Efficacy of IncobotulinumtoxinA (Xeomin®) for the Treatment of Glabellar Frown Lines in Male Subjects: Post-Hoc Analyses from Randomized, Double-Blind Pivotal Studies

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BACKGROUND AND OBJECTIVE

• Interest among men in minimally invasive cosmetic procedures continues to increase

- Figure 1. Minimally invasive cosmetic procedures in men. In 2016, men accounted for ~14% of all minimally cosmetic procedures. The number of botulinum toxin injections among men increased 9% from 2016 to 2017.

- Despite the increasing number of men seeking aesthetic procedures, they are underrepresented in the literature on aesthetic products such as botulinum toxins.

- A previous analysis of 17 studies on botulinum toxin in aesthetic indications showed that only 11%-15% of subjects in these trials were male.

- Therefore, there remains a clinical need for studies that address how men and women respond differentially to aesthetic treatments to support individualization of treatment plans.

- The objective of this analysis was to assess the efficacy of incobotulinumtoxinA (Xeomin®), Merz Pharmaceuticals GmbH, Frankfurt, Germany, for the treatment of glabellar frown lines (GFLs) in men.

METHODS

Subjects and Treatment

- Previously described pooled, post-hoc analysis of incobotulinumtoxinA pivotal phase 3 GFL studies in the US was extended to include a male subgroup analysis.

- N=65 (incobotulinumtoxinA, n=34; placebo, n=31) with moderate to severe GFLs at baseline (Facial Wrinkle Scale [FWS]).

- Supportive data are also provided from a post-hoc analysis of the European phase 3 study on incobotulinumtoxinA for upper facial lines (UFLs), including the glabellar area.

- N=17 males (incobotulinumtoxinA, n=9; placebo, n=8) with moderate to severe GFLs at baseline (Morris Aesthetic Scale [MAS]).

- 20 U of incobotulinumtoxinA (4 U in UFLs in each of 5 injection sites in the GFLs) were administered to each subject.

- Subjects in the US study also received treatment for horizontal forehead lines and crow’s feet; post-hoc analyses were not conducted for these treatment areas.

Endpoints

- Pivotal Phase 3 US GFL Studies: Post-Hoc Analyses

- % of subjects with a score of 0 or 1 on the FWS at maximum contraction at 30 days (investigator-assessed).

- % of subjects with a ≥1-point change on the FWS at maximum contraction at 30 days (investigator-assessed).

- % of subjects with a ≥1-point change on a separate 8-point scale at rest (subject-assessed).

- Subjects’ ≥1-point rating scale ranged from 0 (no muscle action possible) to 3 (strongest muscle action possible).

- Pivotal Phase 3 US Study on Upper Facial Lines: Post-Hoc Analyses

- % of subjects with a score of 0 or 1 on MAS (GFLs only) at maximum contraction at 30 days (investigator-assessed).

- % of subjects with a ≥1-point reduction on the MAS (GFLs only) at maximum contraction at 30 days (investigator-assessed).

RESULTS

- Compared with females, males demonstrate lower response rates on GFL severity scales (FWS, MAS) when treated with the FDA recommended 20 U of incobotulinumtoxinA (Figures 2 and 3).

- Results were highly consistent between the pooled pivotal phase 3 US studies on GFLs and the European pivotal phase 3 GFL study.

- A high proportion of both male and female subjects in the incobotulinumtoxinA post-hoc analyses achieved ≥1-point improvements from baseline at maximum contraction (Figures 2 and 3).

- Moreover, high proportions of both male and female subjects receiving incobotulinumtoxinA in the pooled phase 3 GFL studies demonstrated a ≥1-point improvement at rest (Figures 2 and 3).

- A ≥1-point improvement at rest is an important indicator that subjects received an aesthetic benefit that is observable during typical “real-world” circumstances (ie, without having to fully contract their muscles).

DISCUSSION

Key Differences in Male Facial Anatomy

• Males have a greater muscle mass in the glabellar area (procerus and corrugators supercilii) compared with females.

• Differences in muscle mass is likely a key factor in determining males’ threshold for response to botulinum-toxin treatment.

• Male facial anatomy also varies with respect to skin shape/tony prominences and vasculature.

Best Practices

• Gender-specific differences in treatment response provide an opportunity to revisit best practices for botulinum toxin administration and treatment plan development.

• The most important factor in achieving the best possible outcomes is the development of a customized aesthetic treatment plan.

• Careful evaluation of the patient’s aesthetic concerns both at rest and during animation is particularly important for achieving natural-looking results.

• The final individualized treatment plan should be developed collaboratively with the patient and account for all variables that may affect aesthetic outcomes, including gender, age, ethnicity, skin quality, baseline wrinkle severity, muscle mass, and individual patient expectations.

• Proper reconstitution technique is critical to avoid under-dosing the patient.

• In the case of incobotulinumtoxinA, gentle inversion and swirling of the vial is required to ensure the full contents of the vial are properly suspended in the diluent.

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CONCLUSIONS

- Compared with females, males demonstrate lower response rates on wrinkle severity scales in studies on all 3 available botulinum toxins.

- Variations in treatment response are potentially associated with key male anatomic differences (eg, muscle mass).

- Overall, results emphasize the importance of customized treatment plans.