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THE
WRINKLE
REPORT



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hot topics



Neil Sadick MD, Clinical Professor of Dermatology at Weill Medical College of Cornell University, presents an update on the current hot topics in cosmetic dermatology.

There is an emerging movement towards less invasive, safe, cost effective, no-downtime procedures in the aesthetic world. The goal of these new, exciting technologies is to reverse the signs of aging, slow down the biologic clock, and produce natural long-lasting results with minimal risk.

Cosmeceuticals

In terms of new and exciting cosmeceuticals, the high potency antioxidants top the list. The three most touted products are idebenone, genestein and vitamin C-E-ferulin compound. This novel group of agents has unique properties including minimizing ultraviolet-induced sunburn reaction, protection against the development of skin cancer and the reversal of photoaging.

Lasers

The world of non-invasive and minimally invasive lasers is playing a major role in anti-aging photorejuvenation. The newest entries to this exciting new field are the light emitting diodes (LEDs), combined laser radiofrequency technologies (ELOS), and fractional

resurfacing technologies (Fraxel).

LEDS such as the Omnilux and GentleWaves act by indirectly stimulating the skin structures via a mechanism called 'biomodulation'. They have both red and blue light emitting filters which stimulate blood and lymphatic flow in the skin as well as stimulating new collagen and killing acne-producing bacteria on the skin surface. This produces improved skin toning, that is, it makes the skin smoother, improves skin pigmentation and decreases blood vessel formation.

The combination of two modes of energy in a single device, radiofrequency and light energy, has been introduced and coined electro-optical symmetry (ELOS). This combination device allows the safer treatment of aesthetic skin problems by delivering less intensive light energy and utilizing two potentially synergistic physical modalities. This is particularly helpful in treating darker skin. The Aurora combines intense pulsed light plus radiofrequency and is particularly helpful in managing enlarged pores, pigmentation and blood vessel problems. It also represents the only shown technology proven to be effective in the removal of white and light blond hair. The Polaris utilizes a combination of diode laser energy plus radiofrequency, and in a recent publication has been shown to be effective in producing effective non-invasive wrinkle reduction, producing results comparable to other infrared lasers, with greater patient safety.

The third emerging laser technology is the Fraxel (fractional resurfacing device). Both patients and dermatologists are aware of the long healing process and associated downtime as well as the occasional irregularities in skin lightening associated with the more invasive ablative carbon dioxide and erbium traditional lasers.

This new technology represents a bridge between the more transitional ablative sources and the somewhat unpredictable results associated with the non-ablative technologies. That is, it causes skin contraction and remodeling associated with the more ablative laser, but with minimal downtime and no evidence to date of pigment alterations in the skin, thus representing an intermediate approach in both results and post-laser course between the non-ablative and ablative technologies for wrinkle reduction and skin tightening.

It achieves these goals by creating multiple micro-wounds deep into the skin at controlled depths and intervals so that a more uniform remodeling of all the skin layers can be achieved after multiple treatment sessions. Investigators have also found this technology helpful in the management of hyperpigmentation and scars.

This technology is new and in the evolutionary development, so the final word is not out as to its true clinical efficacy; however, it does represent both a novel, promising approach to less aggressive minimal downtime skin rejuvenation.

Skin tightening technologies

The radiofrequency frontier was pioneered by the Thermacool device for skin tightening. This has led to the introduction of other sources for accomplishing similar or improved results. The Thermacool has been shown after a series of two to three treatment sessions to produce an average of 2-3mm of skin tightening of the upper and lower face. Initial clinical experience had shown inconsistent results and sporadic cases of skin depressions. In addition, the procedure was quite painful necessitating oral or intravenous sedation. However, a treatment protocol that has recently been introduced where multiple pulses utilizing lower energies and larger treatment tips have made results more consistent, safe and less painful.

In response to these concerns, a new high-energy, deeply penetrating light source called the Titan has been introduced. This technology appears to be less painful and at least in initial trials to produce results comparable to the high-energy radiofrequency sources such as the Thermacool.

New acne options

Many women because of contraception issues or recent reports of depression do not want to take Accutane or ingest long-term antibiotics. New blue light sources such as the Clear Light and I Clear, and LED sources such as the Omnilux, have been shown to be effective alternatives for the treatment of acne in this setting.

New treatments for stretch marks

Newer, effective ultraviolet light sources are now available for this previously difficult-to-treat problem. The Relume, the original short wavelength skin re-pigmentation technology, has now been superseded by a second generation device called the Multiclear, which combines short wave UVB light with a longer wavelength UVA source which specifically has a strong stimulatory effect upon the skin's targeted natural pigment, melanin. In a recent publication up to 80 per cent of patients with a series of eight biweekly treatments had greater than 75 per cent re-pigmentation of white stretch marks representing a new exciting approach to the management of this difficult, widespread cosmetic problem.

Fillers

There is an explosion of new fillers entering the US market. The risk of allergic reactions, communicable diseases and duration of clinical effect have led to four new classes of recently introduced FDA-approved and off-label use products.

The genetically engineered new collagens such as CosmoDerm and CosmoPlast have no human or animal component and thus no potential for allergic reactions. They do not have long-lasting results; an average of four to



six months persistence is common. They are used for selected cases such as lip enhancement.

The hottest and most popular of the fillers are the hyaluronic acid (sugar) derivatives. These are split into two groups. The non-animal stabilized products are produced from bacterial fermentation and include Restylane and the newly introduced Viscontour. Hylaform and Captique are animal-based products delivered from rooster combs. The popularity of these products in correcting contour defects on the face such as the cheek and chin folds include their ease of use, lack of allergic reactions and greater longevity of six to eight months duration.

More recently, longer-lasting derivatives such as Radiesse, a filler composed of calcium hydroxy appetite crystals (bone spicule), have been brought to the market. This product, which is presently being utilized in an off FDA mode, lasts for eight to 12 months, making it an effective alternative for selected patients who are opting for a longer lasting product.

Finally, a new generation of three-dimensional fillers has been introduced. The first generation of product is represented by Sculptra which is a poly-L-lactic polymer commonly employed in suture material. This product has several advantages over previous fillers including longevity, lasting approximately two years, the ability to be used to recontour the entire face three-dimensionally and its ability to stimulate the body to produce new collagen. Presently this product has been used for correction of facial fat loss in HIV-infected individuals.

New approaches to the management of cellulite and unwanted fat deposits

The safer, less invasive removal of fat represents one of the new major frontiers in aesthetic dermatology. Three novel approaches lead this field. The first is mesotherapy, which has been around in Europe and South America for decades and is now gaining increased

popularity in the US. The most common agent used in this country is phosphatidyl choline, a detergent that can dissolve local fat deposits on the face, or unwanted fat deposits on the extremities such as cellulite. Although some-what controversial in terms of its clinical efficacy, scientific publications have shown its efficacy in selected individuals.

Perhaps the newest, most exciting development in the treatment of cellulite has been the recent introduction of the VelaSmooth, a combination radiofrequency, infrared light, suction device which has been shown in recently published studies to improve blood flow to the skin, even out irregular skin dimpling contour defects and reduce thigh circumference.

Finally, Liposelection represents a major advance in liposuction surgery. The Liposelection technique employs the Vaser system, which uses high-energy ultrasound to melt unwanted fat and remove it. This system has uniquely designed equipment that protects the surrounding tissue while removing stubborn fat deposits. This allows for safe and effective full-body contouring with amazing results.

Minimally-invasive facelifting

New technologies and techniques now allow us to perform facelifts without a knife. The thread lift technique uses threads to lift sagging tissue without any incisions. The Aptos threads are specially designed sutures that are inserted through tiny needle punctures under local anesthesia. The results are immediate with minimal to no downtime.

Conclusion

As you can see, a plethora of new and exciting non-invasive aesthetic technologies are now being utilized by the cosmetic dermatologist which have led to increasing patient satisfaction and safety in the realm of whole-body rejuvenation. **cbm**