

HA (Hyaluronic acid)

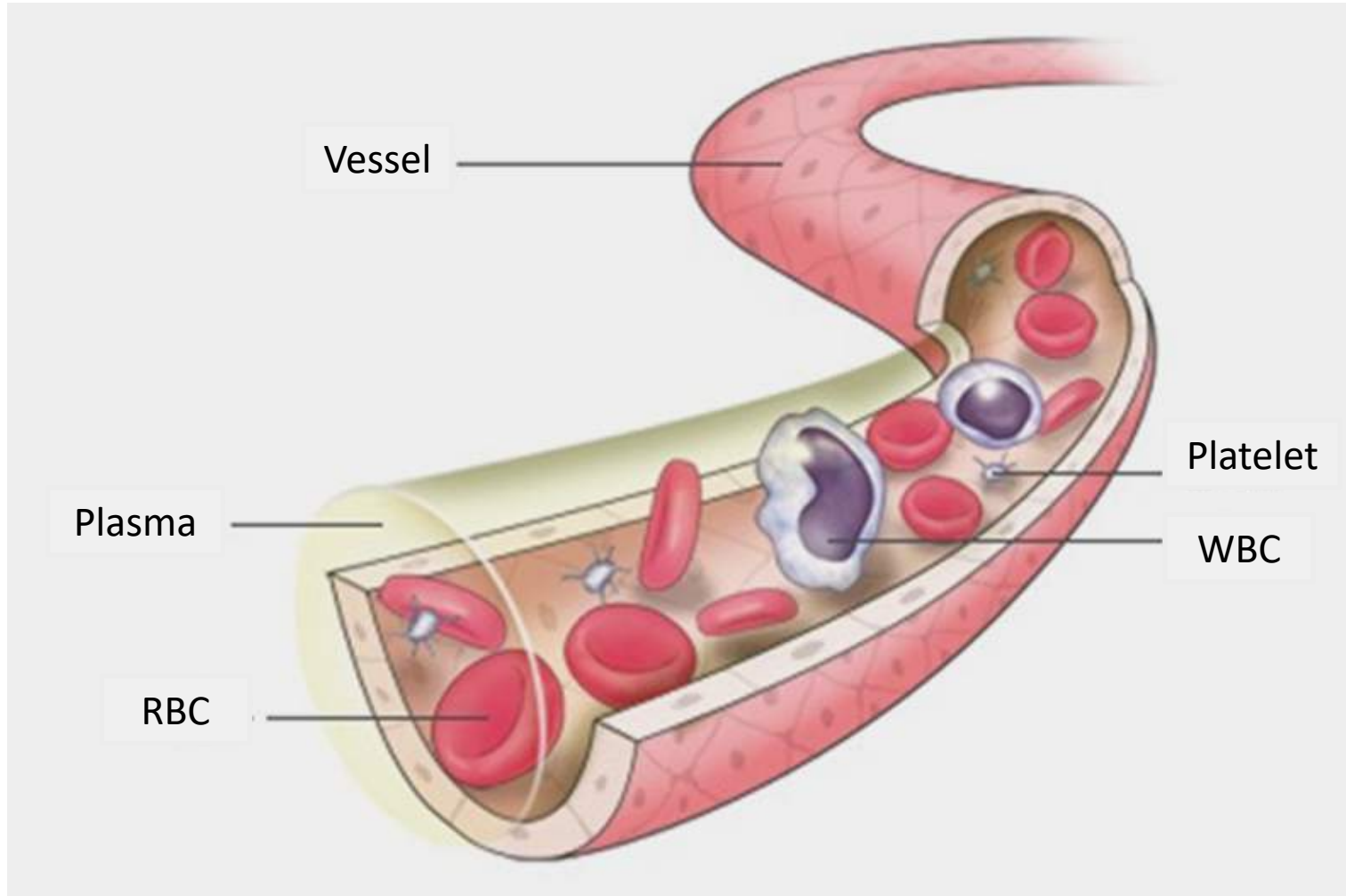
+

PRP (Platelet Rich Plasma)

Contents

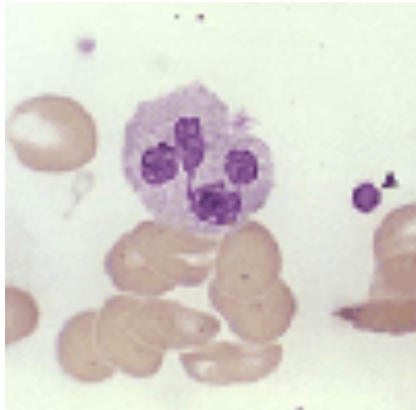
- New Stem PRP system
- 3E PRP
- PRP + HA
- Trend of HA and PRP
- Aging
- Facial Asymmetry
- Combine treatments

Blood ?



Growth factors

Function



PDGF : Platelet-derived Growth factors

- Induce cell proliferation and stem cell replication
- Stimulates osteoblast proliferation and osteoid tissue production
- Stimulates endothelial cell proliferation, angiogenesis and fibroblast proliferation.

TGF- β : Transforming growth factor - Beta

- Stimulates cell replication
- Induces cartilage, bone tissue

VEGF : Vascular Endothelial Growth Factor

- Stimulates Basal plate
- Peri-cyte supplementation

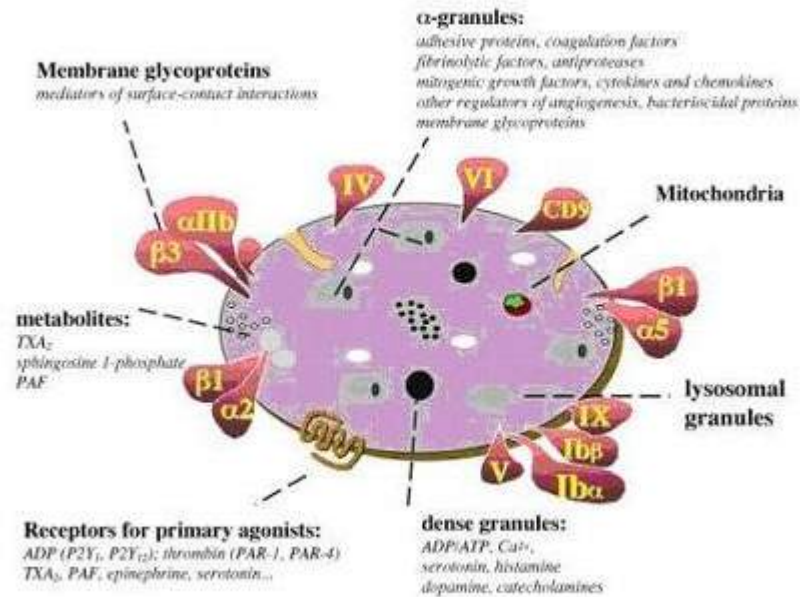
EGF : Epidermal Growth Factor

- Stimulates epithelial cell growth
- Rapid wound recovery

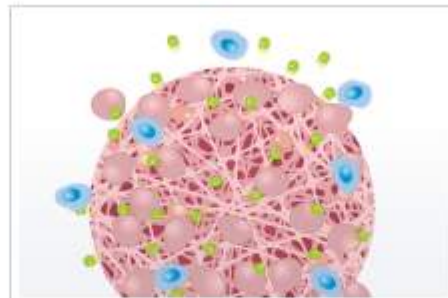
FGF : Fibroblast Growth Factor

- Collagen regeneration and recovery
- Damaged tissue

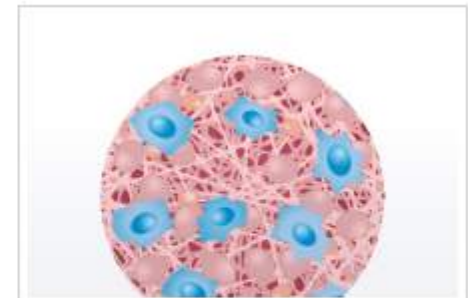
Platelet – Growth factors : Stem PRP



01 활성화시킨 혈소판을 피부에 주입



02 혈소판에서 방출된 성장인자가 줄기세포를 끌어들이



03 줄기세포가 분화해 콜라겐, 엘라스틴 등 탄력섬유세포를 생성



About

PRP

PRP. 3E PRP

PRP (Platelet Rich Plasma) refers to the blood plasma which contains various growth factors that stimulate healing and regeneration in human body.

- **3E (Easy, Efficient, Effective) PRP** kit is the easiest handle product to concentrate PRP effectively and easily.
- **3E PRP** has two different kits 10cc, 20cc, which includes syringes, cap and connector within one package. It minimizes the contamination by exposure to the air during the procedure.

Easy

- Only 1 time centrifugation
- **Easy** procedure

Effective

- Can see Buffy coat layer clearly
- High Concentrated platelet

Efficient

- Own blood treatment by PDGF, VEGF
- Reduce pain, Reduce period



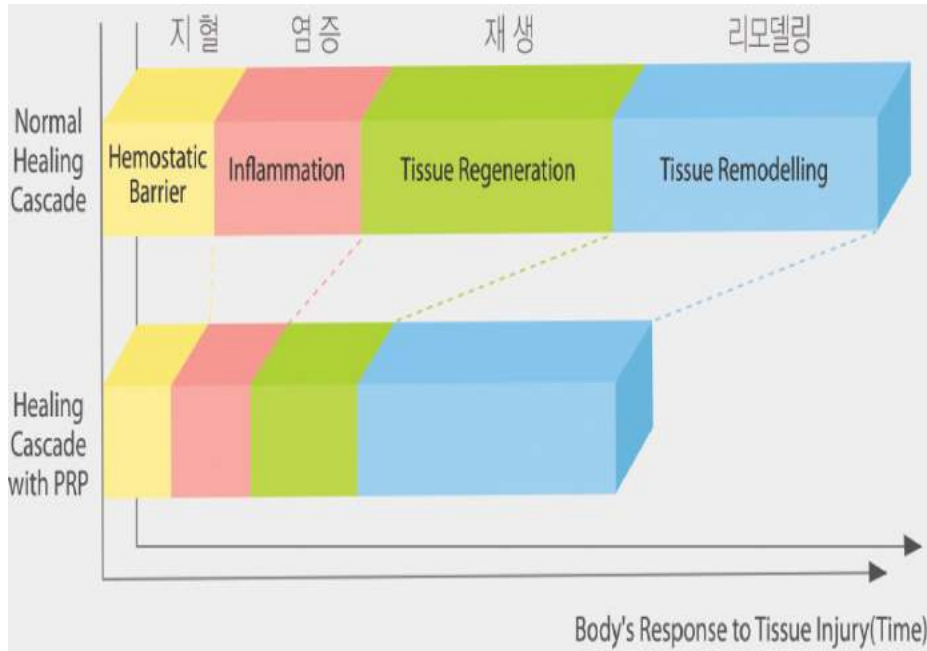
PRP. 3E PRP



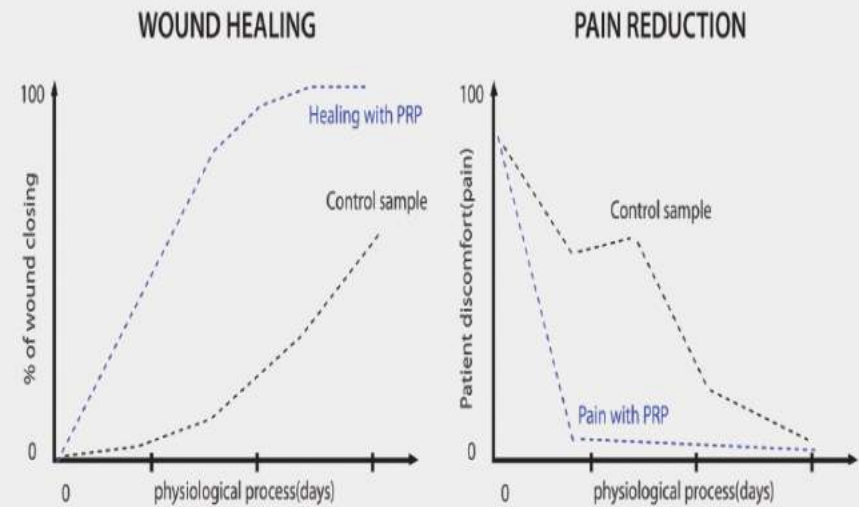
The efficacy of the growth factor

Growth factor	Function
PDGF	<ul style="list-style-type: none">• Induction of cell proliferation, replication of stem cells• Osteoblast proliferation , promote caries organization created• Endothelial cell proliferation, angiogenesis, fibroblast growth promotion
TGF- β	<ul style="list-style-type: none">• Promote cell replication and production• Cartilage and bone differentiation-inducing• Stimulate differentiation of mesenchymal cells and stimulate angiogenesis
VEGF	<ul style="list-style-type: none">• Facilitate generation base plate• Jupi cell replacement, angiogenesis
EGF	<ul style="list-style-type: none">• To promote growth of epithelial cells• Induced angiogenesis in the wound to heal quickly.
FGF	Collagen regenerating and helping the recovery of damaged tissue

Why PRP. 3E PRP



Timeline in wound healing and pain reduction



Journal of Oral & Maxillofacial Surgery, 2000; 58:45 Marx, Monteleone, Ghurani, Dr. Robert Marx, University of Miami

3E PRP KIT

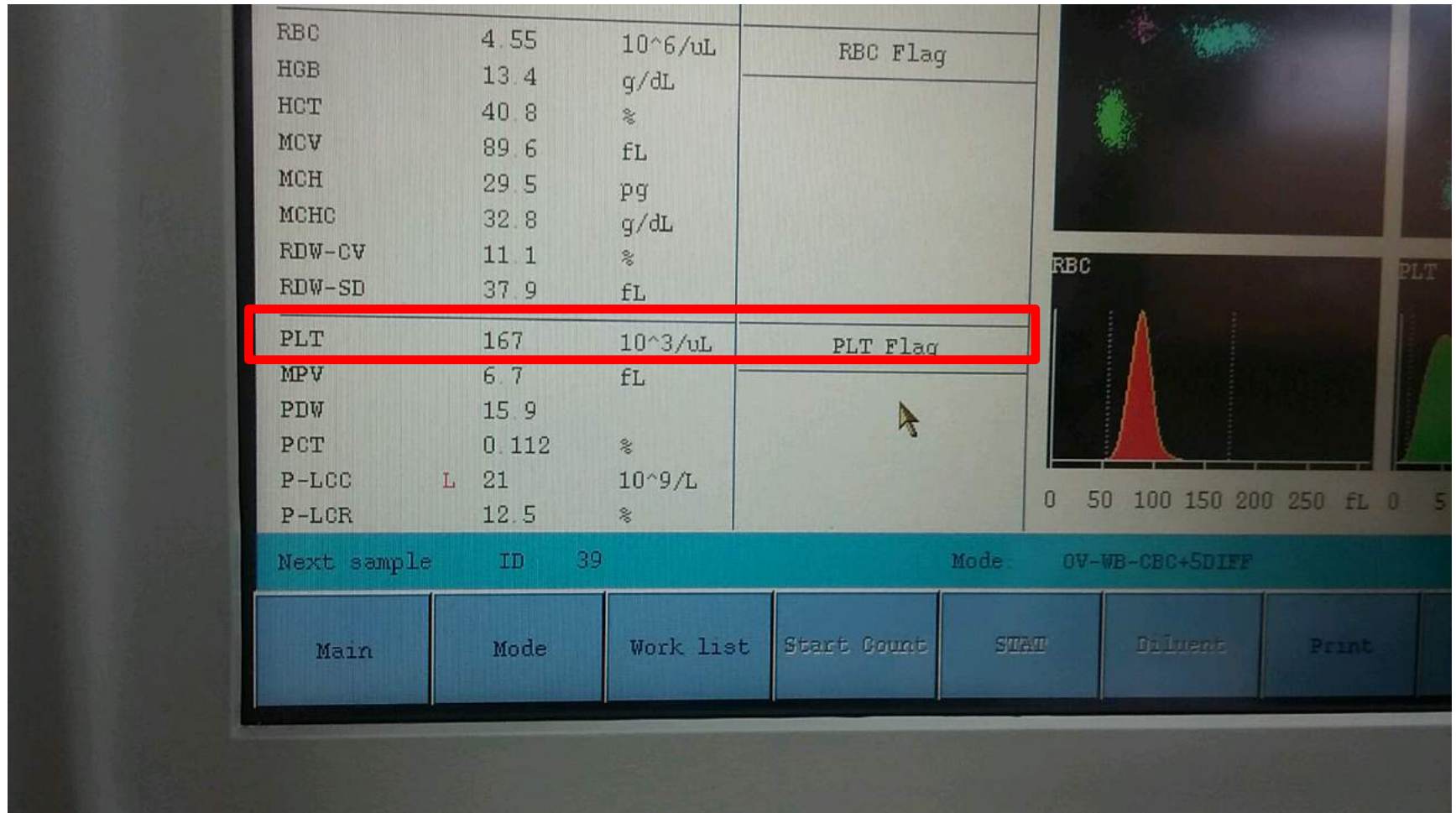


3E-PRP
Extraction
Only

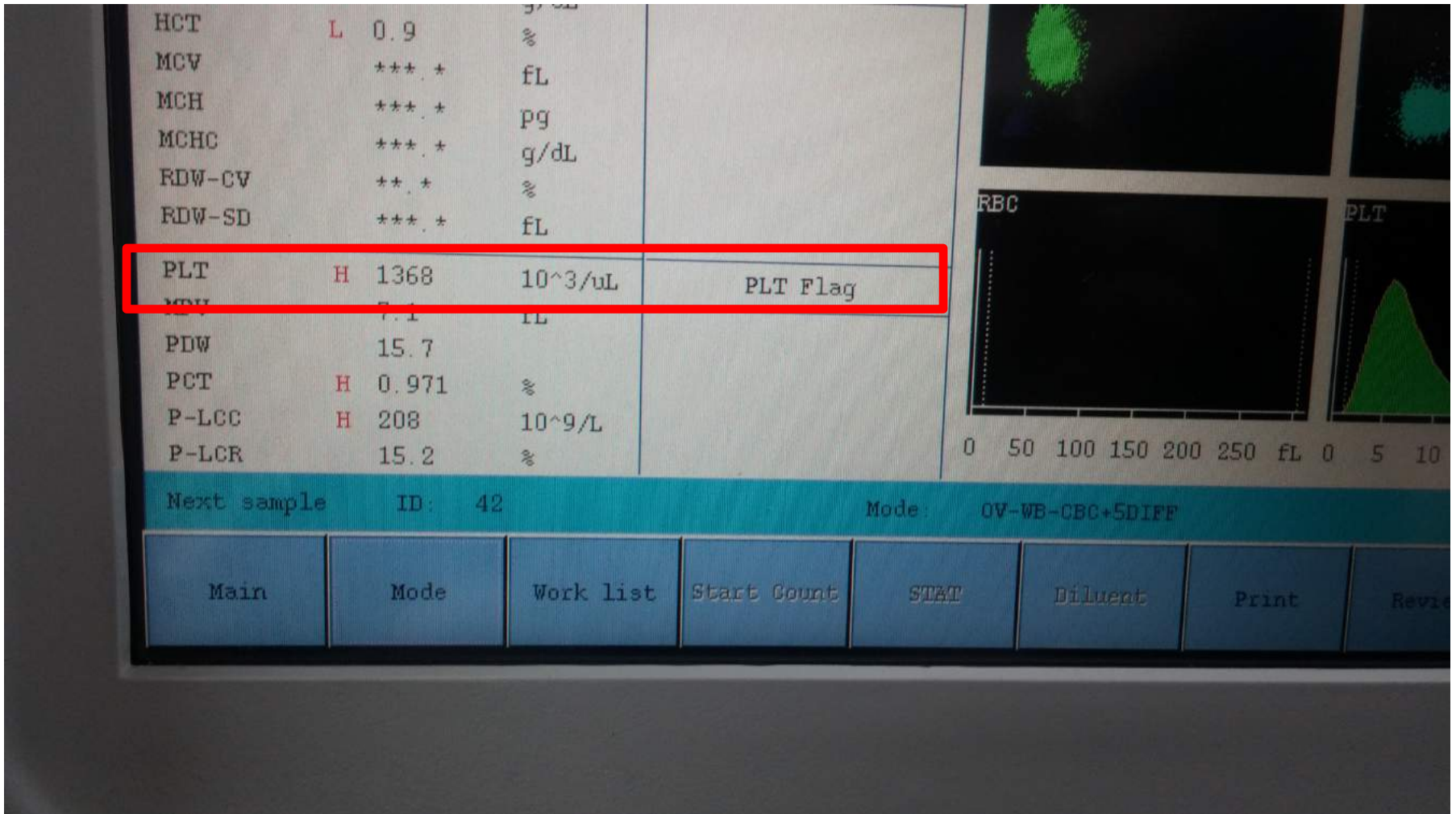
Buffy Coat

Push
Up

Normal Blood Test Results



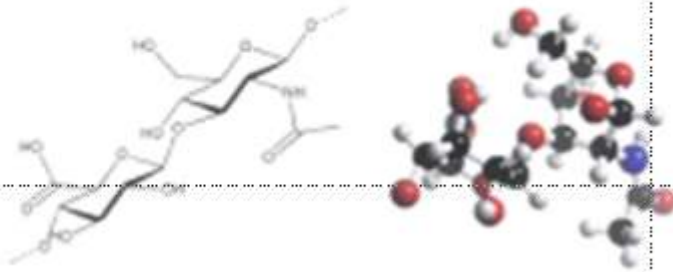
After New stem PRP system



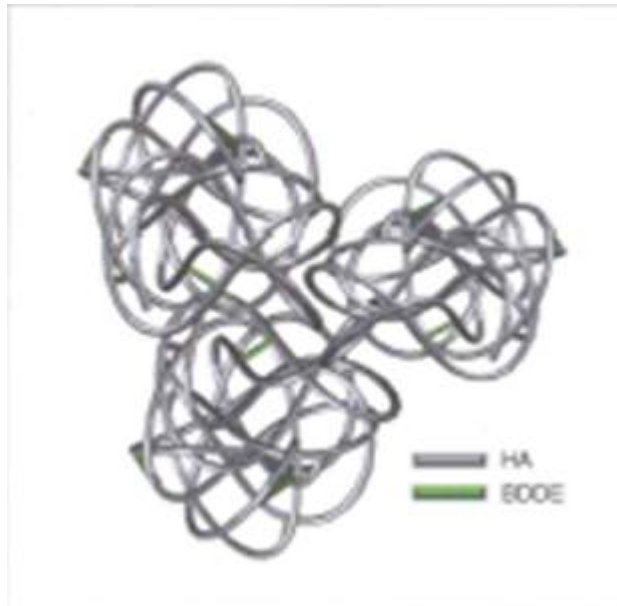
농축 후 PLT수치 : $1368 \times 1,000 = 1\text{백 } 36\text{만 } 8\text{천}$

PRP + HA

히알루론산(Hyaluronic acid)



Hyaluronic acid (HA)



Many Names

HA + PRP

- Volume Filler / injection
 - Full face treatments / filler injection
 - Beauty filler and injection
 - 3D Volume injection filler
 - Bio – cell filler and injection
- Volumizing vs Stimulation

HA + PRP = Fat graft

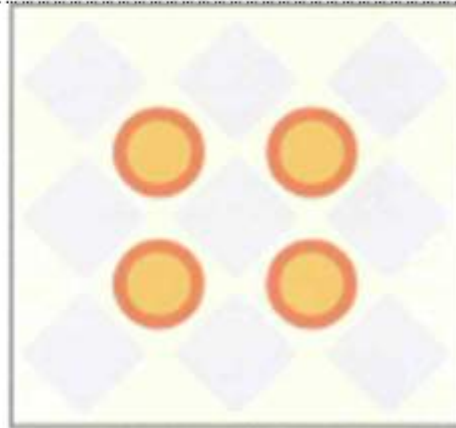
STEP 1

HA와 Cell을 Mix



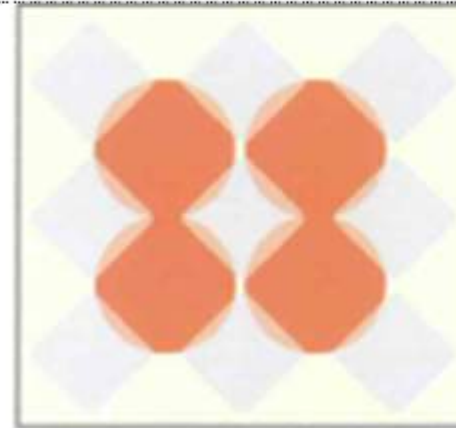
STEP 2

체내에서 PRP가 콜라겐을 생성



STEP 3

HA와 생성된 Collagen의 합성



- Based on HA structure
- Between HA – BDDE structure, cell positioning PRP growth factors (cells)
- PRP cell stimulates collagen

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Biol Res Nurs. 2014 May 20. pii: 1099800414535840. [Epub ahead of print]

Effectiveness of Platelet-Rich Plasma and Hyaluronic Acid for the Treatment and Care of Pressure Ulcers.Ramos-Torrecillas J¹, García-Martínez O¹, Luna-Bertos ED¹, Ocaña-Peinado FM², Ruiz C³.**+ Author information****Abstract**

Platelet-rich growth factor (PRGF) is a natural source of growth factors (GF), while hyaluronic acid (HA) is a biopolymer present in the extracellular matrix of skin, cartilage, bone, and brain, among other tissues. Both are involved in the pathophysiological mechanisms underlying wound healing. The objective of this study was to evaluate the clinical efficacy (as measured by ulcer area) and safety (as measured by signs of infection) of PRGF and PRGF plus HA in the treatment of pressure ulcers (PUs). Patients (N = 100) with 124 Stage II-III PUs were randomized to a control group (n = 25 PUs) for standard care or to case groups for treatment with one (n = 34 PUs) or two (n = 25 PUs) doses of PRGF from their own peripheral blood, or two doses of PRGF plus HA (n = 40 PUs). All ulcers were followed up every 3 days for a 36-day period. At 36 days, a significant reduction in ulcer area ($p \leq .001$) was observed in all treatment groups, with a mean reduction of more than 48.0% versus baseline. The greatest mean reduction (80.4% vs. baseline) was obtained with the PRGF plus HA regimen. Complete wound healing was observed in 32.0% of PUs treated with two doses of PRGF ($p \leq .002$) and in 37.5% of those treated with two doses of PRGF plus HA ($p \leq .004$). There were no signs of infection in any PUs during the 36-day follow-up period. The degree of wound healing was inversely correlated with the consumption of drugs such as statins and with the peripheral blood platelet levels of patients at baseline.

© The Author(s) 2014.

KEYWORDS: PRP; chronic wound; growth factors; hyaluronic acid; platelet-rich plasma; pressure ulcer; sore; tissue regeneration

<Reference>

Ramos,T., Garcia,M., Luna,B., Ocana, P., Ruis, C., 2014, *Effectiveness of Platelet Rich Plasma and Hyaluronic Acid for the Treatment and care of Skin*, University of Granada, Spain

Display Settings: Abstract

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Tissue Eng Part C Methods. 2009 Dec;15(4):625-34. doi: 10.1089/ten.TEC.2008.0518.

Application of platelet-rich plasma in plastic surgery: clinical and in vitro evaluation.

Cervelli V¹, Gentile P, Scioli MG, Grimaldi M, Casciani CU, Spagnoli LG, Orlandi A.

Author information

Abstract

The clinical use of platelet-rich plasma (PRP) for a wide variety of application has been reportedly employed most prevalently in problematic wounds, maxillofacial and hemi-facial atrophy, Romberg Syndrome, and diabetic foot ulcers. To our knowledge, PRP has never been described in the enhancement of fat grafting during tissue-engineering application in vivo. The authors describe the preparation of PRP and its use in a series of 43 patients who underwent plastic, reconstructive, and maxillofacial surgery for chronic lower extremity ulcers (n = 18) and multiple facial applications (n = 25). PRP mixed with fat grafting was used in 76% patients affected by multiple facial diseases and in 88.9% patients affected by lower extremity ulcers. PRP injection alone was used in the remaining patients. The authors observed that after a 7.1-week and 9.7-week (average) course of twice-daily wound treatment with PRP suspended on a collagen base, 61.1% and 88.9% of chronic lower extremity ulcers underwent to 100% reepithelization compared with 40% and 60% of controls (n = 10) treated with hyaluronic acid and collagen medication. In patients treated with reconstructing three-dimensional projection of face by fat grafting and PRP, we observed a 70% maintenance of contour restoring and three-dimensional volume after 1 year compared to only 31% of controls (n = 10) treated with fat grafting alone. In vitro, PRP induced a significant increase in the number of adipose-tissue-derived stem cells compared to control cultures. These results documented that PRP accelerates chronic skin ulcer reepithelization and improves maintenance and function of fat graft in patients who underwent plastic reconstructive surgery, possibly by stimulating adipose-tissue-derived stem cell proliferation.

PMID: 19231923 [PubMed - indexed for MEDLINE]

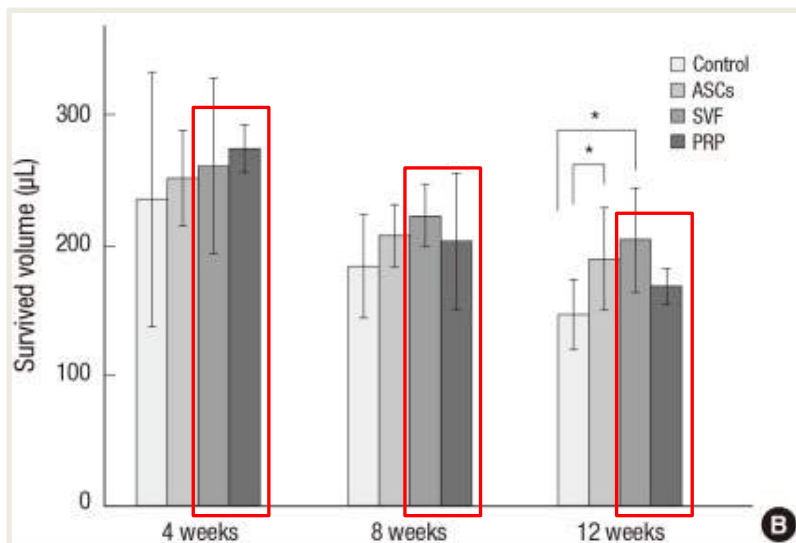
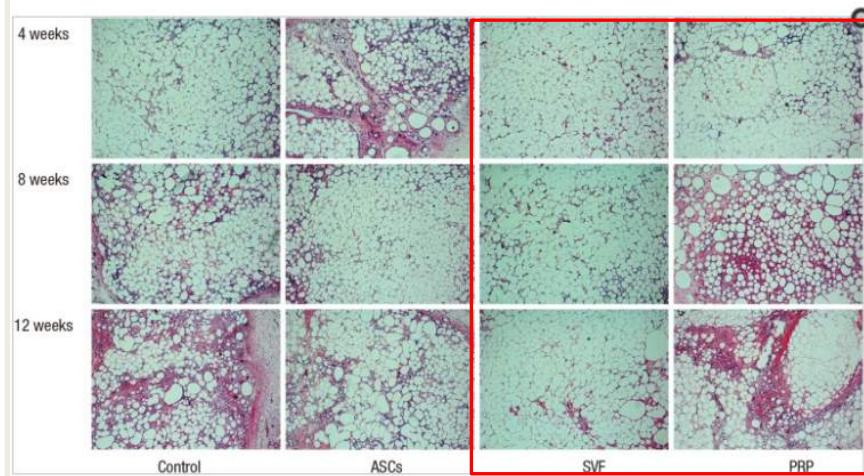


Fig. 3



Main purpose to use HA + PRP

1. Re – procedure after fat graft in same area.
2. Patient concerned about swollen down time
3. Patient want to results like fat graft

PRP + HA

- Similar touching and result compare with Fat graft procedure
- Forehead, cheek, chin = much less irritation

Best patient to use HA + PRP

1. Fat Graft
2. Bio-Stimulator
 - a. Sculptra ; PLLA
 - b. Ellanse : PCL (polycaprolactone)
3. Volumizers
 - a. collagen
 - b. HA
 - c. PMMA
 - d. CA – Hydroxyapatite
 - e. PAAG

PRP + HA Advantages

	Fat Graft	PRP + HA
Form	Fat tissue	Platelet Rich Plasma + Hyaluronic Acid
Results	Volume , Elasticity	Volume , Elasticity
Lasting	3 ~ 12 month (Big Personal)	1.6 ~ 2 Years
Issue	Requires more than 2 nd time re-touching procedure	Simple procedure
Anesthesia	General	Local
Post procedure	Swollen 3 ~ 4 days back to normal life	direct back to normal life

Place and Quantity

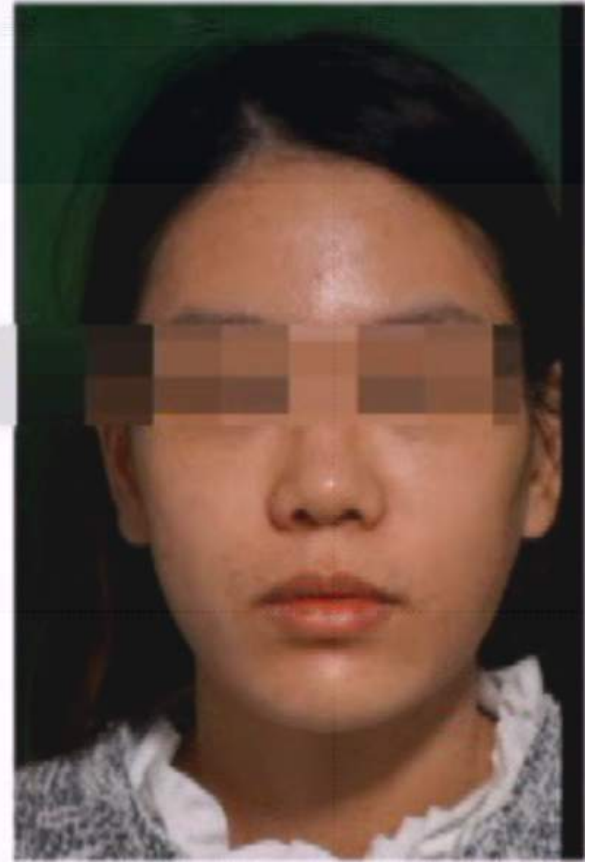
Contouring	Forehead	2.0 ~ 5.0 cc
	Cheek	4.0 ~ 6.0 cc
	Chin	1.0 ~ 2.0 cc
Wrinkle	Nasolabial folds	1.0 ~ 3.0 cc
	Periorbital	0.5 ~ 1.0 cc
	Marrionette lines	1.0 ~ 2.0 cc



Before



2 Weeks after



3 weeks after

Cheek, forehead, lower eye area



(14.01.05)

6 Month



(14.07.14)

Cheek, forehead (Full face)



6 Month



Before

After

Example for Hand Rejuvenation



Example for Neck Rejuvenation



Doctors precautions !!

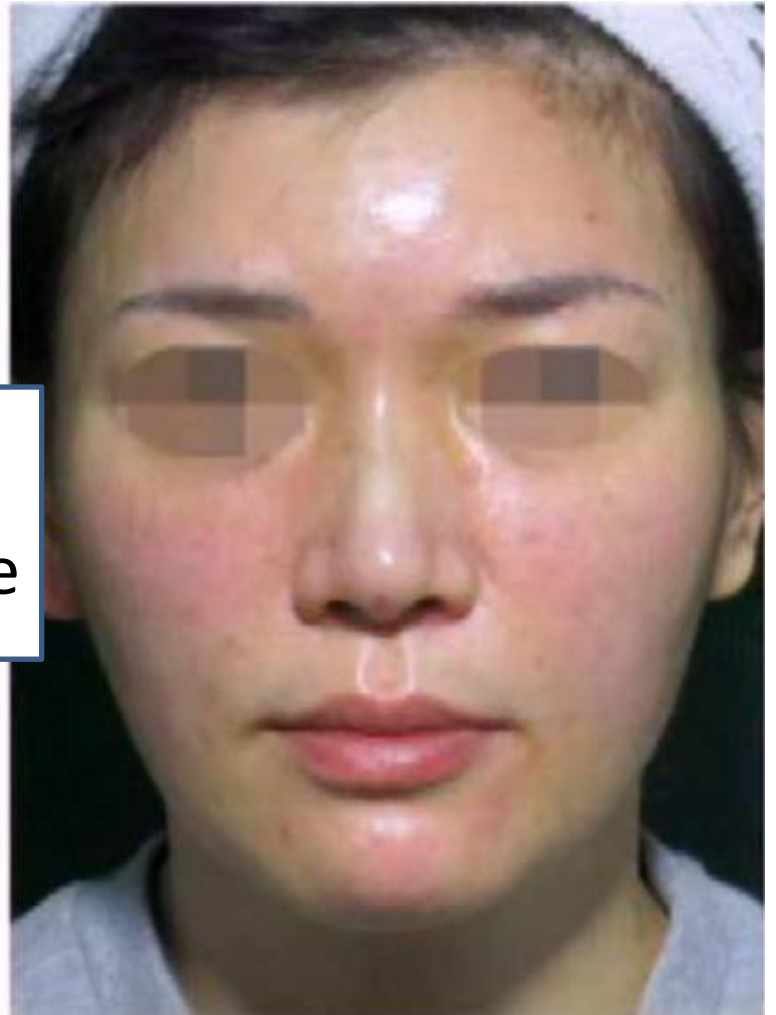
1. Prescript 3~5 days oral meds (anti-bio, pain killer, anti histamine, GI meds)
2. Kidney disease, Thyroid disease, keloidal skin , high active skin needs to be consider procedure
3. Pain, longer swollen down time due to Needle problem (1~2 weeks risk of infection, after 2 weeks, swollen skin is damaged)
4. Need follow up during 2 weeks

Patient precautions !!

1. Small wash 2 days after procedure
2. Do not touch procedure area with hands during 7 days
3. Do not drink alcohol, smoke and hard exercise
4. Bruise may occur on and lasting 7 days
5. Any swollen issue, visit hospital to see doctor.
6. Normal swollen down time is 1 week.



After
Procedure





After
Procedure





After
Procedure





4 Month
After





2 Month
After





4 Month
After

