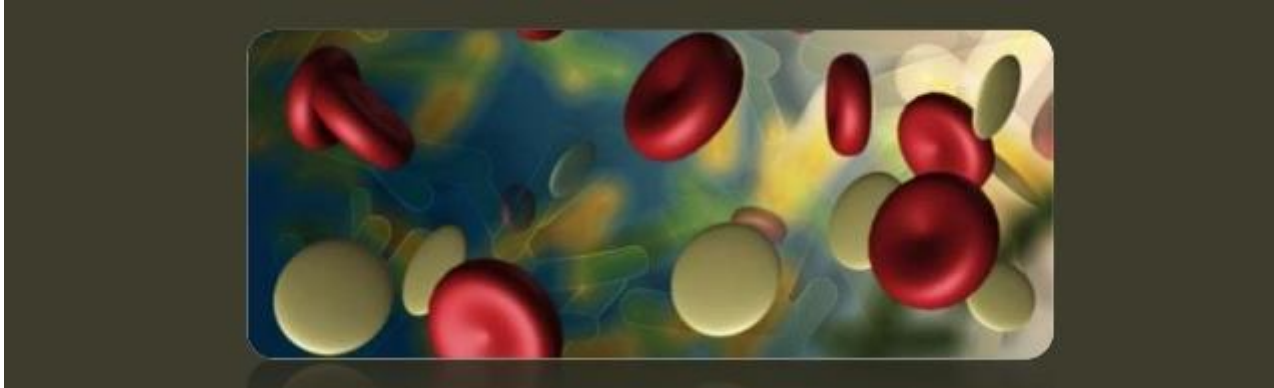


KANITA DAYALI TIP AÇISINDAN PRP ENDİKASYONLARI



*Yasemin Saray
Acıbadem Üniversitesi Tıp Fakültesi
Dermatoloji Anabilim Dalı*

KULLANIM ALANLARI

Alopesi

Akne skarları ve diğer skarlar

Rejuvenasyon ve kırışıklık

Stria

Akut ve kronik yaralar

Deri-yağ greftleri

Kronik ülser

Lipodermatoskleroz

Liken skleroz

ALOPESİ-PRP

- **Alopesi tedavisinde PRP**
 - **33 makale**
 - **2011....İlk makale**
 - **2015-2017...Makalelerin büyük çoğunluğu**
 - **Androgenik alopesi.... Makalelerin çoğu**
 - **Randomize, plasebo kontrollü çalışma...2**
 - **Alopesi areata....4 makale**

PRP'yi Hangi Yöntemle Hazırlayalım?

- **ÇOK SAYIDA Yöntem**
20-60 ml kan+santrifüj
Manuel-ticari kitler
Tek spin, iki spin
Platelet kons. faktörleri farklı
Farklı yöntem
Farklı santrifüj hız ve süreleri

1. Yüksek verimli

Platelet konsantrasyon faktörü: X5-9

2. Düşük verimli

Platelet konsantrasyon faktörü: X1.5-3

Optimal platelet konsantrasyonu: 1 500 000 plt/IL

Platelet konsantrasyon faktörü: 5.4-7.3

Aktivatör Kullanalım mı?

- **Aktivatör var-yok, belirsiz**
- **Aktivatörlü PRP çalışmaları**
- **Borhan ve ark.... Aktivatörsüz PRP**
 - **Kıl yoğunluğunda önemli artış yok**
 - **4. ayda etkinlik değerlendirilmiş**
 - **Diğer çalışmalarda 3. ayda**

Aktivatör eklenmesi faydalı olabilir!!!!

Table 2 Comparison of protocols for PRP in pattern hair loss

Study	Preparation	Volume of whole blood (mL)	1st centrifugation		2nd centrifugation		Platelet concentration factor ^a
			Force (g)	Time (min)	Force (g)	Time (min)	
Singhal et al. [15]	Not reported	20	1500	6	2500	15	Not reported
Gentile et al. [16]	Cascade Selphyl Esforax system (Aesthetic Factors, LLC, Wayne, NJ, USA) with modifications	18	1100	10			Not reported
	Platelet Rich Lipotransfert system (Corios Soc. Coop, San Giuliano Milanese, Italy) with modifications	60	1200	10			
Marwah et al. [17]	Not reported						
Khatu et al. [18]	Not reported	20	1500	6	2500	15	Not reported
Cervelli et al. [19]	Cascade Selphyl Esforax system	18	1100	10			Not reported
Gkini et al. [20]	RegenKit BCT 3 (Regenlab, NY, NY)	16	1500	5			5.8
Kang et al. [21]	SmartPREP2 (Harvest Technologies Corp., Plymouth, MA, USA)	60	Not reported				5.9
Schiavone et al. [22]	Autologous leukocyte PRP (GPS III Platelet Separation System, Biomet, Warsaw, IN, USA)	60	Not reported				3.5-4
	Autologous plasmatic protein solution (Glo PRP, Glofinn Oy, Glotec Korea)	40	Not reported				4
Sclafani [23]	Selphyl (Aesthetic Factors, Inc., Wayne, NJ, USA)	18	1110	6			Not reported
Betsi et al. [24]	ACR C Extra kits (RegenLab SA, Switzerland)	16	1500	5			Not reported
Takikawa et al. [25]	Nipro Pharma, Osaka, Japan	15	1700	15	3000	5	6.13

Aktif biyolojik moleküller veya hücreler eklenmeli mi??

- **Lökosit**
 - Kıl kalınlığı ve yoğunluğunda artış
 - Kontrol grubu yok
 - Subjektif değerlendirme
- **Dalteparin/protamine mikropartikülleri**
 - Kıl yoğunluğuna etki yok
 - Kıl kalınlığında artış
- **CD34+ hücreler**
 - Kıl yoğunluğunda artış
 - Kıl kalınlığında artış
 - Kontrol grubu plasenta ektresi
 - Erkek hastalar Finasterid kullanıyor

- **Yenilikçi PRP tedavileri umut verici**
- **Fakat standart PRP ile karşılaştırmalı çalışmalar yapılmalı**

**Hangi doz, hangi sıklıkla ve kaç
uygulama yapalım??**

- **İntradermal, subdermal enjeksiyon**
- **Doz:0.05-0.1cc/cm²**
- **Toplam hacim:0.8-12 cc**
- **Uygulama sıklığı: 1/1hf-3ay**
- **Uygulama sayısı: 2-5 uygulama**

**Hangi doz, hangi sıklıkla ve kaç
uygulama yapalım??**

- **3 haftada bir, toplam 3 uygulama önerilebilir**

Takip?

«Booster» uygulama yapalım mı?

- Çalışmaların çoğunda takip süresi 6 ay-YETERLİ Mİ???
- Son uygulamadan sonra uzun dönemde etki azalır
- 3. ayda kıl yoğunluğu maksimum
- 6.-12. ayda kıl yoğunluğu azalır
- Betsi ve ark.... 3 hafta aralıklarla 5 uygulama (15 hafta)
İDAME: yılda 2 uygulama ile devam

6 ayda bir «booster» uygulama

Takip?

«*Booster*» uygulama yapalım mı?

- **Uzun dönem tedavi ve ek uygulamaların gerekliliği ile ilgili yeterli veri yok**
- **Ancak ek uygulamalar relapsları önlemede yararlı olabilir**

ETKİNLİĞİ NASIL DEĞERLENDİRELİM??

- Subjektif/Objektif değerlendirme
 - Fotoğraf
 - Saç çekme testi
 - Saç yoğunluğu
 - Saç kalınlığı
 - Hasta memnuniyet ölçeği

ÇALIŞMALARDA PRP ETKİNLİĞİ

- **Ortalama saç sayısında artış**
- **Saç yoğunluğunda artış**
- **Terminal saç yoğunluğunda artış**
- **Saç kalınlığında artış**
- **Dökülmede azalma (Saç çekme testi)**
- **Histopatolojik bulgular**
- **Hasta memnuniyeti**

Histolojik Bulgular

- **Epidermal proliferasyonu uyarır**
- **Folikül kese hücrelerinin büyümesini uyarır**
- **Takikawa ve ark.....**
 - **Epidermal kalınlaşma**
 - **Fibroblast artışı**
 - **Perifoliküler damarlanma artışı**
- **Cervelli ve ark.....**
 - **Epidermal kalınlaşma**
 - **Kıl follikül sayısında artış**
 - **Perifoliküler damarlanma artışı**
 - **Bazal keratinositlerde Ki artışı**
 - **Bulge hücrelerinde Ki artışı.... Follikülogenesis!!!**

YAN ETKİLER

- Hafif ve geçici
- Eritem, ödem
- Hassasiyet
- Baş ağrısı

SONUÇ

- **Alopesi tedavisinde PRP uygulaması henüz başlangıç evresinde**
- **Klinik çalışmaların sonuçları umut verici**
 - **PRP enjeksiyonları yararlı gibi gözüküyor**
 - **Güvenli, yan etki olasılığı düşük bir uygulama**
 - **Hazırlama yöntemi, doz, enjeksiyon tekniği ve tedavi şeması değişken**
 - **Etkinlik değerlendirilmesi standart değil**

SONUÇ

- **Randomize klinik çalışmalar, objektif etkinlik değerlendirme kriterleri**
 - **Optimal platelet konsantrasyon faktörü belirlenmeli**
 - **Enjeksiyon sıklığı ve tedavi süresi belirlenmeli**
 - **Saç yoğunluğu iyi bir objektif değerlendirme kriteri**
- **İdeal hasta profili belirlenmeli**
 - **Yaş ve cinsiyetin etkisi yok**
 - **2-4 yıldan kısa süreli AGA'da daha etkili?**
 - **Hafif-orta şiddette AGA (Norwood I-IV)'da daha etkili??**

SONUÇ

- **Minoxidil ve Finasterid tedavilerine dirençli olgularda PRP bir tedavi seçeneği olabilir**
- **Minoxidil, günlük-düzenli uygulama zor**
- **Finasterid yan etkileri**
- **PRP**
 - **Kolay uygulama,**
 - **Az yan etki**
 - **Yüksek hasta memnuniyeti**

Randomized Placebo-Controlled, Double-Blind, Half-Head Study to Assess the Efficacy of Platelet-Rich Plasma on the Treatment of Androgenetic Alopecia

RUBINA ALVES, MD AND RAMON GRIMALT, MD, PhD

BACKGROUND Platelet-rich plasma (PRP) was identified as having a beneficial effect in alopecia and has been postulated as a new therapy for androgenetic alopecia (AGA).

OBJECTIVE To assess the efficacy of PRP for the treatment of AGA.

MATERIALS AND METHODS This was a randomized, placebo-controlled, double-blind study in 25 patients with AGA. Platelet-rich plasma was injected in half-head and the other half-head with placebo. Each patient received a total of 3 treatments of PRP, 1 month apart.

RESULTS Six months after the first treatment with PRP, significant differences were seen in mean anagen hairs (67.6 ± 13.1), telogen hairs (32.4 ± 13.1), hair density (179.9 ± 62.7), and terminal hair density (165.8 ± 56.8) when compared with baseline ($p < .05$). Platelet-rich plasma was also found to increase hair density when comparing with the control side ($p < .05$). For the first time, the authors found a correlation between anagen hairs and patients >40 years and beginning of AGA ≥ 25 years old ($p < .05$) and hair density and male sex, age ≤ 40 years, positive family history of AGA and >10 years of duration of the disease ($p < 0.05$).

CONCLUSION Application of PRP showed a positive effect on AGA and could be regarded as an adjuvant therapy for AGA.

The authors have indicated no significant interest with commercial supporters.

- Tedaviden önce ve sonra karşılaştırma;
 - Ortalama anagen saç yoğunluğunda artış
 - Ortalama telogen saç yoğunluğunda artış
 - Total saç yoğunluğunda artış
 - Terminal saç yoğunluğunda artış
- PRP/KONTROL karşılaştırmasında
 - Total saç yoğunluğunda artış (+)
 - Ortalama anagen saç yoğunluğunda fark yok
 - Ortalama telogen saç yoğunluğunda fark yok
 - Terminal saç yoğunluğunda fark yok

AGA tedavisinde PRP etki mekanizması????

Double-Blind, Placebo-Controlled Pilot Study on the Use of Platelet-Rich Plasma in Women With Female Androgenetic Alopecia

CARLOS J. PUIG, DO,^{*} ROBERT REESE, DO,[†] AND MICHELLE PETERS, EdD^{*,†}

BACKGROUND Platelet-rich plasma (PRP) has been suggested as a therapeutic intervention for female androgenetic alopecia.

OBJECTIVE To perform a pilot study on the effect of PRP scalp injections in women with female androgenetic alopecia.

MATERIALS AND METHODS This double-blind, multicenter, placebo-controlled study compared the effect of PRP with that of saline placebo as scalp injection. The endpoints were hair count and hair mass index (HMI), along with patient-opinion survey responses. Platelet-rich plasma was manufactured from patients' blood using the Angel PRP system.

RESULTS Hair mass index or hair count did not statistically significantly differ between the study and placebo groups. However, 13.3% of the treatment subjects (vs 0% of the placebo subjects) experienced substantial improvement in hair loss, rate of hair loss, hair thickness, and ease of managing/styling hair, and 26.7% (vs 18.2% of the placebo group) reported that their hair felt coarser or heavier after the treatment.

CONCLUSION Platelet-rich plasma failed to demonstrate any statistically significant improvement in HMI or hair count in women with congenital female pattern hair loss. The patient survey results suggest a therapeutic advantage of PRP as perceived by patients but not according to hair count or HMI.

Angel PRP and all the soft goods for making the PRP were provided by CytoMedics. The authors have indicated no significant interest with commercial supporters.

A randomized, double-blind, placebo- and active-controlled, half-head study to evaluate the effects of platelet-rich plasma on alopecia areata

A. Trink,² E. Sorbellini,² P. Bezzola,² L. Rodella,² R. Rezzani,² Y. Ramot³ and F. Rinaldi²

Background Alopecia areata (AA) is a common autoimmune condition, causing inflammation-induced hair loss. This disease has very limited treatment possibilities, and no treatment is either curative or preventive. Platelet-rich plasma (PRP) has emerged as a new treatment modality in dermatology, and preliminary evidence has suggested that it might have a beneficial role in hair growth.

Objectives To evaluate the efficacy and safety of PRP for the treatment of AA in a randomized, double-blind, placebo- and active-controlled, half-head, parallel-group study.

Methods Forty-five patients with AA were randomized to receive intralesional injections of PRP, triamcinolone acetonide (TcA) or placebo on one half of their scalp. The other half was not treated. Three treatments were given for each patient, with intervals of 1 month. The endpoints were hair regrowth, hair dystrophy as measured by dermoscopy, burning or itching sensation, and cell proliferation as measured by Ki-67 evaluation. Patients were followed for 1 year.

Results PRP was found to increase hair regrowth significantly and to decrease hair dystrophy and burning or itching sensation compared with TcA or placebo. Ki-67 levels, which served as markers for cell proliferation, were significantly higher with PRP. No side-effects were noted during treatment.

Conclusions This pilot study, which is the first to investigate the effects of PRP on AA, suggests that PRP may serve as a safe and effective treatment option in AA and calls for more extensive controlled studies with this method.

Platelets rich plasma versus minoxidil 5% in treatment of alopecia areata: A trichoscopic evaluation

Moustafa A. El Taieb¹ | Hassan Ibrahim² | Essam A. Nada³ | Mai Seif Al-Din⁴

Abstract

Alopecia areata is a common cause of nonscarring alopecia that occurs in a patchy, confluent, or diffuse pattern. Dermoscopy is a noninvasive technique for the clinical diagnosis of many skin diseases. Topical minoxidil solution 5% and platelet rich plasma are important modalities used in treatment of alopecia areata. We aimed to evaluate the efficacy of PRP versus topical minoxidil 5% in the treatment of AA by clinical evaluation and trichoscopic examination. Ninety patients were allocated into three groups; the first was treated with topical minoxidil 5% solution, the second with platelets rich plasma injections, and the third with placebo. Diagnosis and follow up were done by serial digital camera photography of lesions and dermoscopic scan before and every 1 month after treatment for 3 months. Patients treated with minoxidil 5% and platelets rich plasma both have significant hair growth than placebo ($p < .05$). Patients treated with platelets rich plasma had an earlier response in the form of hair regrowth, reduction in short vellus hair and dystrophic hair unlike patients treated with minoxidil and control ($p < .05$). In conclusion, platelets rich plasma is more effective in the treatment of alopecia areata than topical minoxidil 5% as evaluated by clinical and trichoscopic examination.

AKNE SKARI-PRP

PRP uygulama yöntemi	Kontrol	Split side	Sonuç	Hasta sayısı
Erbium fraks lazer+ Topikal PRP	YOK	YOK	%90 hastada %50'den fazla klinik iyileşme	22
Fraks CO2 lazer+ L-PRP enjeksiyon	SF	VAR	Klinik iyileşme (+) Eritem ve ödem süresi azalır	14
Fraks Co2 lazer Topikal L-PRP veya L-PRP enjeksiyon	SF/ Topikal PRP veya PRP enj.	VAR	Topikal ve Intradermal PRP&lazer sinerjistik etki (+) Topikal&intrdermal PRP etkinlik farklı değil	30
PRP&TCA& PRP+Mikroiğneleme	TCA/PRP+ Mikroiğneleme	YOK	Benzer klinik etki	45
Mikroiğneleme+PRP & Mikroiğneleme+Vit C	VitC	VAR	Klinik etki daha belirgin	30

Rapid Healing and Reduced Erythema after Ablative Fractional Carbon Dioxide Laser Resurfacing Combined with the Application of Autologous Platelet-Rich Plasma

JUNG IM NA, MD, JEE WOONG CHOI, MD, HYE RYUNG CHOI, PhD, JEONG BOK JEONG, MSC, KYOUNG CHAN PARK, MD, PhD, SANG WOONG YOON, MD, PhD, AND CHANG HUN HUH, MD, PhD*

BACKGROUND Fractional carbon dioxide laser resurfacing (FXCR) has shown considerable efficacy in reducing wrinkles, although complications such as scarring and prolonged erythema are more common and down-time is longer than with nonablative laser treatment. Platelet-rich plasma (PRP), a high concentration of platelets in a small volume of plasma, is known to enhance tissue healing.

OBJECTIVE To evaluate the benefits of PRP in the wound healing process after FXCR.

MATERIALS AND METHODS Twenty-five subjects were treated with FXCR on the bilateral inner arms. PRP was prepared from 10 mL of whole blood and applied on a randomly allocated side, with normal saline being used as the contralateral control. Transepidermal water loss (TEWL) and skin color were measured on both sides. Skin biopsies were also taken from five subjects on day 28.

RESULTS Significantly faster recovery of TEWL was seen on the PRP-treated side. The erythema index and melanin index on the PRP-treated side were lower than on the control side. Biopsy specimens from the PRP-treated side showed thicker collagen bundles than those from the control side.

CONCLUSION Application of autologous PRP is an effective method for enhancing wound healing and reducing transient adverse effects after FXCR treatment.

The Efficacy of Autologous Platelet Rich Plasma Combined with Ablative Carbon Dioxide Fractional Resurfacing for Acne Scars: A Simultaneous Split-Face Trial

JIN WOONG LEE, MD,* BEOM JOON KIM, MD, PhD,* MYEUNG NAM KIM, MD, PhD,* AND SEOG KYUN MUN, MD, PhD†

BACKGROUND Ablative carbon dioxide (CO₂) fractional resurfacing is a promising therapeutic intervention for the treatment of acne scars, although this technique is associated with prolonged surgical site erythema and edema, which may affect the daily lives of patients. Autologous platelet-rich plasma (PRP) is known to enhance wound healing and has applications in many areas of medicine.

OBJECTIVES To evaluate the synergistic effects of autologous PRP with CO₂ fractional resurfacing for acne scars.

MATERIALS AND METHODS A split-face trial was conducted in 14 Korean participants with acne scars. All participants received one session of ablative CO₂ fractional resurfacing. Immediately after resurfacing, facial halves were randomly assigned to receive treatment with autologous PRP injections on one side (experimental side) and normal saline injections on the other side (control side). The participants were monitored for degree of recovery and resurfacing-associated adverse events, including prolonged erythema, edema, and other effects on days 0, 2, 4, 6, 8, 15, and 30. The intensity of erythema was objectively measured using a chromometer at the same time intervals. After one additional treatment session using the same protocol, two independent dermatologists evaluated clinical improvement using a quartile grading scale.

Autologous Platelet Rich Plasma: Topical Versus Intradermal After Fractional Ablative Carbon Dioxide Laser Treatment of Atrophic Acne Scars

HEBA I. GAWDAT, MD, REHAB A. HEGAZY, MD, MARWA M. FAWZY, MD, AND MARWA FATHY, MD*

BACKGROUND A proposal has recently been made regarding the potential adjuvant use of platelet-rich plasma (PRP) with fractional carbon dioxide laser (FCL) for the correction of acne scars.

OBJECTIVE To compare the efficacy and safety of two administration modes of autologous PRP (intradermal injection (ID) and topical application) after FCL with that of FCL alone in the treatment of atrophic acne scars.

PATIENTS AND METHODS Thirty patients were randomly divided into two groups. Both underwent split-face therapy. Group 1 was administered FCL followed by ID PRP on one side and FCL followed by ID saline on the other. In group 2, one cheek was treated with FCL followed by ID PRP, and the other received FCL followed by topical PRP. Each patient received 3 monthly sessions. The final assessment took place at 6 months.

RESULTS Combined PRP- and FCL-treated areas had a significantly better response ($p = .03$), fewer side effects, and shorter downtime ($p = .02$) than FCL-treated areas, but there were no significant differences in ID- and topical PRP-treated areas in degree of response and downtime ($p = .10$); topically treated areas had significantly lower pain scores.

CONCLUSION The current study introduces the combination of topical PRP and FCL as an effective, safe modality in the treatment of atrophic acne scars with shorter downtime than FCL alone and better tolerability than FCL combined with ID PRP.

Platelet-Rich Plasma Versus CROSS Technique With 100% Trichloroacetic Acid Versus Combined Skin Needling and Platelet Rich Plasma in the Treatment of Atrophic Acne Scars: A Comparative Study

EMAN NOFAL, MD, AFAF HELWAN, MD, AHMED NOFAL, MD, RANEA ALATYAN, MSc,
AND MOHAMMAD NASR, MD*

BACKGROUND Platelet rich plasma (PRP) is an autologous preparation of platelets in concentrated plasma that may be beneficial in the treatment of atrophic acne scars by promoting collagen deposition. Skin needling is a technique that uses a sterile dermamerler to puncture the skin and release growth factors. The combination of skin needling and PRP could enhance the efficacy of both modalities. Chemical reconstruction of skin scars technique consists of focal application of high concentration of trichloroacetic acid (TCA) on the acne scars to stimulate collagen production.

OBJECTIVE To evaluate the efficacy and safety of intradermal injection of PRP, 100% focal TCA, and combined skin needling plus topical PRP in the treatment of atrophic acne scars.

PATIENTS AND METHODS Forty-five patients with atrophic acne scars were randomly assigned to 3 equal groups; Group A received intradermal injection of PRP, Group B received chemical reconstruction of skin scars technique with TCA 100%, and Group C was treated by combined skin needling and PRP. Each patient underwent 3 sessions at 2 week interval.

RESULTS All the patients completed the study. The 3 groups showed statistically highly significant improvement in the degree of acne scars after treatment ($p < .001$). No major adverse effects were observed in the studied groups.

CONCLUSION This is the first study to use intradermal injection of PRP alone for the treatment of atrophic acne scars. The 3 modalities showed a promising efficacy and safety in the treatment of atrophic acne scars.

The authors have indicated no significant interest with commercial supporters.

DİĞER SKARLAR-PRP

PRP uygulanma yöntemi	Kontrol	Split side	Sonuç	Hasta sayısı
Yağ dokusu+PRP enj	YOK	YOK	Yağ greftinin yaşayabilirliğinde uzama	1
Yağ grefti+PRP & Yağ grefti+PRP+cerrahi	YOK	YOK	Belirgin klinik iyileşme (Manchester skar ölçeği)	60
PRP enj+Yağ grefti (eş zamanlı) &PRP enj+yağ grefti (10 gün sonra)	1: Yağ grefti 2:Yağ grefti+PRP 10G SONRA 3:Split face: Lipogreft&Lipogreft +PRP	VAR Grup 3	Kalitatif estetik iyileşme 3 grupta da (+) Değerlendirme yöntemi kötü Kantitatif sonuç yok	30

SONUÇ

- **Skar revizyonunda etkili olabilir**
- **Çalışmaların çoğunda PRP diğer tedavi yöntemleriyle (lazer, RF, otolog yağ grefti) kombine uygulanmış**
- **Hangi endikasyonda hangi PRP??**
Karşılaştırmalı çalışma yapılmalı
- **Geniş ölçekli, kontrollü, «Split-side» çalışmalar yapılmalı**

Dermal dolgulama-PRP

• Endikasyon • PRP uygulama yöntemi	Kontrol	Split side	Sonuç	Hasta sayısı
• Yüz dermal dolgu • PRP+yağ grefti	YOK	YOK	2 yıllık takip/ kozmetik sonuçların korunmuş	1
• Gluteal dermal dolgu • PRP +Yağ grefti	YOK	YOK	Yüksek hasta memnuniyeti	24
• İç kol dermal dolgu • PRP enj.	YOK	YOK	Anjiogenesis Neokollajenosis Adipojenesis	4

Rejuvenasyon, Kırışıklık-PRP

• Endikasyon • PRP uygulanma yöntemi	Kontrol	Split side	Sonuç	Hasta sayısı
• Yüz ve boyun rejuv. • PRP enj. Ayda 1, 3 uygulama	YOK	YOK	Nazolabial kıvrımlarda düzelme (%24) boyun çizgilerinde düzelme(%28) Deri snap test(%20) Deri yapısında düzelme (%33) Deri tonusunda düzelme (%22.5) Kaz ayağı çizgilerinde hafifleme (%30)	23
• Yüz rejuv. • Fraksiyonel lazer • +Topikal PRP	Fraksiyonel lazer		Sinerjistik etki Elastisite artışı Fibroblast artışı Eritemde azalma	22
• Melolabial kıvrım • PRP(platelet rich fibrin matriks) enj. 1 enj.	YOK	YOK	Kıvrımda düzelme (Kıvrım değerlendirme ölçeği)	5
• İnfraorbital koyulaşma ve kaz ayağı kırışıklıkları • PRP enj. (1enj.)	YOK	YOK	Renkte önemli ölçüde açılma Kırışıklıklara etki yok	10
• Infraorbital kırışıklıklar ve cilt rengi • PRP enj. (3 enj.)	Split-face PRP/SF Split-face PRP/platelet poor plasma	VAR	Kırışıklık ve renkte belirgin klinik iyileşme	20

Assessment of the efficacy and safety of single platelet-rich plasma injection on different types and grades of facial wrinkles

Naema Y Elnehrawy, MD,¹ Zeinab A Ibrahim, MD, PhD,¹ Azza M Eltoukhy, MD, PhD,¹ & Hala M Nagy, MD, PhD²

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²Clinical Pathology Department, Faculty of Medicine, Tanta University, Tanta, Egypt

- **20 K, ort. yaş: 36.9**
- **1 PRP intradermal enj.**
- **Alın kırışıklıkları**
 - Kaz ayağı kırışıklıkları**
 - Nazolabial kırışıklıklar**
- **Hafif derin kırışıklık**
- **Orta derin kırışıklık**
- **Derin kırışıklık**
- **Kırışıklık şiddeti değerlendirme ölçeği**
- **Deri yapısını değerlendirme ölçeği**
- **Doktor değerlendirme ölçeği**
- **Hasta değerlendirme ölçeği**

Assessment of the efficacy and safety of single platelet-rich plasma injection on different types and grades of facial wrinkles

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Etkinlik:

- **Nazolabialde en etkili**
Kaz ayağında daha az etkili
Alında en az etkili
- **Hafif kırışıklıklarda en etkili**
Orta derin kırışıklıklarda daha az etkili
Derin kırışıklıklarda %40 hastada değişiklik yok
- **30 yaş>, 30-40y: etkili**
>40 yaş: etkisiz

Genç hastalarda, hafif-orta derin nazolabial kırışıklıklarda en etkili

Platelet-Rich Plasma with Basic Fibroblast Growth Factor for Treatment of Wrinkles and Depressed Areas of the Skin

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***Plastic and Reconstructive Surgery 2015;
26(5)***

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- 2005 hasta, 1889 K, 116 E
- Ort. Yaş: 48.2
- 1461 nasolabial kıvrım, 437 marionet çizgisi, 1413 nasojugal oluk, 148 supraorbital oluk, 253 orta yanak oluğu, 304 alın, 49 temporal, 282 glabellae
- Global Estetik Düzeltme Ölçeği
 - Hasta memnuniyeti % 97.3
 - Araştırmacı memnuniyeti %98.4
- Tedavi etkisinin başlangıcı; 65.4 gün
- Kırıışıklık Şiddetini Değerlendirme Ölçeği
 - Grade 5 kırıışıklıklarda en yüksek etkinlik
 - Grade 1 kırıışıklıklarda en az etkinlik

Platelet-Rich Plasma with Basic Fibroblast Growth Factor for Treatment of Wrinkles and Depressed Areas of the Skin

Yazarların görüşü: (5 yıllık deneyim)

- PRP kırışıklık tedavisinde tek başına etkisiz veya
- En azından derin kırışıklıklarda ve deprese alanlarda etkisiz
- Fibroblast büyüme faktörü dermiş ve yağ dokuda etki eder; kollajen, hyaluronik asit ve yağ hacminde artışa neden olur
- Kawazoe ve ark.....
 - PRP+ bFGF doku büyümesini uyarır

STRİA -PRP

PRP uygulama yöntemi	Kontrol	Split side	Sonuç	Hasta sayısı
Intradermal RF+PRP enj. Ayda 1, 3 uygulama	YOK	YOK	Tüm hastalarda etki (+) %5 mükemmel %36.8 Belirgin %31 orta %26 hafif düzelme	19
Fraksiyonel RF+Topikal PRP 2 hf ara ile 16 uygulama	YOK	YOK	Stria genişliğinde azalma Hastaların %72'si memnun veya çok memnun	18
PRP enj. &Mikrodermab. &PRP+Mikrodermab. 2hf ara ile 6 uygulama	1: Mikrodermab. 3:Mikrodermab.+PRP enj.	YOK	Etkinlik: PRP+Mikrodermab. en etkili PRP daha az etkili Mikrodermab. en az etkili	68

Yara iyileşmesi ve Kronik ülser tedavisinde PRP

Randomize kontrollü çalışma...10

- **Ayak ülseri**
- **Diabetik ülser**
- **Venöz ülser**
- **PRP diabetik ayak ülserlerini iyileştirebilir**
Kanıt niteliği düşük
- **PRP'nin diğer kronik yaralardaki etkinliği belirsiz**
- **PRP'nin kronik yara tedavisindeki etkinliğinin genel kanıt niteliği çok düşük**
- **Randomize kontrollü çalışma çok az**
- **İyi tasarlanmış, randomize kontrollü çalışmalar yapılmalı**

KANITA DAYALI TIP AÇISINDAN PRP ENDİKASYONLARI

- **Androgenik alopesi** tedavisinde dirençli olgularda tedavi seçeneği olabilir
- **Alopesi areata** tedavisinde sonuçlar umut verici
- **Akne skarlarının** tedavisinde sinerjistik etki amacıyla diğer tedavi yöntemleri ile kombine kullanılabilir
- **Rejuvenasyon ve kırışıklık tedavisinde;**
 - Tek başına tedavi seçeneği olabilecek gibi gözüküyor
 - Diğer tedavi yöntemleriyle kombine kullanılabilir
- **Diabetik ayak ülserlerinde** tedaviye dirençli olgularda tedavi seçeneği olabilir