

Plexr In Acne Treatment

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ABSTRACT

Acne vulgaris is a chronic, inflammatory disease of the pilosebaceous follicles, which occurs mainly in adolescence and adulthood and is characterized by comedones, papules, pustules, nodules and often scars. Available treatments are divided into local and systemic. Plexr is an innovative technique both in aesthetic medicine and in treating skin and other diseases. After 2 years of treatment by plexr to patients with acne, it was found that it can provide good results on all types of acne, with plexr treatment patients can avoid taking systemic medication.

Keywords: Acne, comedones, papules, pustules, nodules, scars, hyper pigmentation, Plexr, antibiotics, isotretinoin, seborrhea.

Introduction

Acne vulgaris is a chronic, inflammatory disease of the pilosebaceous follicles, which occurs mainly in adolescence and adulthood and is characterized by comedones, papules, pustules, nodules and often scars. It may have a great impact on psychology and patient's social life. The pathogenesis is due to the local effect of androgens, which leads to seborrhea and consequent obstruction of the hair follicle by a keratinous plug in the lower infundibulum, hyperproliferation of Propionibacterium acnes, and inflammation. Available treatments are divided into local and systemic. The treatment by plexr is individualized depending on the type of acne and the patient's medical history. Comedo is the primary lesion of acne. The clinical manifestations can vary from open and closed comedones, macro-comedones, papules, pustules, cysts, nodules to scars. For acne's treatment, topical formulations and systemic therapies are used, such as antibiotics, isotretinoin and hormonal therapies for several months. It is necessary to remove comedones (comedo extraction). It seems that the longer inflammation remains, the more the risk of scarring and pigmentation increases. For the treatment of acne scars, chemical peelings and lasers are used more often. However, now, the Plexr is an innovative way to treat any type of acne with great results. It is a handheld microsurgical device which uses a small electric arc in order to increase the temperature and induce selective sublimation of the keratinocytes without affecting the deeper skin layers. Histological studies carried out by Prof. Antonio

Scarano of the University of Chieti (experiments in rabbits of N. Zealand) and Prof. Vlachodimitropoulos Dimitris of the University of Athens (on human tissue), shows that it doesn't sublimate the basal membrane of the skin. Professor Fippi, who has thirty years of experience in electrosurgery and is the President of the Italian Society of Aesthetic Medicine and non-invasive surgery, used the operating mode of the natural phenomenon of lightening and together with the Engineer Giancarlo Millevolte, implemented the idea by creating a plasma generator inside the machine (plasma = the fourth state of matter). In that way the treatment is applied safely to the patient. Practically, it seems that Plexr sublimates the accumulated keratinocytes that contribute to the obstruction of the pilosebaceous follicle and that also reduces the number of Propionibacterium acnes. Therefore it can act very effectively against inflammation. In addition, it eliminates comedones, cysts and nodules, without the risk of scarring which existed with the applied method of electrocautery - electrode dessication until now. It is also an excellent method of new collagen formation and could be very useful in treating acne scars. The sublimation of the keratinocytes leads to the increase of the absorption of topical treatments, improving their efficacy. Therefore, it is possible to avoid systemic treatment, which lasts for many months and has many potential side effects, and use the PLEXR treatment whose results are faster and last longer.

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Purpose of the study

It is known that some cases of acne are very difficult to treat. Many patients have relapses and sometimes patients cannot receive long-term systemic therapies because of the side effects. Therefore, we applied the technique of Plexr whose technology provides adequate security without causing damages to the deep tissues or other side effects that could worry the patients.

Methodology

30 patients with acne (10 men and 20 women) aged 14-45 years consented to be treated with PLEXR as an innovative alternative technique. 23 people had tried to treat acne with medication (local and systemic treatment) but continued to relapse. Seven people would be treated for acne for the first time.

We used the white device (light therapy) on every type of acne. Mild types of acne were treated with 1-3 sessions every 15 days. Types of medium severity were treated with 3-5 sessions and severe types with 6- 10 sessions. The first 3

sessions every 15 days interval and the next ones every 30 days.

Management-preparation

Before treatment (Picture 1), we remove patient make-up and clean thoroughly with antiseptic. We apply, using the white device, microspots (Picture 2) in the peripheria of the pustular, cystic or nodular lesion and one spot in the center of the lesion. Only one spot in the centre of the comedones. After the treatment, we observed a two to three days waiting period for the scabs, created by sublimation, to fall off and almost 30 days for the erythema's gradual reduction and the complete skin restoration. The sessions are repeated as long as there are active lesions, and after the absence of lesions, the effect is maintained by the combination of topical treatment.

Number of sessions

10 persons needed 1-3 sessions (Picture 3A & 3B) to reach absence of lesions, 15 needed 3-5 sessions and the remaining 5 persons 8-10 sessions.

Picture 1: Persistent Acne Before Treatment



Source: Geleki Stamatina, MD

Picture 2: During Microspots Plexr



Source: Geleki Stamatina, MD

Picture 3A: After 3 sessions (treatment with Plexr)



Source: Geleki Stamatina, MD

Picture 3B: After 3 sessions (treatment with Plexr)

Source: Geleki Stamatina, MD

Results

After the application of the technique in 30 patients, it was found that there was no relapse in any of the patients, and no side effects (dyschromias, scars, hyperpigmentation, hypopigmentation) as may occur by the application of lasers and peelings. With Plexr apparatus, we managed to eliminate acne without systemic medication and have 100% of the desired result.

Discussion

Acne is a chronic disease that occurs in significant number of people and in many cases, its treatment is particularly difficult. For this reason, any method that can promise good results is a challenge, especially if they are no side effects. Plexr gives excellent results in difficult acne cases, without any particular concern for the patients beyond the momentary burning sensation during treatment.

Conclusion

In conclusion, Plexr is an alternative way of treating acne without the need of systemic medication. Acne as a chronic inflammatory skin disease, could benefit patients who become ill, after treatment PLEXR with good and lasting results. This results that treatment can be optimized and last longer with the combination of topical treatment (For example topical retinoids).

References

1. Chang YC, Yang SF, Tai KW, Chou MY, Hsieh YS. Increased tissue inhibitor of metalloproteinase-1 expression and inhibition of gelatinase A activity in buccal mucosal fibroblasts by arecoline as possible mechanisms for oral submucous fibrosis.
2. Denton CP, Abraham DJ. Transforming growth factor-beta and connective tissue growth factor: key cytokines in scleroderma pathogenesis.
3. Fisher, G.J., Wang, Z.Q., Datta, S.C. et al (1977). Pathophysiology of premature skin aging induced by ultraviolet light. *N. Engl. J. Med.*; 337(20): 419-29; see instead Fisher.
4. Genova M.L, Baracca A., Biondi A., Casalena G., Faccioli M., Falasca A.I, Formiggini G., Sgarbi G., Solaini G., Lenaz G (2008). Is supercomplex organization of the respiratory chain required for optimal electron transfer activity? *Biochim. Biophys. Acta.* 1777(7-8), 740-6.
5. Ghersetich I., Comacchi C, Lotti T. Ringiovanire la pelle (1999): peeling, dermoabrasione, laser. In. *Dermatologia e medicina interna*. Eds. G. Palminteri;, R. Scerrato, T. Lotti, M. Brai. Casa Editrice Mattioli Pavia, pp1349-1355.
6. Ghersetich I, Teofoli P, Ribuffo M, Lotti T. Chemical peelings..Eds. A.D. Katsambas, T.M. Lotti Springer, pp 645-656.
7. Hackenbrock C.R., Chazotte B., Gupte S.S. (1986), The random collision model and a critical assessment of diffusion and collision in mitochondrial electron transport. *J. Bioenerg. Biomembr.* 18, 331-368.
8. IL PLEXR Medical Device, CE-0434 Devices for Dermatological and Plastic Microsurgery.
9. Jahns AC, Lundskog B, Ganceviciene R et al (2012). An increased incidence of Propionibacterium acnes biofilms in acne vulgaris: a case control study. *Br J Dermatol*; 167:50-8.
10. Lesley J, Hascall VC, Tammi M, Hyman R. Hyaluronan binding by cell surface CD44.
11. M. Ceccarelli Invecchiamento generale e cutaneo in medicina estetica.
12. McFarland R., Taylor R.W., Turnbull D.M (2007). Mitochondrial disease--its impact, etiology, and Pathology. *Curr. Top. Dev. Biol.* 77 113-155.
13. Schägger H., Pfeiffer K (2001). The ratio of oxidative phosphorylation complexes I-V in bovine heart mitochondria and the composition of respiratory chain supercomplexes. *J. Biol. Chem.* 276, 37861-37867.
14. Trattato di medicina estetica Professor Alberto Massirone edizioni Piccin.
15. Tsioumas Sotiris, Georgiadou Irini & Ntountas Ioannis (2014), Noninvasive upper Blepharoplasty in relation to surgical blepharoplasty. *Pinnacle Medicine & Medical Sciences*, 1 (5), 436-440.

16. Tsioumas Sotiris, Georgiadis Nikolaos & Georgiadou Irini (2014), Plexr: The Revolution In Blepharoplasty. Pinnacle Medicine & Medical Sciences, 1 (5), 423-427.
17. Zouboulis CC, Seltman H, Neitzel H, Orfanos CE (1999), Establishment and characterization of an immortalized human sebaceous gland cell line (SZ95). J Invest Dermatol; 113:1011-20.
18. Zouboulis CC (2004). Acne and sebaceous gland function. Clin Dermatol;22: 360-366.