Experts demonstrate 'advances and refinements' in neuromodulators for facial rejuvenation

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Plastic surgeons have a range of effective products and minimally invasive techniques for patients seeking to reverse the signs of facial aging. A review and update on facial rejuvenation using botulinum toxin "neuromodulators" is presented in the October issue of *Plastic and Reconstructive Surgery*, the official medical journal of the American Society of Plastic Surgeons (ASPS).

The article and accompanying online video outlines a "stepwise approach for facial rejuvenation" using currently approved neuromodulators. The authors are Reza Kordestani, MD, Kevin Small, MD, and Rod J. Rohrich, MD, of University of Texas Southwestern Medical Center, Dallas. Dr. Rohrich, Editor-in-Chief of Plastic and Reconstructive Surgery, comments: "With comprehensive facial analysis and careful injection technique, FDA-approved neuromodulators such as Botox , Dysport, and Xeomin enable plastic surgeons to restore a more youthful facial appearance, in a safe and efficient office procedure."

Minimally Invasive Tools and Techniques for a Younger Facial Appearance

The article presents some advances and refinements in the approach to minimally invasive facial rejuvenation using botulinum toxins. These products are purified proteins derived from bacteria that interfere with communication between nerves and muscles, causing local paralysis in

the areas where they are injected.

Use of neuromodulators for minimally invasive facial rejuvenation has grown rapidly in recent years—by approximately 750 percent from 2000 to 2014, according to ASPS statistics. Cosmetic injection of onabotulinum toxin A—best known by the brand name Botox—is by far the most common plastic surgery procedure, with more than 6.5 million procedures performed in 2015.

Other currently approved FDA-approved products include abobotulinum toxin A (Dysport) and incobotulinum toxin A (Xeomin). While all of these products have "equivalent success in appropriately trained hands," the researchers note that they are not interchangeable in terms of dosage and effects. All three products are specifically approved for treatment of "frown lines" and "crow's feet"; plastic surgeons may use them "off-label" to treat other types of facial wrinkles as well.

In the accompanying video, Dr. Rohrich demonstrates his step-by-step approach to facial rejuvenation with Botox. The technique begins with comprehensive analysis of the patient's facial appearance, including the effects of facial movement and any asymmetrical areas. The plastic surgeon must have an intimate understanding of the facial muscles—how they contribute to "dynamic" facial wrinkles and the proper neurotoxin dose and injection technique to produce the desired effect.

Dr. Rohrich then demonstrates his "top-down" injection technique, with recommendations for doses and depth of injection of the forehead, areas around the eyes, cheeks, corners of the mouth, the chin, and neck. His technique also includes the use of dermal fillers to treat "static" lines (not due to muscle movement) of the upper lip.

Patients can resume normal activities immediately after neuromodulator injection, although they should be careful not to massage the area after

injection. The effects are temporary, lasting about three to four months.

While side effects and complications can occur, they are generally related to poor injection technique. Drs. Kordestani, Small, and Rohrich conclude: "Knowledge of facial anatomy, accurate facial analysis, and familiarity with neurotoxin characteristics will minimize complications and optimize results."

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