

# DIFFERENTIAL EFFECTS OF HYALURONIC ACID AND PRP INJECTIONS WITH AND WITHOUT AMNIOTIC FLUID PRODUCTS



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## INTRODUCTION

### Clinical need for joint pain treatments

- Osteoarthritis (OA) related joint pain is not well managed globally

### Hyaluronic Acid (HA)

- Lacks prolonged pain relief<sup>1</sup>

### Our study assesses the effects of orthobiologic augmentation in HA injections

- Platelet Rich Plasma (PRP)
- Amniotic Fluid products (Amnio)

All injections containing Amnio were conducted before the FDA halt on the use of regenerative medicine products in 2021<sup>2</sup>

### Hypothesis:

- Augmentation with orthobiologics would produce statistically and clinically significant decreases in pain

## METHODS

### n=360 intra-articular knee joint injections

- n=157 confirmed OA diagnoses

### Data:

- VAS Pain Scales
- Collected at baseline, 1, 3, 6, and 12-months from injection

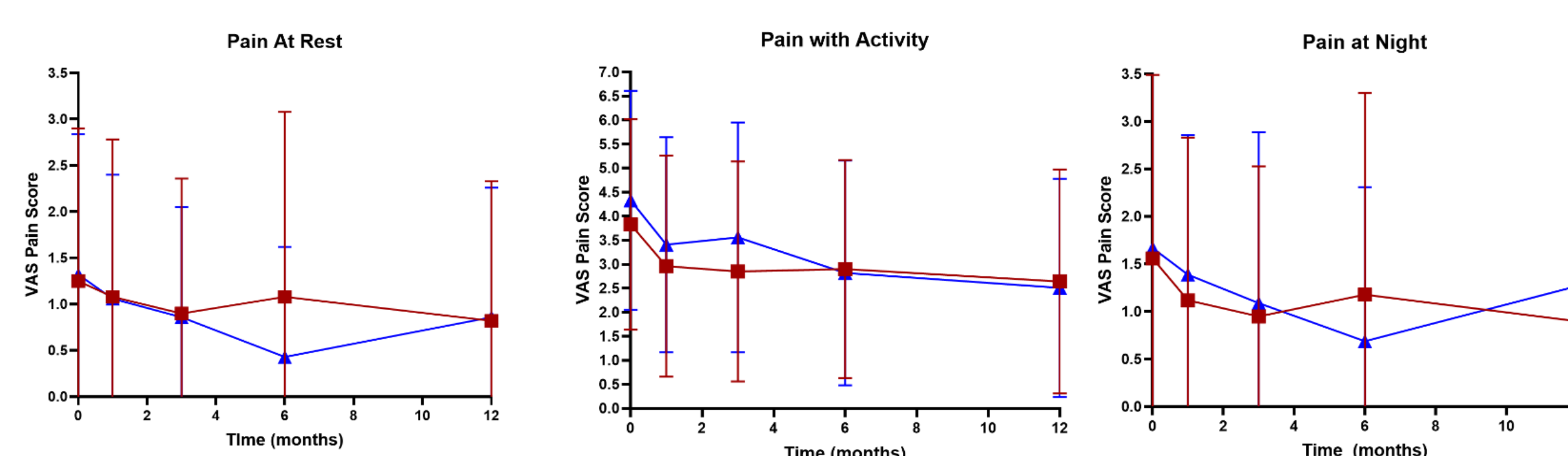
### Statistics:

- Follow-up compared to treatment cohort baseline
- Measure of statistically significant pain relief: Two-tailed t-test ( $\alpha=0.05$ )
- Measure of clinically significant pain relief: Cohen's D effect size ( $d=0.20$ )

## RESULTS

**Figure Legend:** ■ HA+PRP (n=245) ▲ HA+PRP+Amnio (n=115)

**Figure 1: VAS Pain Scores up to 12 months from injection**



### Statistical Significance Observed:

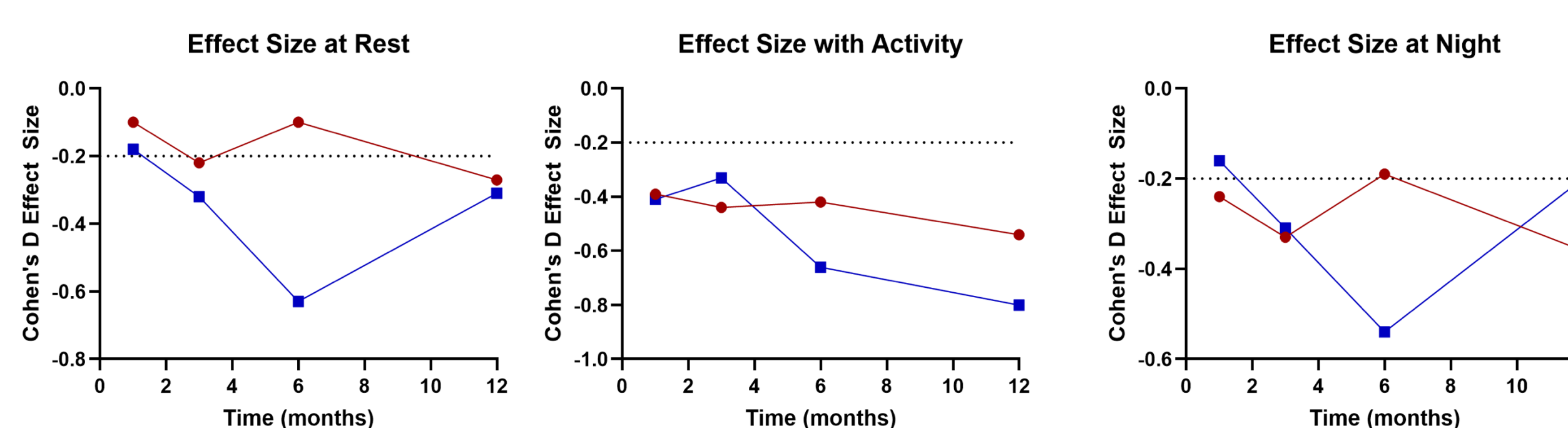
#### HA+PRP:

- Pain Relief with Activity: 1, 3, 6, 12 months

#### HA+PRP+Amnio:

- Pain Relief at Rest: 6 months
- Pain Relief with Activity: 6 and 12 months

**Figure 2: Cohen's D Effect Sizes**



### Clinical Relevance Observed:

#### HA+PRP:

- Pain Relief at Rest: 3 and 12 months
- Pain Relief with Activity: 1, 3, 6, and 12 months
- Pain Relief at Night: 1, 3, and 12 months

#### HA+PRP+Amnio:

- Pain Relief at Rest: 3, 6, and 12 months
- Pain Relief with Activity: 1, 3, 6, and 12 months
- Pain Relief at Night: 3, 6, 12 months

## DISCUSSION

### HA+PRP

- Statistically and clinically relevant pain relief
- Peak effect at 3 months

### HA+PRP+Amnio

- Statistically and clinically relevant pain relief
- Peak effect at 6 months

Pain with Activity is the most consistently significantly improved metric

### Persistent pain relief 6 months after a combined injection represents an improvement and important benefit to patients

- HA alone shows peak pain relief at 8 weeks and residual effects up to 24 weeks<sup>1</sup>

Orthobiologic-augmented injections could improve outcomes, compared to HA alone

## RECOMMENDATION

### Further investigation of orthobiologics as a pain management modality is warranted

- FDA bans on the clinical use of birth tissue products poses a roadblock to clinical implementation<sup>2</sup>

## SOURCES

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