# Purpose

We compared the efficacy of oral codeine plus acetaminophen versus oxycodone plus acetaminophen for severe pain control following photorefractive keratectomy (PRK).

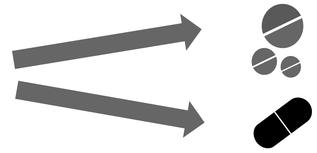
# Background

- Supporting data on the use of oral opiates and comparisons amongst the differing derivatives are still lacking in the literature.[1–3]
- In light of the opioid crisis in the United States, studies assessing the efficacy of oral acetaminophen plus opioid derivatives for postoperative PRK may help to establish a consensus on the use of opioids, and which derivative may be best suited to treat breakthrough pain following PRK.[4,5]

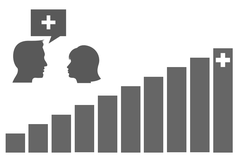
# Methods

Prospective, double-masked randomized clinical trial at the Joint Warfighter Refractive Surgery Center

200 patients receiving bilateral PRK were recruited between 2017 and 2019



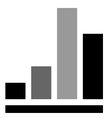
Received either acetaminophen 325mg combined with either codeine 30mg or oxycodone every 4 hours for 4 days following PRK



Patients were asked to record postoperative pain (10-point scale), assigned treatment consumption, and tetracaine use on postoperative days (POD) 0–4

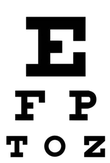
Patients were monitored at POD 1, week 1, and months 1, 3, and 6 for visual acuity and follow-up

**Study outcomes**:



Mean postoperative pain

Treatment and tetracaine use




Visual acuity

# Results

| Characteristic | Codeine Group | Oxycodone Group | *P*-Value |
|---|---|---|---|
| **Age in years,** mean ± SD (range) | 33.5 ± 7.5 (21–50) | 31.5 ± 6.5 (21–49) | 0.041 |
| **% Female** | 84% | 73% | 0.073 |
| **Spherical Equivalent,** mean ± SD | | | |
| Right eye | -3.01 ± 1.64 | -3.48 ± 1.93 | 0.066 |
| Left eye | -3.08 ± 1.73 | -3.39 ± 2.08 | 0.257 |

Table 1. Patient Demographics and Clinical Characteristics

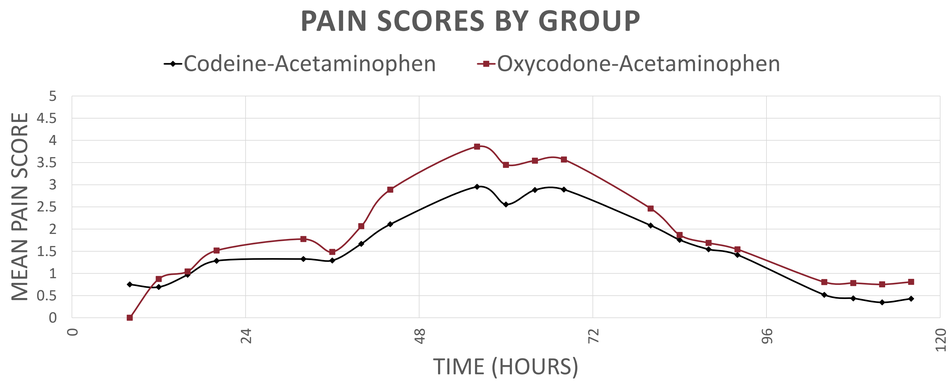
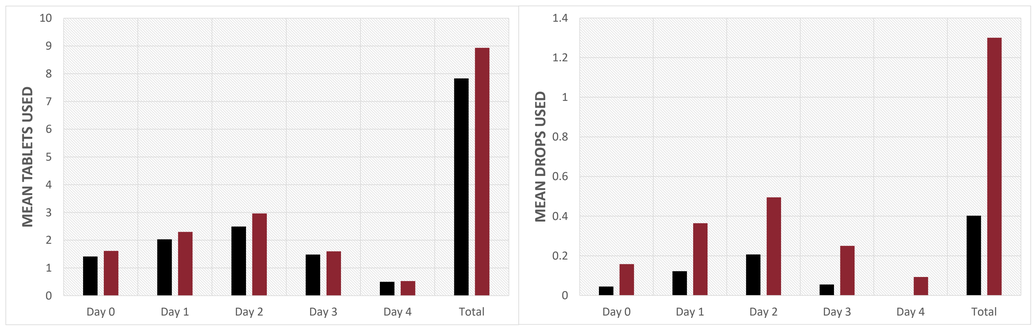



Fig. 1. Pain scores by group for postoperative days 0 through 4

| | Day 0 | Day 1 | Day 2 | Day 3 | Day 4 |
|---|---|---|---|---|---|
| Codeine | 1.03 ± 1.26 | 1.61 ± 1.67 | 2.84 ± 2.03 | 1.69 ± 1.83 | 0.42 ± 0.66 |
| Oxycodone | 1.17 ± 1.32 | 2.09 ± 1.71 | 3.58 ± 2.29 | 1.88 ± 1.90 | 0.72 ± 1.20 |
| *P*-value | 0.436 | 0.051 | 0.017 | 0.475 | 0.034 |

Table 2. Pain scores by group expressed as mean ± standard deviation.




Figs. 2 and 3. Mean tablets and tetracaine use on postoperative days 0 through 4 by group

| | Total Tablets | Total Tetracaine |
|---|---|---|
| Codeine group | 7.83 ± 4.31 | 0.40 ± 1.09 |
| Oxycodone group | 8.94 ± 5.56 | 1.30 ± 3.47 |
| *P*-value | 0.120 | 0.015 |

Table 3. Visual acuity at follow-up examinations

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| Visual Acuity (in Log MAR) on follow-up | Codeine Group OD / OS | | Ox |
|---|---|---|---|
| Day 1 | 0.25 | 0.26 | |
| Week 1 | 0.23 | 0.24 | |
| Month 1 | 0.09 | 0.08 | |
| Month 3 | -0.03 | -0.04 | |
| Month 6 | -0.07 | -0.06 | |

Table 4. Visual acuity at follow-up exam

No adverse effects or events du was reported.

# Concl

- Codeine/acetaminophen and both safe and effective for pa clinical difference in overall p week 1 and long-term visual
- Potential benefits of using low (codeine/acetaminophen) ove (oxycodone/acetaminophen) pain following PRK.

# Refer


1. Woreta FA, Gupta A, Hochstetler B, Bower K keratectomy pain. *Surv Ophthalmol.* 2013;58
2. Fay J, Juthani V. Current trends in pain man phototherapeutic keratectomy. *Curr Opin Op*
3. Pereira VB, Garcia R, Torricelli AA, Bechara Review. *Pain Physician.* 2017;20(5):429-436
4. Volkow ND, Collins FS. The Role of Science 2017;377(4):391-394.
5. Volkow ND, Jones EB, Einstein EB, Wargo E and Addiction: A Review. *JAMA Psychiatry.* 2


# Discla

- The views expressed are thos reflect the official views or po Defense or its Components.
- The voluntary, fully informed this research was obtained as DODI 3216.02_AFI40-402.