

SVM 2018 Annual **Scientific Sessions**

June 13-16, 2018 | Fairmont Chicago Millennium Park | Chicago, Illinois USA

Concentrated Growth Factors (CGF) for the Treatment of Vascular Non-Healing Ulcers: preliminary data of a Randomized Multicenter Prospective Study

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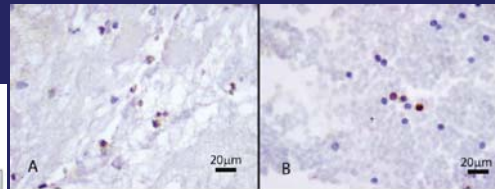
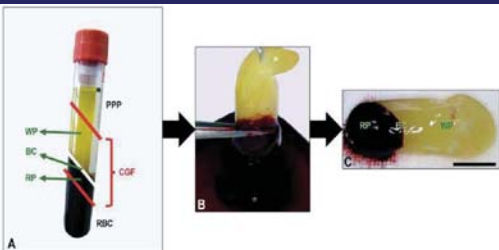
Background

Concentrated Growth Factors (CGF) is an autologous preparation obtained from the patient's own blood.

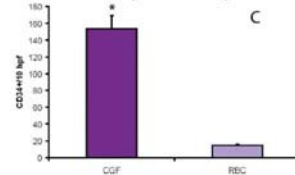


Growth Factors, CD34 Positive Cells, and Fibrin Network Analysis in Concentrated Growth Factors Fraction

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Quantitative analysis of CD34 positive cells



MICROSCOPY RESEARCH AND TECHNIQUE 74:772-777 (2011)

Biology and Medicine

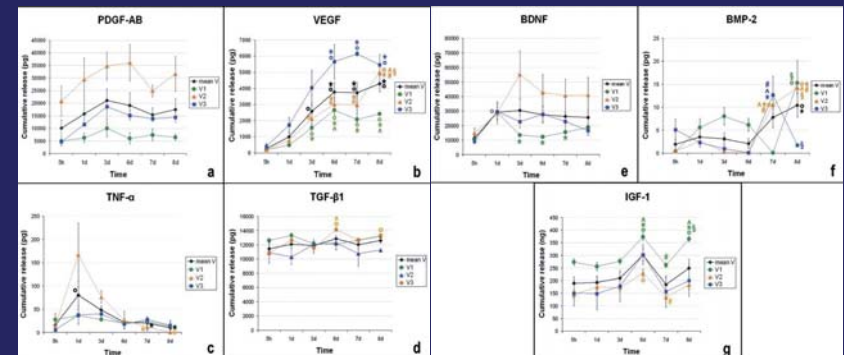
Borsani et al., *Biol Med (Algha)* 2015, 7:5
<http://dx.doi.org/10.4172/0974-8369.1000256>

Research Article

Open Access

Biological Characterization and In Vitro Effects of Human Concentrated Growth Factor Preparation: An Innovative Approach to Tissue Regeneration

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Methods

CGF dressing
(31 patients)



topical application of CGF
weekly
for 6 weeks

standard dressing
(30 patients)



application of
polyurethane film or
foam weekly
for 6 weeks

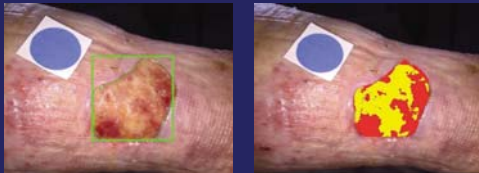
in patients with non-healing ulcers

Criteria

Inclusion criteria	Non infected, chronic (> 3 months) skin lesions, of lower limb
Exclusion criteria	Pregnancy Recent acute coronary syndrome Infection of the lesion Short life expectancy Cachexia Severe or moderate thrombocytopenia (PLT count <50000/mm ³)
Exclusion criteria during study	Infection of the lesion Need to amputation or rivascularitation

Methods

Ulcer size was calculated using MOWA graphics software (MOBILE Wound Analyzer)

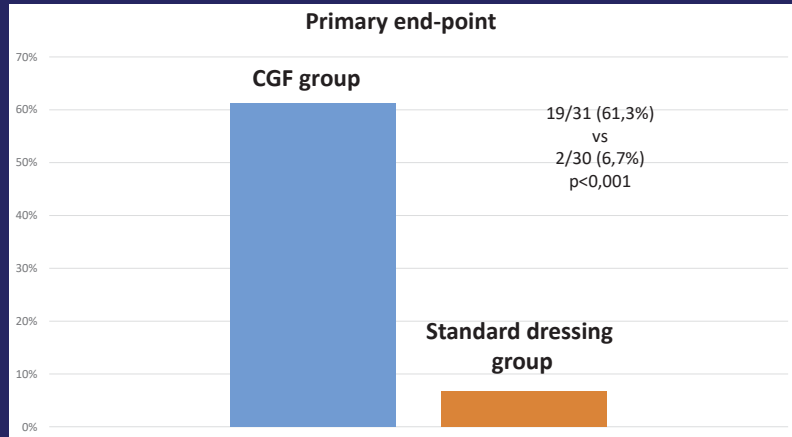


The primary end-point was the reduction of at least 50% of surface and volume of lesions after 6 weeks of treatment

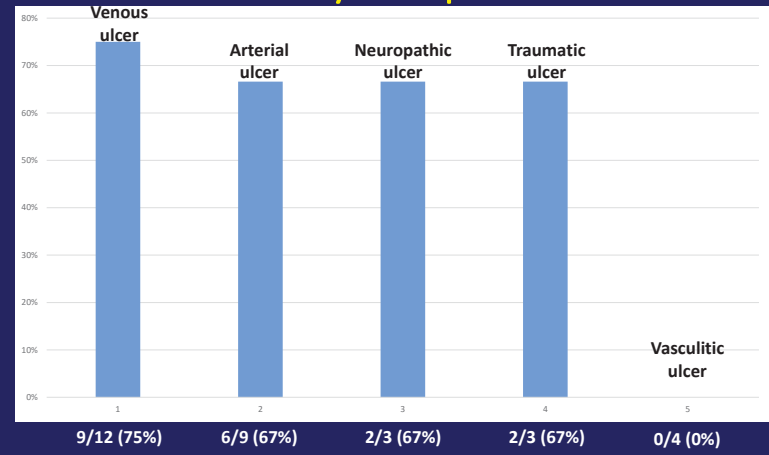
Baseline characteristics and ulcer etiology

Characteristic	CGF group (n=31)	Control group (n=30)	P value
Age (years)	70.0	68.6	NS
Sex (M/W %)	51.6/48.4	53.3/46.7	NS
Type of ulcer			
Venous	12 (38.7%)	15 (50.0%)	NS
Arterial diabetic	9 (29.0%)	6 (20.0%)	NS
Vasculitic	4 (12.9%)	3 (10.0%)	NS
Traumatic	3 (9.7%)	2 (6.7%)	NS
Neuropathic	3 (9.7%)	4 (13.3%)	NS
Wound duration (weeks)	12.81	12.47	NS
Size of ulcer (cm ²)	17.565	15.717	NS
Comorbidity			
Hypertension	22 (71.0%)	19 (63.3%)	NS
Diabetes	9 (29.0%)	12 (40.0%)	NS
Dyslipidaemias	11 (35.5%)	12 (40.0%)	NS
Tobacco abuse	8 (25.8%)	12 (40.0%)	NS
CKD (eGFR <60)	5 (16.1%)	3 (10.0%)	NS
Heart failure	3 (9.7%)	1 (3.3%)	NS
Laboratory test			
Platelet count (per mm ³)	261354	281633	NS
Hematocrit (%)	39.68	39.40	NS
White-cells count (per mm ³)	7051	7440	NS

Results



CGF group Primary end-point



CGF therapy



CGF therapy



CGF therapy



Results

No patient presented with side effects during follow-up.



"First do no harm."

Hippocratic Oath

Conclusions

- The CGF therapy was more effective than standard dressing for the treatment of non-healing ulcers of multiple etiologies
- The CGF could represent a new generation of Platelet-Rich Plasma (PRP)
- It is a safe therapy
- A larger study is currently underway