (A) Before the injection of 150 U of IncoBoNT-A (B) 1 month (C) 3 months and (D) 6 months after procedure.

A single dose of 150–200U IncoBoNT-A is safe and effective for calf contouring. Weight management may facilitate the achievement of optimal results. Precise dosing and targeting of specific muscle groups based on their contribution to overall leg shape enables favourable cosmetic outcomes, underscoring the importance of a customized treatment approach.

1. Seo K et al. Dermatol Surg. 2019; 45 Suppl 1:S22-S29.