

# Characterization of Cellular and Molecular Responses to Platelet-Rich Plasma (PRP) from Elderly Patients with Acute Inflammatory Conditions in Cell Culture

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## INTRODUCTION & AIM

### CLINICAL CHALLENGE

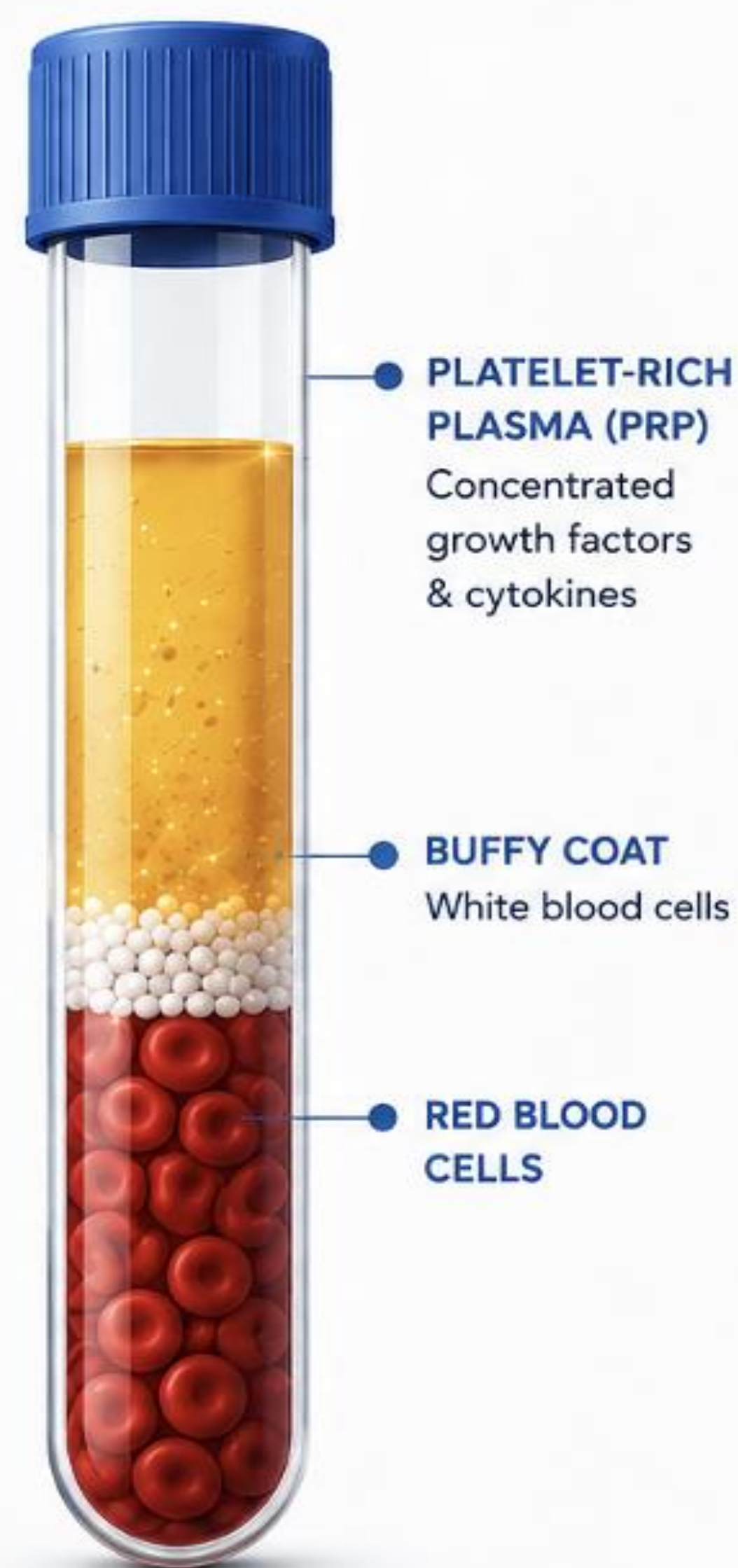
- Limitations in chronic illness treatment drive research into regenerating damaged tissues and organs.
- Inflammation can delay recovery, especially in older adults.

### WHY PRP?

- High bioavailability
- Strong regenerative potential
- Low immunogenic risk

### THERAPEUTIC IMPACT

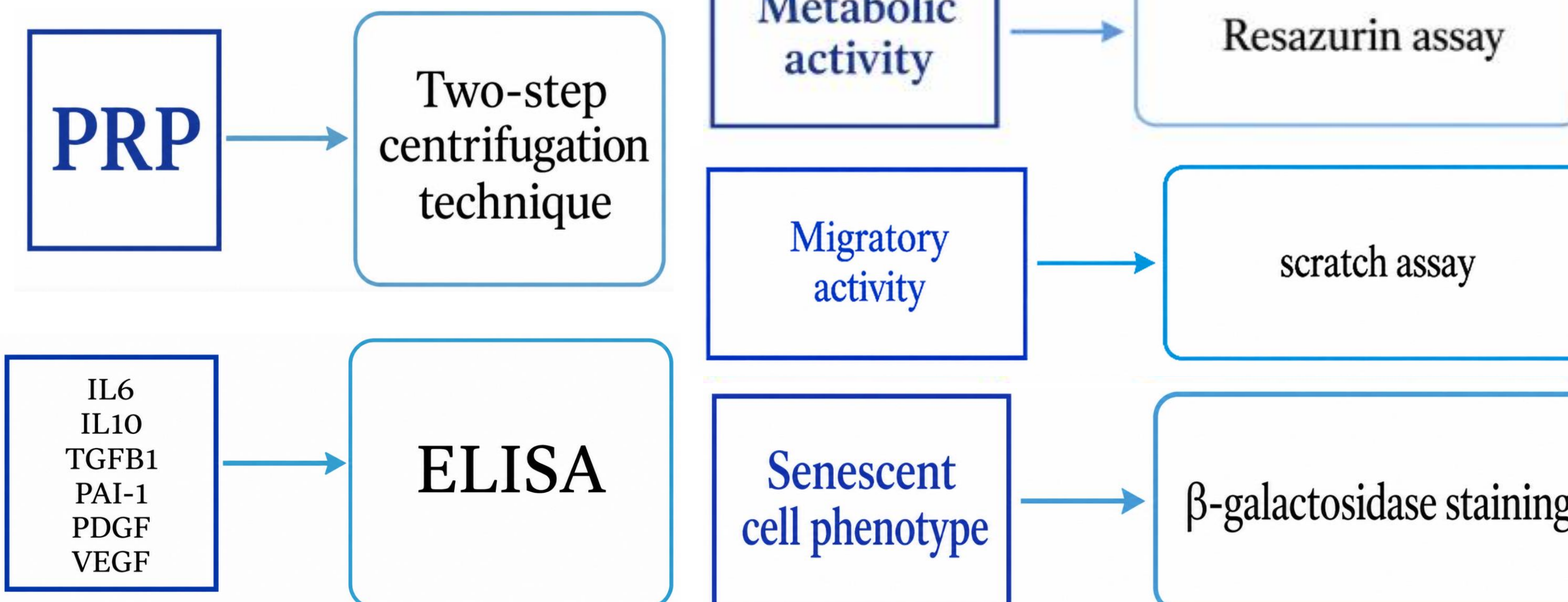
Optimizing the therapeutic use of PRP may improve treatment strategies and patient outcomes.



## METHOD

20 participants  
aged 60–70 years

Divided into two groups



**AIM: To study the regenerative potential of PRP in elderly patients with acute**

## RESULTS & DISCUSSION

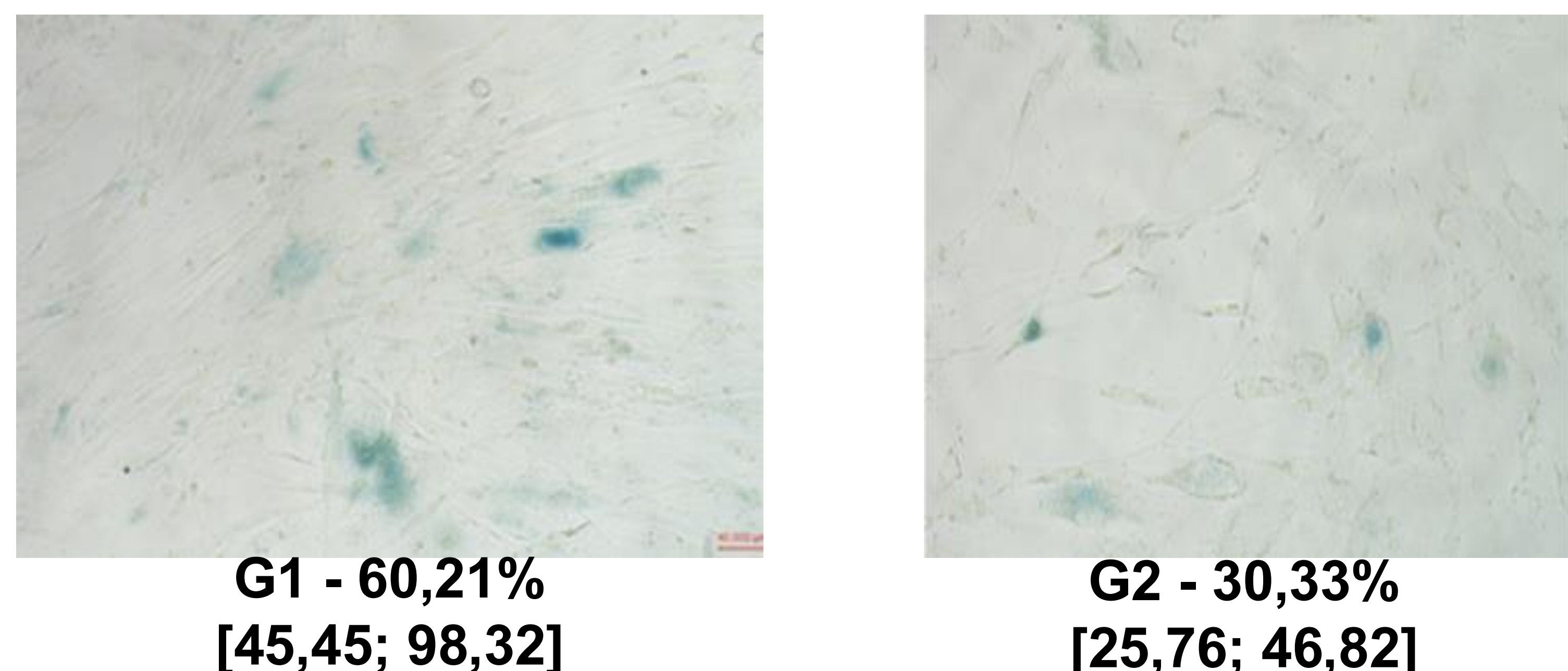
### I. Metabolic activity

Hours	G1	G2	p
24	14,50 [12,50; 88,00]	75,73 [60,26; 95,79]	0,007
48	96,90 (11,51)	87,71 (14,21)	0,113
72	92,00 [83,25; 111,50]	223,08 [179,6; 260,61]	<0,001

### II. Migratory activity



### III. Senescence



### IV. PRP cytokines in acute appendicitis

	G1	G2	p
IL6, pg/ml	1,42 [0,92; 1,86]	59,77 [36,44; 90,28]	<b>0,002</b>
TGFβ, pg/ml	4,50 [1,93; 6,75]	61,46 [42,07; 63,16]	<b>0,020</b>
IL10, pg/ml	1,14 [0,00; 3,95]	5,86 [4,08; 10,95]	<b>0,037</b>
PAI-1, pg/ml	139,57 (56,91)	94,35 (26,21)	0,132
VEGF-1, pg/ml	359,50 [227,00; 508,00]	304,20 [229,12; 453,07]	0,232
PDGF, pg/ml	0,46 [0,00; 1,35]	0,18 [0,00; 0,83]	0,495

## CONCLUSIONS

1. PRP of OA patients has a pronounced proliferative effect on DFCs, while reducing their migratory capacity, the greatest increase in metabolic activity was registered 72 h after plasma application.
2. Application of PRP of elderly OA patients in the culture of FCs reduces the percentage of senescent cells (on the 7th day).
3. RRP of OA patients is characterized by an increase in pro- and anti-inflammatory cytokines and alters the secretory response of DFCs.

## FUTURE WORK/ REFERENCES/ACKNOWLEDGMENT

Based on these data, it is planned to create a drug for the treatment of chronic wounds.

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