

© Journal of Cutaneous and Aesthetic Surgery. 2021;14:191-202.

An Innovative Approach of Treating Acne Scars Using Bipolar Rotational Stamping and Monopolar Criss-cross Technique with Insulated Microneedling Radiofrequency in Asians

Anuj Pall¹, Shivani Pall¹

¹ Department of Lasers, Escallent Institute of Lasers and Aesthetic Medicine (EILAM), Gurugram, Haryana, India

Introduction: Microneedling radiofrequency (MNRF) using insulated microneedles offers a great advantage to overcome the limitations of fractional lasers such as achieving greater depth, long downtime, and high risk of postinflammatory hyperpigmentation (PIH). Aims: The aim of this study was to assess the efficacy and safety of a novel multiple depth bipolar rotational stamping and monopolar criss-cross method (Wosyet vital technique) with MNRF using insulated needles for the improvement of facial acne scars in Asians.

Materials and Methods: Thirty-two patients (20 females, 12 males, average age 30.3 years) with facial atrophic acne scars were treated with insulated MNRF by applying Wosyet vital technique. Most of the patients started noticing improvement in 4–6 weeks after the first session. All patients underwent four sessions at 1-month interval. Outcome assessments included subjective and physician evaluation of acne scars, pores, smoothness, tightness, and overall appearance. Objective assessment was determined by Goodman and Baron's quantitative and qualitative analysis of the acne scars.

Results: All subjects noticed at least 30%–90% (mean--62.50%) improvement in acne scars, whereas unbiased physicians graded 40%–80% (mean--58.44%) at a 6-month follow-up visit. The mean Goodman and Baron's score decreased significantly from pre- to posttreatment. All patients reported 30%–90% (mean--61.88%) improvement in facial contour and skin tightening. Many patients observe improvement in the open pores as well.

Conclusion: The possible explanation of improvement in the global appearance of skin and acne scars is the application of both monopolar and bipolar RF in the dermis through insulated microneedles. We did not find PIH after this technique in Asian patients despite of more aggressive treatment parameters and several treatment sessions.

*Source : J Cutan Aesthet Surg 2021;14:191-202.

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© The Journal of Clinical and Aesthetic Dermatology. 2020 Dec; 13(12): 27–28.

Combination Therapy Using Radiofrequency Microneedling and Corticosteroids for Hypertrophic Scars: A Case Report

Margit Juhasz^{1,2,3}, Nathan Fackler^{1,2,3}, Christine Pham^{1,2,3},
Natasha Atanaskova Mesinkovska^{1,2,3}

¹ Drs. Juhasz and Mesinkovska are with the Department of Dermatology at the University of California-Irvine in Irvine, California.

² Mr. Fackler is also with Georgetown University's School of Medicine in Washington, D.C.

³ Ms. Pham is with the University of California-Irvine School of Medicine in Irvine, California.



Dysregulated scar formation can cause hypertrophic scarring, a difficult entity to treat. Although fractionated lasers are a popular therapy for hypertrophic scars, laser-induced epidermal damage might cause pigmentary changes in individuals with darker skin tones. Radiofrequency microneedling delivers ablative energy directly to the dermis and is safe for use in such patients. We present a case of hypertrophic scarring in a patient with Fitzpatrick Skin Type IV treated with a combination of radiofrequency microneedling, topical and intralesional corticosteroids, and intralesional onabotulinumtoxinA. Three weeks posttreatment, scars were significantly improved in both color and texture. The patient did not report any side effects. Based on these results, this novel combination therapy appears to be a promising treatment modality for hypertrophic scars in patients with Fitzpatrick Skin Types IV to VI. However, further large-scale studies will need to be completed to determine long-term efficacy and possible adverse events.

*Source : J Clin Aesthet Dermatol. 2020 Dec; 13(12): 27–28.

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© Journal of Cosmetic Dermatology. 2020 Oct; 19(10):2566-2571.

A Split-Face Comparison of a Fractional Microneedle Radiofrequency Device and Fractional Radiofrequency Therapy for Moderate-to-Severe Acne Vulgaris

Rong Zeng¹, Yuzhen Liu¹, Wenwen Zhao¹, Yin Yang¹, Qiuju Wu¹, Min Li, Tong Lin¹

¹ Cosmetic lasers, Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College, Nanjing, China

Purpose: Radiofrequency equipment, including invasive fractional microneedle radiofrequency (FMR) and noninvasive fractional radiofrequency (FR), has facilitated progress in the field of active acne treatment, but clinical data are limited. This study aimed to compare the efficacy and safety of FMR and FR in the treatment of moderate-to-severe acne vulgaris.

Methods: Ten patients with moderate-to-severe acne were enrolled in a 24-week, prospective, single-blind, randomized, comparative clinical trial with a split-face design. Fractional microneedle radiofrequency treatment was provided on one side of the face and FR on the opposite side. Three consecutive treatments were performed at 4-week interval. Objective assessment of efficacy was performed using the Acne Severity Index (ASI), and acne inflammatory lesions and noninflammatory lesions were evaluated.

Results: After the first treatment, ASI and both inflammatory and noninflammatory lesions of the FMR-treated side were improved to a greater degree than the FR-treated side. Patients' subjective satisfaction was also better regarding the FMR-treated side. After subsequent treatments, efficacy improves for both groups, and no significant differences in the above efficacy parameters between the two groups were observed. Pain scores were significantly higher for the FR-treated side than the FMR-treated side.

Conclusion: Fractional microneedle radiofrequency is faster and more effective than FR for the treatment of moderate and severe acne after only one treatment. However, after several treatment sessions, both FMR and FR proved to be safe and effective for long-term treatment of moderate-to-severe acne. Therefore, invasive radiofrequency, such as FMR, or noninvasive radiofrequency, such as FR, can successfully treat active acne.

*Source : J Cosmet Dermatol. 2020 Oct; 19(10):2566-2571.

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© Dermatologic Surgery. 2020 Jun; 46(6):796-802.

Combination Therapy of Microneedle Fractional Radiofrequency and Topical Poly-Lactic Acid for Acne Scars: A Randomized Controlled Split-Face Study

MK An¹, EH Hong¹, SB Suh², EJ Park¹, KH Kim¹

¹ Department of Dermatology, College of Medicine, Hallym University, Anyang, Korea.

² SeoASong Dermatologic Clinic, Seoul, Korea.



Background: Acne scarring occurs at a young age and causes distress for many patients. Various treatment modalities have been tried.

Objective: This study investigated the efficacy of combination therapy with topical poly-lactic acid and microneedle fractional radiofrequency (MFRF) for acne scars.

Materials and methods: Patients with acne scars on both the cheeks were included. Poly-lactic acid was applied to the acne scars on one side of the face before MFRF treatment. The other side of the face was treated with MFRF and normal saline. Patients received 3 treatment sessions and were evaluated based on visual assessment and patient satisfaction. After the last treatment, objective scar assessment of scar smoothness, size, brightness, and overall improvement was performed.

Results: Both acne scar assessment scores and patient satisfaction were better with combination therapy ($p = .036$ and $p = .009$, respectively) than with monotherapy. Combination therapy resulted in significantly better efficacy for scar smoothness ($p < .001$), scar size ($p = .003$), and overall improvement ($p < .001$), but not for brightness ($p = .151$).

Conclusion: Combination therapy resulted in significantly better clinical outcomes, including better scar smoothness and smaller scar size. Therefore, we believe this combination therapy is a safe and effective treatment for acne scars.

*Source : Dermatol Surg 2020 Jun; 46(6):796-802.

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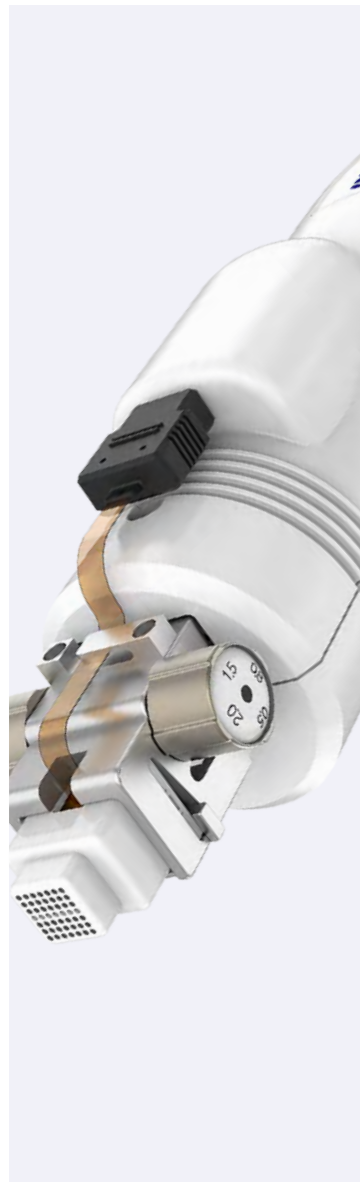
© Facial Plastic Surgery Clinics of North America, Volume 28, Issue 1, Feb 2020, Pages 1-7.

Microneedling Options for Skin Rejuvenation, Including Non-temperature controlled Fractional Microneedle Radiofrequency Treatments

Dana Alessa ¹, Jason D Bloom ²

1 King Saud bin Abdulaziz University for Health Sciences (KSAU-HS), PO Box 3660, Riyadh 11481, Saudi Arabia.

2 Bloom Facial Plastic Surgery, Two Town Place, Suite 110, Bryn Mawr, PA 19010, USA; Department of Otorhinolaryngology-Head & Neck Surgery, University of Pennsylvania, 3400 Civic Center Blvd, South Pavillion 3rd Floor, Philadelphia, PA 19104, USA.



The use of microneedling with or without radiofrequency continues to expand in aesthetics. There are now many different devices available that have multiple indications, unique protocols, and low side effect profiles.

*Source : Facial Plastic Surgery Clinics of North America, Volume 28, Issue 1, February 2020, Pages 1-7. [VIEW ▶](#)

© Open Access Macedonian Journal of Medical Sciences. 2019, Jan 17;7(2):192-194.

Successful Treatment of Facial Atrophic Acne Scars by Fractional Radiofrequency Microneedle in Vietnamese Patients

Cuc Nguyen Thi Kim ¹, Lan Pham Thi ^{1,2}, Thuong Nguyen Van ¹, Phuong Pham Thi Minh ¹, Minh Vu Nguyet ^{1,2}, Mai Le Thi ¹, Nghi Dinh Huu ¹, Khang Tran Hau ¹, Marco Gandolfi ³, Francesca Satolli ³, Claudio Feliciani ³, Aleksandra Vojvodic ⁴, Michael Tirant ^{5,6}, Torello Lotti ⁵

1 National Hospital of Dermatology and Venereology, Hanoi, Vietnam.

2 Hanoi Medical University, Hanoi, Vietnam.

3 Unit of Dermatology, University of Parma, Parma, Italy.

4 Department of Dermatology and Venereology, Military Medical Academy of Belgrade, Belgrade, Serbia.

5 University of Rome G. Marconi, Rome, Italia.

6 Psoriasis Eczema Clinic, Melbourne, Australia.



Aim: This study aimed to evaluate the effect of the fractional Radiofrequency microneedle treatment for facial atrophic acne scars.

Methods: A group of 52 patients were recruited for the study. Goodman & Baron's acne scar grading system was used for assessment at their first visit and the end of 3 months after the last treatment session.

Results: The results displayed that 73.1% of patients have the improvement of the Goodman scar level after four times of treatment. The Goodman and Baron scar point mean was reduced from 16 ± 7.6 to 5.6 ± 5.0 ($p < 0.01$). Post-inflammatory hyper-pigmentation was experienced in 5 patients (9.6%).

Conclusion: The microneedle fractional Radiofrequency is an effective treatment method of facial atrophic acne scars, with minor side effects and a short downtime.

*Source : Open Access Maced J Med Sci. 2019, Jan 17;7(2):192-194.

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© Dermatologic Surgery. 2018 Jul; 44(7):964-970.

A Prospective Study of the Safety and Efficacy of a Microneedle Fractional Radiofrequency System for Global Facial Photoaging in Chinese Patients

Mengli Zhang¹, Jing Fang, Qiuju Wu, Tong Lin²

¹ All authors are affiliated with the Department of Cosmetic Laser Surgery, Hospital of Dermatology, Chinese Academy of Medical Sciences, Peking Union Medical College, Nanjing, China.

² All authors are affiliated with the Department of Cosmetic Laser Surgery, Hospital of Dermatology, Chinese Academy of Medical Sciences, Peking Union Medical College, Nanjing, China.

Background: Facial photoaging has become a major cosmetic concern, and the microneedle fractional radiofrequency system (MFRS) is a novel method for rejuvenation that combines radiofrequency and microneedles.

Objective: This study prospectively evaluated the efficacy and safety of an MFRS in the treatment of facial photoaged skin in Chinese patients.

Materials and methods: Twenty-seven patients with moderate facial photoaging were recruited and received 3 treatments at 4-week intervals. Blinded clinical assessment was performed by 2 independent dermatologists on a 5-point global photoaging scale (GPS). Patients were also questioned on the extent of improvement of rhytides, skin tightening, and complexion with a 4-point global aesthetic improvement scale (GAIS) and satisfaction based on a 5-point scale. Adverse events and pain scores were also evaluated.

Results: Compared with the baseline, there was a significant improvement in facial photoaged skin after 3 treatments, and these positive outcomes were maintained up to the 6-month follow-up, according to the GPS and GAIS scores. Most patients were satisfied with the treatment and reported mild to moderate pain and adverse effects.

Conclusion: This MFRS is effective for facial skin rejuvenation in Chinese patients. The therapy also seems safe and well tolerated.

*Source : Dermatol Surg. 2018 Jul; 44(7):964-970.

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© Dermatologic Surgery. 2015 May; 41(5):615-22.

Treatment of Periorbital Wrinkles with a Novel Fractional Radiofrequency Microneedle System in Dark-Skinned Patients

Seung Jae Lee^{*}, Jung-In Kim[†], You Jin Yang[†], Jae Hui Nam[†], Won-Serk Kim[†]

^{*} CleanUp Dermatologic Clinic, Seoul, Korea.

[†] Department of Dermatology, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea.

Background: Periorbital wrinkles as a result of photoaging are a frequent cosmetic concern. Recently, the fractional radiofrequency microneedle system was introduced as a new device for facial rejuvenation, and it has received much recognition for its unique "deep dermal heating with epidermal sparing" feature.

Objective: The purpose of this study was to examine the clinical efficacy and safety of the system for the treatment of periorbital wrinkles in Korean patients.

Materials and methods: Twenty Korean patients (Fitzpatrick skin Type IV-V) with varying degrees of periorbital wrinkles were enrolled in this study. The patients were treated 3 times at 4-week intervals with the system. Changes in periorbital wrinkling were evaluated by 2 independent experts with digital images of the subjects' faces using a 5-point Wrinkle Assessment Scale. At the end of the study, the patients rated their satisfaction with the overall treatment outcome on a numerical scale.

Results: All patients completed the treatment regimen and were satisfied with the treatment. Most patients improved according to clinical and photographic assessments performed 6 months after the treatment. Two patients (10%) reported mild hyper-pigmentation.

Conclusion: The system may be an effective and safe treatment option for periorbital wrinkles in dark-skinned Korean patients.

*Source : Dermatol Surg. 2015 May; 41(5):615-22.

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The Efficacy in Treatment of Facial Atrophic Acne Scars in Asians with a Fractional Radiofrequency Microneedle System

V Vejjabhinanta¹, R Wanitphakdeedecha, P Limtanyakul, W Manuskitti

¹ Department of Dermatology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand.



Background: Treatment of acne scars remains a challenge to dermatologists. Multiple modalities have been employed with variable results and adverse effects.

Objective: To determine the efficacy and adverse effects of a fractional radiofrequency microneedle system (FRMS) on acne scars in Asians at 1-, 3- and 6-month follow-up visits after treatment.

Methods: Thirty subjects with atrophic acne scars for more than 6 months were enrolled in the study. All volunteers were treated with a FRMS on affected areas. The subjects were treated for a total number of three treatment sessions at 1-month intervals. Subjective assessments were obtained at baseline, 1, 3 and 6 months after the last treatment session by self-evaluation and two blinded dermatologists. Objective evaluation using an ultraviolet A-light video camera was also performed. In addition, pain scores, immediate reactions, healing times and other adverse effects were evaluated.

Results: Twenty-six subjects with skin phototypes III-V completed treatment protocol. The average mean scar age was 7 years (range: 0.5-15 years). At 6-month follow-up visit, the majority of the subjects (42.3%) reported a 26-50% improvement on their acne scars. Percent reduction in scar volume corresponded to clinical evaluation. Adverse reactions of the treatment included pain, immediate oedema/erythema, minimal scabbing and transient pigmentary alteration on treated areas. The average pain score was 5.6 of 10. Worsening of skin texture or new scar formation was not observed in any subjects.

Conclusion: Fractional radiofrequency microneedle system is a safe and effective device for treating acne scars in Asians with minimal risk of downtime and adverse effects.

*Source : J Eur Acad Dermatol Venereol. 2014 Sep; 28(9):1219-25.

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© Medical Lasers; Engineering, Basic Research, and Clinical Application. 2014; 3(1): 5-10.

Consensus Recommendations on the Use of a Fractional Radiofrequency Microneedle and Its Applications in Dermatologic Laser Surgery

Seung Jae Lee¹, Un-Cheol Yeo², Seong Ho Wee³, Jae Hong Shim⁴, Kee-Young Roh⁴, Ee Seok Lim⁵, Chun Pill Choi⁶, Suk Bae Seo⁷, Geun-Soo Lee⁸, Tae-Heung Kim⁹, Won-Serk Kim¹

¹ Department of Dermatology, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea.

² S&U Dermatologic Clinic, Seoul, Korea.

³ Dr. Wee's Dermatological Clinic, Seoul, Korea.

⁴ CNP Dermatologic Clinic, Seoul, Korea.

⁵ Lim ee seok Thema Dermatologic Clinic, Seoul, Korea.

⁶ Skyfeel Dermatologic Clinic, Seoul, Korea.

⁷ SAS Dermatologic Clinic, Seoul, Korea.

⁸ Srs. Woo & Hann's Skin & Laser Center, Seoul, Korea.

⁹ White-Line Skin Clinic & Research Center, Changwon, Korea



Background and Objectives: Fractional radiofrequency micro-needle (FRM) has revolutionized the way we treat a variety of cutaneous conditions using radiofrequency technology. A comprehensive guide is required for clinicians using this technology in treatment of a variety of skin conditions in various skin types.

Materials and Methods: The guidelines were made from a recent round table discussion among experienced clinicians and a review of recent medical literature.

Results: We concluded that FRM is a safe and effective modality for treatment of conditions commonly encountered in dermatology, and recommended guidelines for optimal treatment of several skin conditions on and off the face using FRM.

Conclusion: We developed reproducible guidelines for most effective treatment of a variety of skin conditions using FRM. Conduct of large, multicenter trials will be needed for further optimization of treatment parameters.

*Source : Medical Lasers; Engineering, Basic Research, and Clinical Application 2014; 3(1): 5-10.

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© Journal of Dermatology. 2014 Jul;41(7):586-91.

Treatment of Acne Vulgaris with Fractional Radiofrequency Microneedling

Sang Tae Kim ¹, Kang Hoon Lee, Hyung Jun Sim, Kee Suck Suh, Min Soo Jang

¹ Department of Dermatology, Kosin University College of Medicine, Busan, South Korea.



Fractional radiofrequency microneedling is a novel radiofrequency technique that uses insulated microneedles to deliver energy to the deep dermis at the point of penetration without destruction of the epidermis. It has been used for the treatment of various dermatological conditions including wrinkles, atrophic scars and hypertrophic scars. There have been few studies evaluating the efficacy of fractional radiofrequency microneedling in the treatment of acne, and none measuring objective parameters like the number of inflammatory and non-inflammatory acne lesions or sebum excretion levels. The safety and efficacy of fractional radiofrequency microneedling in the treatment of acne vulgaris was investigated. In a prospective clinical trial, 25 patients with moderate to severe acne were treated with fractional radiofrequency microneedling. The procedure was carried out three times at 1-month intervals. Acne lesion count, subjective satisfaction score, sebum excretion level and adverse effects were assessed at baseline and at 4, 8 and 12 weeks after the first treatment as well as 4, 8 and 12 weeks after the last treatment. Number of acne lesions (inflammatory and non-inflammatory) decreased. Sebum excretion and subjective satisfaction were more favorable at every time point compared with the baseline values ($P < 0.05$). Inflammatory lesions responded better than non-inflammatory lesions ($P < 0.05$). Adverse effects such as pinpoint bleeding, pain and erythema were noted, but were transient and not severe enough to stop treatment. Fractional radiofrequency microneedling is a safe and effective treatment for acne vulgaris.

*Source : Journal of Dermatology 2014; 41: 586-591.

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© Journal of Drugs in Dermatology. 2013 Sep; 12(9):1044-9.

Surgical corner. Evaluation of the Wound Healing Response after Deep Dermal Heating by Fractional Micro-Needle Radiofrequency Device

So Dug Lim ^a, Un Cheol Yeo ^{b,c}, Il Hwan Kim ^d, Chong Won Choi ^c, Won Serk Kim ^c

^a Department of Pathology, Konkuk University School of Medicine and Konkuk University Medical Center, Seoul, Korea

^b S&U Dermatologic Clinic, Seoul, Korea

^c Department of Dermatology, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea

^d Department of Dermatology College of Medicine Korea University, Korea



Background: Fractional Radiofrequency Microneedles (FRM) are minimally invasive devices that use inserting bipolar radiofrequency for deep dermal heating, has been introduced. We investigated the tissue response after FRM according to different energy levels in porcine skin.

Methods: Porcine back skin was used in the study. A FRM device was composed of 49 insulated needles. Needles were vertically inserted with 1.5mm depth and four different energy levels were used to examine wound healing response chronologically. Histologic evaluation was done by hematoxylin & eosin (H&E) and heat shock proteins (HSP) 47 staining for immediately after, 2 days after, 14 days after, 28 days after and 10 weeks after the procedure. RT-PCR was done for various cytokines including HSP47, HSP72, metalloproteinase (MMP), and extracellular matrix (ECM) proteins.

Results: FRM treatment generated a thermally coagulated zone localized in the reticular dermis, without damaging the epidermis. The coagulation necrosis zone in H&E staining was replaced by new collagen tissue over 10 weeks. RT-PCR studies revealed an increase in HSP, MMPs, and ECM proteins. In the high energy level procedure, an increased number of fibroblasts were found.

Conclusion: FRM treatment induced a dermal remodeling process including neocollagenesis in the deep dermis. From this result, FRM is expected to provide a good and positive efficacy for skin rejuvenation.

*Source : J Drugs Dermatol. 2013 Sep; 12(9):1044-9.

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© Dermatologic Surgery. 2012 Jul;38(7 Pt 1):1017-24.

Evaluation of the Clinical Efficacy of Fractional Radiofrequency Microneedle Treatment in Acne Scars and Large Facial Pores

Cho, Soo Ick¹; Chung, Bo Young¹; Choi, Min Gyu²; Baek, Ji Hwoon³; Cho, Hee Jin¹; Park, Chun Wook¹; Lee, Cheol Heon¹; Kim, Hye One¹

¹ Department of Dermatology, College of Medicine, Hallym University, Seoul, Korea

² Department of Computer Science, Kwangwoon University, Seoul, Korea

³ Dermapro/Skin Research Center, Seoul, Korea

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Background: Fractional technology overcomes the problems of ablative lasers, such as inaccurate depth control and damage to the epidermis. Minimally invasive fractional radiofrequency microneedle devices allow for more-selective heating of the dermis.

Objective: To evaluate the clinical efficacy of fractional radiofrequency microneedle (ERM) treatment in acne scars and large facial pores.

Materials and methods: Thirty patients with acne scars and large facial pores were enrolled. Bipolar radiofrequency energy was delivered to the skin through the electrodes of the FRM device. Skin lesions were evaluated according to grade of acne scars, Investigator Global Assessment of large pores, skin surface roughness, transepidermal water loss (TEWL), dermal density, microscopic and composite image, sebum measurement, and questionnaires regarding patient satisfaction.

Results: The grade of acne scars and Investigator Global Assessment of large pores improved in more than 70% of all patients. Skin surface roughness, dermal density, and microscopic and composite images also improved, whereas TEWL and sebum measurement did not change.

Conclusion: Clinical improvement from FRM treatment appeared to be related to dermal matrix regeneration. FRM treatment may be effective in improving acne scars and facial pores.

*Source : Dermatol Surg. 2012 Jul;38(7 Pt 1):1017-24.

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© Radiofrequency in Cosmetic Dermatology. Aesthet Dermatol. Basel, Karger, 2015, vol 2, pp 62-69.

Minimally Invasive Radiofrequency

Mulholland R.S.^a, Halachmi S.^b

^a Private Plastic Surgery Practice, Toronto, Ont., Canada.

^b Herzelia Dermatology and Laser Center, Herzelia Pituach, Israel.



Minimally invasive radiofrequency is most commonly applied in a fractional manner (fractional radiofrequency, or FRF). The approach relies on introduction of a set of fine needle electrodes into the skin, which are then activated to deliver energy. Its role is similar to that of fractional lasers, namely to induce neocollagenesis by thermal effects within the dermis. The fractional thermal injury of deep dermal collagen induces a vigorous wound healing process with dermal remodeling and the generation of new collagen, elastin and hyaluronic acid. The major benefit of minimally invasive FRF is that, depending on the needle configuration and insulation, energy can be deposited directly within the dermis with no thermal effects to the epidermis. Side effects are minimal and typically include transient erythema lasting approximately 2 days. It is a viable nonsurgical therapeutic option for the improvement of numerous cosmetic indications including skin rejuvenation, facial skin laxity, rhytides, acne scars, large pores, and photoaged skin.

*Source : Radiofrequency in Cosmetic Dermatology. Aesthet Dermatol. Basel, Karger, 2015, vol 2, pp 62-69

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© BioMed Research International. 2016;2016:6939018.

Thermal Response of In Vivo Human Skin to Fractional Radiofrequency Microneedle Device

Woraphong Manuskiatti¹, Penvadee Pattanaprichakul¹, Siriluk Inthasotti¹, Panitta Sitthinamsuwan², Suchanan Hanamornroongruang², Rungsima Wanitphakdeedecha¹, Sorawuth Chu-ongsakol³

- 1 Department of Dermatology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand
- 2 Department of Pathology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand
- 3 Division of Plastic Surgery, Department of Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand



Background: Fractional radiofrequency microneedle system (FRMS) is a novel fractional skin resurfacing system. Data on thermal response to this fractional resurfacing technique is limited. Objectives. To investigate histologic response of in vivo human skin to varying energy settings and pulse stacking of a FRMS in dark-skinned subjects.

Methods: Two female volunteers who were scheduled for abdominoplasty received treatment with a FRMS with varying energy settings at 6 time periods including 3 months, 1 month, 1 week, 3 days, 1 day, and the time immediately before abdominoplasty. Biopsy specimens were analyzed using hematoxylin and eosin (H&E), Verhoeff-Van Gieson (VVG), colloidal iron, and Fontana-Masson stain. Immunohistochemical study was performed by using Heat Shock Protein 70 (HSP70) antibody and collagen III monoclonal antibody.

Results: The average depth of radiofrequency thermal zone (RFTZ) ranged from 100 to 300 µm, correlating with energy levels. Columns of cell necrosis and collagen denaturation followed by inflammatory response were initially demonstrated, with subsequent increasing of mucin at 1 and 3 months after treatment. Immunohistochemical study showed positive stain with HSP70.

Conclusion: A single treatment with a FRMS using appropriate energy setting induces neocollagenesis. This wound healing response may serve as a mean to improve the appearance of photodamaged skin and atrophic scars.

*Source : BioMed Research International. 2016;2016:6939018.

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The Clinical Efficacy and Statistical Evaluation of INTRAcel Treatment

Takashi Takahashi

Dermatologist Takahashi Clinic, Shibuya, Tokyo, Japan



Background: Minimally invasive Fractional Radiofrequency Microneedles(FRM) device is recently introduced. The device gives selective heating in the dermis using bipolar RF (or monopolar RF) through microneedles. This study is to demonstrate clinical improvement following FRM.

Methods: 60 subjects with scar, facial laxity and large pore were enrolled. 60 patients were treated with a minimally-invasive FRM device (INTRAcel). Bipolar RF energy was delivered through 49 micro-needle electrodes deployed into the reticular dermis from the papillary dermis vertically to the skin surface. Only subjects consenting to longitudinal follow-up during the study were enrolled to observe the improvement as time went by.

Results: As the result of 3 months follow-up, all patients did not have any problems during the period and any adverse events or complications weren't observed. Patient satisfaction was high with 83.3%. Self-assessment of clinical outcome showed moderate to significant improvement in skin laxity, scar and pore.

Conclusion: Bipolar RF treatment makes deep dermal fractional heating in targeted deeper dermis. Clinical improvement by FRM treatment is related to collagen and elastin fiber which are generated by wound healing process. These results suggest Fractional Radiofrequency Microneedles treatment may become an important option for the treatment of facial skin laxity and scars.

*Source : Unique Technology named Fractional RF Microneedle™, Jaysys

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Combining Fractional RF Microneedling and Superficial RF Resurfacing

Marge Uibu

Clinic of Aesthetic Dermatology and Plastic Surgery Ihoakatemia, Helsinki, Finland



Recent trends in aesthetic treatments are for a natural and healthy look, less invasive procedures, combined treatments, repetitive treatments, and regular care. The optimal aesthetic treatment should be effective, safe, suitable for different areas of the body, easy to perform, and with minimal recovery time. As ageing is a continuous process, the treatment should also be suitable for repetitive treatments, while reinforcing the natural and healthy look of the skin. Much is being discussed with regard to—if one starts early enough—whether it would be possible to postpone major surgical procedures. However, despite surgery, one still has to treat and maintain the quality of the skin. This article discusses the possibilities of using the INTRAcel platform in skin rejuvenation, acne, enlarged pores, acne scars, scars and stretch marks.

*Source : DERMAL REJUVENATION, PRIME, November 2012

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Histologic Evaluation of Deep Dermal Heating by Fractional Radiofrequency According to Energy Level: A 10-Week Follow up Study

Uncheol Yeo, Doorak Lee, Sodug Lim

S&U Dermatologic Clinic, Seoul, South Korea; Konkuk University, Seoul, South Korea

Background and Objectives: A new device, INTRACEL heating up deep dermis using microneedles of bipolar and monopolar RF in a minimally invasive way; Fractional Radiofrequency Microneedling ("FRM") technology was introduced lately. This study was conducted to see the wound healing response following FRM treatment for both human and porcine skin.

Study Design and Methods: A maximum power of 700W RF can be used on bipolar mode to deliver the thermal energy directly into the dermis. 49 microneedles are diffused to 1cm² areas on its tip, and those needles are insulated except its distal 0.3mm to avoid the thermal damage on the skin surface when it penetrates into skin. 10 healthy patients and aseptically processed a micro-pig were involved in this clinical trial. Healing responses were observed by the time after FRM treatment at various energy levels. Biopsy was conducted to see the wound healing process immediately after the treatment, 2days, 14days, 28days, and 10 weeks post the treatment. H&E stain and HSP47 stain were conducted to see the changes in inflammatory cell, collagen. Also, the study has conducted RT-PCR with the tissue biopsied from Micro-pig covering 10 weeks to see mRNA change of collagen, Heat Shock Proteins (HSPs), and matrix metalloproteinase (MMPs).

Results: No thermal damage was observed on the epidermis and upper dermis except the area the reticular dermis. Denatured collagen column was seen through H&E test. 10 weeks later, the observation clearly showed that the pattern of new collagen was granulated on the area of damaged collagen. The increases were observed in 70 days from the FRM treatment in various inflammatory cytokine, HSPs, procollagen 1, procollagen 3, tropoelastin, and fibrillin through RT-PCR test. Seeing the change due to the energy level used for the treatment, the tissue treated with high level energy showed increase of the number of fibroblast, and the collagen reproduction as well as the replacement of damaged collagen.

Conclusion: FRM leaves minimal damage by its needle penetration on epidermis and upper dermis, and fractional deep dermal heating is possible in the lower dermis. Such damaged collagen is healed by new collagen being granulated as time passes, and fibroblast proliferation was seen. These conditions are well observed in RT-PCR results, as HSP expressions supporting the production of a new collagen in the tissue stained with HSP antibody. FRM treatment is expected to be good for a tightening, wrinkle reduction, and scar treatment, as it uses various needle depths with the different targets to induce the production of a new collagen and elastin.

*Source : ASLMS 30th Annual Conference, April 14-18, 2010, Phoenix Convention Center, Phoenix, Arizona

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The Effectiveness of Selective Fractional RF Microneedle(INTRAcel) for the Treatment of Telangiectasia

Ayako Ito, Kazuhiro Hayashi, Tomoyuki Matsukura

Matsukura Clinic, Tokyo, Japan



INTRAcel was a groundbreaking device on fractional industry as a machine that combined bipolar RF and fractional Laser together in 2009. 80 patients have been treated with this machine since Oct 2009. 9 patients were male and 71 patients were female. Most of INTRAcel treatments were treated for acne or acne scar and used anesthetic cream for anesthesia before the treatment. Even though a few patients had a minor bleeding during the treatment, their skin was recovered within few days.

Treatment of Earlobe Telangiectasia: The strong confidence came along with fast result since the difference was clearly showed up within a week after the first treatment. Following the first treatment, longer needles were used for the second treatment. 11 weeks later, the patient satisfied greatly with the result on his earlobe telangiectasia.

Telangiectasia Treatment for Face: Referred to the method of this examination, taking micro pictures of patient was planned and molding silicon rubber was used to observe the improvement of the skin at the time of baseline, post 6 weeks and post 3 months. Microscope was used to take pictures and the condition of each observing point was recorded as movie. Then, the effectiveness of telangiectasia was compared and the result was observed. Even though the patient had two treatment, the result was still clear and his skin was continuously improved. Finding from this experiment explained that INTRAcel was an applicable device for telangiectasia.

Conclusion: INTRAcel is an effective treating device for scars, acne scars, skin tightening, and skin rejuvenation as well as telangiectasia. In addition, INTRAcel improved skin texture. As described on this article, most of patients were satisfied with INTRAcel treatment. Therefore, INTRAcel could be an innovative device to treat telangiectasia.

*Source : International Master Course on Aging Skin, Asia 2010

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Open Label Study on the Safety and Efficacy of Fractional Radiofrequency with Microneedle(INTRAcel) on Mild to Severe Acne Scars in Asian Skin

Marie Socouer M. Oblepias

Consultant Dermatologist Acnecure Center, Manila, Philippines



Fractionalized radiofrequency with microneedling (INTRAcel) which gives deep thermal heating without damage to the epidermis. Histological studies have also shown new collagen and elastic fiber formation.

Clinical studies done have shown improvement of scars and skin laxity. Minimal downtime of around 2-3 days with no occurrence PIH after treatment. Adverse events like erythema, swelling and pain are transient and are well tolerated by the patients . FRM offers an effective and safe method for the treatment of mild to severe facial acne scars, telangiectasia, skin texture and laxity in all types of skin including Fitzpatrick III-V (Asian skin).

Jeisy!

*Source : International Master Course on Aging Skin, Asia 2010

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Non-Surgical Face Lifting by INTRAcel : The Future of the Anti-Aging Technology

J.C Poon

Cosmetic Physician & Anti-Aging Specialist Beautiful One Lipodissolve & Laser Centres, Toronto, Canada

INTRAcel can be applied not just face but body as well. Because with laser technology, we also concern about the damage, down time and damaging epidermis. With INTRAcel technology, we are able to bypass epidermis. Therefore, you don't have to worry about complication. Patients worried about micro needles, but within an hour, it is all seals off. They can wash their faces or whatever they want. The only thing to avoid is the sun. And These are my clinical result of INTRAcel treatment. Comparing before and 2 month after photos, the texture and wrinkles were greatly improved.



*Source : International Master Course on Aging Skin, Asia 2010

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Combination Anti-Aging Tx Including INTRAcel

Mikyung Cho

Cosmetic Physician & Anti-Aging Specialist Beautiful One Lipodissolve & Laser Centres, Toronto, Canada



Antiaging Treatment: Aging is the phenomenon that occurs as the skin ages. Elasticity drops, pore widens, wrinkles deepen, skin tone becomes dark, blemish gets thicker, volume declines, making 8-shaped wrinkle and Indian fold gets intensified and falls in, resulting in sagging and marionette line as well as drooping of chin. While it must be good to treat all aging symptoms with one type of treatment, there are different effective treatment for each symptom. In this regard, it is good to receive several treatment at the same time for effective anti-aging. It is recommended to receive fractional treatment for overall aging improvement, get shot of botulinum toxin for wrinkles, feeler shot for fallen or deep wrinkle treatment, to receive Aculift for non-elastic, drooped or bulging contour, and Hydrotoxin for overall skin improvement.

Conclusion: INTRAcel requires low maintenance cost and shows less mark than Fractional treatment. It has advantage of expecting acne prevention effects in addition to clear lifting effects. While INTRAcel only treatment can improve overall skin aging symptoms such as skin tone, texture, fine wrinkles and pore, several kinds of treatment are more effective.

*Source : The 98th Congress of Japan Society of Aesthetic Surgery, 2010

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Acne Treatment by Using INTRAcel

Joonsung Yang

Aroomdawoon Dermatologic Clinic, Jeju Island, Korea

New treatment : INTRAcel

I was hoping that Kobayashi needle develops in several ways which are shorter operation time, Possibility of treating the whole face and treating for anyone. What I found is INTRAcel is similar treatment as Kobayashi needle that uses insulated needle. Basic theory for INTRAcel is that insulated needle gets into the dermis and put RF energy in.

This RF energy destroys aging skin and replace with new connective tissue. So, I used this for patients who want to have face lifting and who want to remove wrinkles or scars. Later on, I could see that there were several cases of having dry skin from my patient and could figure that change of dermis can possibly make production of sebum less due to destroying sebaceous glands at the same time. Then, I start using INTRAcel for ACNE treatment.

One of the key point for INTRAcel is adjustable needle length, so that doctors can use in different power levels and it can apply to various depth of dermis. In other word, doctors are able to use in different depth of dermis and in wide distribution depending on face area.

Since most of sebaceous glands are distributing in 1mm depth area, doctors can start the first pass with 0.8mm needle in level 2 or 3, then do the second pass with 1.5mm needle in level 3 or 4. This will bring the result of destroying sebaceous glands in around 0.5mm based on 1mm depth.

I started to treat patients with this theory and had a successful result. In overall, occurrence of ACNE was decreased and pores have been tightened by decreasing the production of sebum. Also, ACNE scar was getting better as well because regeneration of collagen was expediting by given stimulation. Comparing with Kobayashi needle, Kobayashi might have a little bit stronger result. However, INTRAcel has more advanced treatment because INTRAcel can be used in all over the face .It is possible to treat in any ages. Faster operation time due to using many needles (49). Possible to have preventive effects because treatment can apply not only for infected area, but also for other area.

Treatment was done 3~5 times in monthly period. Since sebum is emitting from sebaceous glands, I asked patients to visit hospital a day after treatment and removed sebum. Patients can be seen some red parts on the face, but it is ok. Actual result will be shown about a week after the treatment and they will have a lot better result from the second operation.

*Source : The 98th Congress of Japan Society of Aesthetic Surgery, 2010

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Evaluation of the Wound Healing Response Post Deep Dermal Heating by Fractional RF : INTRAcel

Uncheol Yeo

S&U Dermatologic Clinic, Seoul, Korea

Background and Objectives: A new device, INTRAcel heating up deep dermis using microneedles of bipolar and monopolar RF in a minimally invasive way; Fractional Radiofrequency Microneedling ("FRM") technology was introduced lately. This study was conducted to see the wound healing response following FRM treatment for both human and porcine skin.

Study Design and Methods: A maximum power of 700W RF can be used on bipolar mode to deliver the thermal energy directly into the dermis. 49 microneedles are diffused to 1cm² areas on its tip, and those needles are insulated except its distal 0.3mm to avoid the thermal damage on the skin surface when it penetrates into skin. 10 healthy patients and aseptically processed a micro-pig were involved in this clinical trial. Healing responses were observed by the time after FRM treatment at various energy levels. Biopsy was conducted to see the wound healing process immediately after the treatment, 2days, 14days, 28days, and 10 weeks post the treatment. H&E stain and HSP47 stain were conducted to see the changes in inflammatory cell, collagen. Also, the study has conducted RT-PCR with the tissue biopsied from Micro-pig covering 10 weeks to see mRNA change of collagen, Heat Shock Proteins (HSPs), and matrix metalloproteinase (MMPs).

Results: No thermal damage was observed on the epidermis and upper dermis except the area the microneedle electrodes passed, but the collagen was damaged within the reticular dermis. Denatured collagen column was seen through H&E test. 10 weeks later, the observation clearly showed that the pattern of new collagen was granulated on the area of damaged collagen. The increases were observed in 70 days from the FRM treatment in various inflammatory cytokine, HSPs, procollagen 1, procollagen 3, tropoelastin, and fibrillin through RT-PCR test. Seeing the change due to the energy level used for the treatment, the tissue treated with high level energy showed increase of the number of fibroblast, and the collagen reproduction as well as the replacement of damaged collagen.

Conclusion: FRM leaves minimal damage by its needle penetration on epidermis and upper dermis, and fractional deep dermal heating is possible in the lower dermis. Such damaged collagen is healed by new collagen being granulated as time passes, and fibroblast proliferation was seen. These conditions are well observed in RT-PCR results, as HSP expressions supporting the production of a new collagen in the tissue stained with HSP antibody. FRM treatment is expected to be good for a tightening, wrinkle reduction, and scar treatment, as it uses various needle depths with the different targets to induce the production of a new collagen and elastin.

*Source : 12th symposium of the Association of Korean Dermatologists, 2009

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Microneedeling Weiterentwickelt

Klaus Fritz

Dermatology and lasercenters Landau and Kandel, Landau, Germany

As yet, ablative lasers are used for skin tightening and resurfacing. But even when used in a fractional operation mode, i.e. only punctual removal of a part of the epidermis, their disadvantages such as pain, delayed wound healing or risk of infection, scarring and persisting erythema cannot be avoided completely.

In contrast, treatment with non-ablative lasers leaves the epidermis intact as the development of heat is restricted to the dermis where it is supposed to lead to fibroblast stimulation and a tightening effect. The above-mentioned side effects can be avoided completely or almost completely with such treatments, but unfortunately their results are also less impressive. Up to now, an alternative to laser treatments has been the micro needling. This treatment method uses needles with a length of 1-2mm which are pressed into the previously anaesthetized skin either by a roller or in stamp form. According to the respective approach, this leads to up to 200 micro injuries per square centimeter which, due to tissue pressure and the superficial penetration depth which only reaches the upper dermis, will immediately close again and thus also avoids the disadvantages of ablative treatments.

Thus, the indications for this method are the same as for fractional CO2 lasers - if not even more widespread because of the pronounced tightening effect: scar treatment, rejuvenation, skin slackening also at the neck, at the arms or after liposuction and, above all, treatment of problem areas at the lips, periorbital and in the d - collet - area. The heat development also induces a reduction of fine telangiectasia in said areas (Study: Ayakoito). Acne scars have been improved by up to 90% after only one session (Study: OBLEPIAS).

Histological examinations showed a significant increase of collagen which started after 28 days and could be definitely proven histologically after 70 days.

The dermis contained thickened and newly produced collagen. Laboratory tests could also prove that a regenerative process started in the treated areas: Tropoelastin, Procollagen 1 and 3 as well as MMP 9 increased significantly.

With this we now have a method at our disposal which has been histologically and biochemically proven and which achieves results that as yet have only been reached with fractional ablative lasers, but which does not entail any of the disadvantages and side effects of ablative lasers anymore.

This method is particularly well suited for the everyday treatment, especially in the dermatology practice, and it follows the patients' trend: achieve a good result with the least invasive treatment.

*Source : Derma Forum

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