**LASER-ASSISTED DRUG DELIVERY**

Dr Sabrina Fabi explains how Solta Medical’s Clear+Brilliant Perméa™ laser system can be used to improve drug delivery across the skin barrier.

The concept of using lasers as a method to enhance delivery of medications across the skin barrier is not entirely new. It has, however, been gaining increasing attention within the aesthetic industry in recent years. ‘We’ve been using lasers to assist us in drug delivery for the past two years or so,’ said award-winning San Diego-based dermatologist and cosmetic surgeon Sabrina Fabi. ‘I believe it represents the future of laser surgery.’

Minimally invasive fractionated lasers, such as the Fraxel® DUAL 1550/1927 system from Solta Medical (Hayward, California, USA), that are able to effectively treat a large range of issues are popular with both patients and practitioners alike. Using proven proprietary fractional laser science and technology, the Fraxel DUAL laser creates an array of microscopic lesions across the surface of the skin with each pass of the handpiece. This patented technology creates an unparalleled even pattern on the skin—microscopic lesions that are surrounded by large areas of healthy skin—to help promote quick healing with little or no social downtime. The healthy skin helps turn over the tiny lesions in a matter of days, revealing the fresh, smoother, healthier glowing skin below.

As we know, part of the skin’s function is to provide a natural physical barrier which, in effect, serves as a therapeutic challenge in letting anything get down into the dermis. This is mainly due to densely packed corneocytes which create a hydrophobic, nonpolar lipid matrix. Because of this, the skin becomes impermeable to certain hydrophilic molecules that are often used in aesthetic treatments. These include some of our growth factors, antioxidants, lightening agents, and fillers,’ explained Dr. Fabi.

‘Depending on what published data you read regarding topical uptake, when applied to skin under normal circumstances, only about 10% of a drug actually makes it into the tissue. In addition, the bioavailability of that particular topical or drug really ends up only being about 1-5%,’ she continued. ‘Through laser-assisted drug delivery, we are able to create a more efficient transcutaneous delivery of our large molecule drugs. In fact, I commonly use topical applications in conjunction with Solta Medical’s Clear+Brilliant Perméa™ System to facilitate drug delivery.’

The Clear+Brilliant system offers the choice of two different handpieces and was designed to treat a broad range of patients who are ready to take the next step in their skin care regimen—a true fractional laser treatment that is not only effective, but also gentle and affordable. It is a perfect introduction to aesthetic laser treatments for current patients and new patients alike.

The Perméa handpiece uses a fractionated 1927 nm diode laser that, similar to the Fraxel technology, creates microscopic pores in treated tissue. Though the stratum corneum remains functionally intact, the Perméa handpiece creates wider and shallower lesions compared to...
the Original Clear+Brilliant handpiece, causing greater superficial disruption which increases skin permeability. Topical application immediately post-treatment allows the topical to more readily penetrate the stratum corneum in order to maximise its benefits. According to Solta Medical, clinical studies demonstrated that, when an antioxidant serum (combination of ferulic acid, vitamin C, and vitamin E) was applied immediately after the Clear+Brilliant Perméa treatment, patients reported significantly earlier resolution of post-treatment redness and swelling.

“The resulting increase in permeability of the stratum corneum post-treatment with using Perméa allows me to more efficiently deliver my lightening agents. This not only enhances my patient’s result from a single treatment, but it doesn’t add anything to the downtime of the procedure.”

The Perméa handpiece has a significantly higher absorption coefficient than the Original Clear+Brilliant handpiece. Since its treatment depth is fixed at 170 µm, it effectively treats the tissue where melanin resides. Perméa is also safe on all skin types because it targets water, not other chromophores such as pigment.

“The Perméa handpiece allows me to offer Fitzpatrick skin types III–V a gentle laser treatment option to address their dyschromia, without the high risk of postinflammatory hyperpigmentation. I have many Latino and Asian patients coming in to the practice looking for a safer laser alternative to help manage their conditions, without the downtime of a chemical peel or more aggressive laser treatment, and it’s great to be able to have an option to offer them,” said Dr. Fabi.

“Since most topical compounds currently used in aesthetics are likely formulated to take into account the reduced uptake and bioavailability that results during transmission through normal stratum corneum, further studies are warranted to determine optimal concentrations and formulations for use in conjunction with laser skin resurfacing procedures, such as those performed with the Fraxel and Clear+Brilliant systems. However, the future possibilities associated with combining drug delivery with these laser treatments are interesting and exciting.”

Further information www.solta.com

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