Photo Skin Rejuvenation with IPL

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Introduction

Photo aging is becoming increasingly interesting, as it causes, among other alterations, the appearance of wrinkles, pigmentation disorders and loss of normal skin tone. Exposure to sunlight is responsible for 80 to 90% of facial aging. Signs of photoaged skin include changes in skin color, dyschromia's, lentigos, gradual appearance of telangiectasias (dilation of small blood vessels), as well as changes in skin texture such as loss of smoothness, keratotic appearance, early development and deepening of wrinkles. The aging of our skin is not only the result of the passage of time. It is also strongly influenced by external factors, such as weather conditions. The skin is made up of three layers: the epidermis, or outer layer; the dermis, or middle layer; and the subcutaneous tissue, or deep layer. The dermis contains collagen, elastin, and other fibers that make up the skin's structure. These elements give the skin a smooth and youthful appearance, and these are those damaged by Ultraviolet Radiation (UVR). UVRs are made up of two different types of waves, UVA and UVB.

When UV rays hit the skin, the melanocytes struggle to produce melanin to deposit in the epidermis. This is the process that gives you a tan, which is actually a defense reaction against radiation so that it does not penetrate the skin. UVB rays are shorter than UVA rays and are the main cause of sunburn. UVA rays are responsible for much of the damage we associate with photoaging. UVA rays penetrate deep into the dermis, where damage to collagen fibers occurs. This damage causes an abnormal increase in elastin production.

The unusual amounts of elastin induce the production of enzymes called metalloproteinases. These enzymes, which rebuild damaged collagen, work incorrectly and degrade it, causing the skin to rebuild itself incorrectly. As this process is repeated with daily UVA exposure, improperly rebuilt skin forms wrinkles, and the reduction in collagen results in atrophic, aged-looking skin. Continuous exposure to the sun can also cause staining. A brownish age spot is actually a lentigo, a pigmentation caused by sun exposure. Age spots generally appear on the hands, arms, face, and back in men and women.

The best way to fight photoaging is through prevention. The daily application of a sunscreen with SPF of 15 or more to the areas vulnerable to photoaging, not only helps prevent it, but can also reverse some of the existing signs. Reducing exposure

to UV radiation lowers the risk of developing skin cancer or a precancerous lesion.

Photo rejuvenation is a treatment that applies intense light to stimulate skin regeneration and collagen formation. In addition to significantly improving the appearance of our skin, it also manages to eliminate damaged skin and provide a rejuvenated appearance. Thanks to Photo rejuvenation, the expectations of patients have been increasing since they can combat their skin problems. The objective of this treatment is to achieve a high rate of cosmetic benefit in the minimum number of sessions and with a short recovery time. The three elements on which we can work are the support, the texture and the pigmentary alterations of the skin.

Light systems such as the one we use in photo rejuvenation allow us to combine different levels of treatment and constitute a complement to surgical procedures, providing a "biological" concept by stimulating regeneration and neo-collagen genesis. The clinical indications in the field of Dermatology and Plastic Surgery include skin rejuvenation as an effective alternative for the treatment of pigmentation, loss of skin tone, some vascular malformations, the elimination of telangiectasias, which are the result of photo aging, in most cases premature.

What is pulsed light equipment?

Pulsed light equipment is a device that is composed of an active medium, in this case solid, enclosed inside a resonant cavity limited by a pair of flat and parallel mirrors, when most of the atoms or molecules are excited and elevated. At a stable energy level, an amplification of light occurs inside, part of this light escapes to the outside through the semi-transparent mirror in the form of pulses.

To achieve an action on a certain element, this light energy must be absorbed by the components of that element. The chromium-related elements (which absorb light energy in the skin) are hemoglobin in the dermal vessels and melanin in the skin. Therefore, if an element does not absorb this energy in the form of light, there would be no changes in it; We call this characteristic the principle of selectivity. The light energy can be directed towards the substance or tissue that absorbs it without affecting the surrounding tissues that do not absorb it.

This tool based on selective photo thermolysis has allowed expanding the field of its clinical applications, thanks to the fact that it emits wavelengths between 550 and 1,200 nm, non-

ablative photo rejuvenation of the skin is considered one of the innovative techniques in the field. Of cosmetic dermo as it offers multiple advantages: it allows the global treatment of the entire affected skin surface (face, neck, décolleté, back of hands), not requires a recovery or convalescence period, is indicated at any age, is repeatable and can be combined with other methods such as implants, fillers or botulinum toxin. The doctor will make an assessment of the patient's skin type photo, based on that and the type of injury that he presents, the energy parameters that will be useful to improve his problem will be chosen

Materials and Methods

Both the person performing the procedure and the patient wear goggles to prevent eye damage. Next, a thin layer of gel is placed and over it the head of the equipment in the area to be treated (face, neck, forearm, hands, etc.), all this having been selected the filter and the appropriate power for each type of treatment and skin.

The pulsed light works by heating the skin through the application of intense light pulses, which will penetrate the skin, stimulating the fibroblasts to form collagen. If the IPL used is soft, only the first layer of skin will be eliminated and the greater the intensity of the IPL used, the deeper layers can be reached.

Once the light is applied to the area to be treated, it begins to act through heat, directly attacking the melanin of the pigmented spot, in this way the cells begin to be eliminated and to be replaced by new cells.

This treatment does not need too many sessions, although it will depend on the objective and the area to be treated, generally 6 sessions are carried out that last approximately 45 - 60 minutes each. Between one session and another, it is convenient to allow 3 to 4 weeks to pass. In addition, it has the benefit of being a painless outpatient treatment that does not require recovery time. By causing cell regeneration, it is likely that at the end of the treatment a slight redness or slight temporary inflammation will appear, which will disappear over the days.

Although it is a treatment that can be performed on any patient, it is advisable not to tan for the duration of the treatment and to use sunscreen to protect the skin.

Results

The results obtained in most cases during 20 years of carrying out this treatment in various pathologies such as Poikiloderma, telangiectasias, café-au-lait nevus, Becker nevus, Hyper pigmentation, among others, have been highly satisfactory. It must be considered environmental factors, uses and customs of the population and important racial characteristics in our environment.

Before and after Telangiectasia IPL treatment

Before and after hyper pigmentation IPL treatment

Before and after Lentigos IPL treatment

Before and after Acne scars IPL treatment

Conclusion

We have treated more than 10,756 patients with this technology allowing a clearance of the pathology that affected them between 80 to 90% in most cases.

The treatment is easy to carry out for both the patient and the treating physician, but the perseverance and care of the patient makes the result as expected, since as there are multiple sessions, the abandonment of this is frequent.

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