International Journal of Homoeopathic Sciences

**E-ISSN:** 2616-4493
**P-ISSN:** 2616-4485
IJHS 2019; 3(3): 62-68
Received: 01-05-2019
Accepted: 03-06-2019

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# To study efficacy of *Eschscholzia californica* mother tincture (*California poppy*) in treatment of migraine headaches

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**Abstract**
The aim of the study is to check efficacy of *Eschscholzia californica* Mother Tincture in treatment of migraine headaches. Sampling: Randomized Double Blind Placebo controlled trial, Patient-attending OPD with complaint of Headache. Sample size of 100 patients, Inclusion Criteria: Patient with complaint of Headache (Age: 15 to 65year). Exclusion: Patient suffering from Diabetes mellitus, hypertension, Hypothyroidism or taking any drug; Data Collection: Data collection is done through structured questioner; McGill Pain Questionnaire was used and pain severity was assessed on a linear 6 Grade -Verbal rating Scale (VRS). Data analysis: the data is analyzed using SPSS Version 21
**Conclusion:** It is found *Eschscholzia californica* Mother Tincture is found effective in treatment of migraine headaches.

**Keywords:** Headache, migraine, *Eschscholzia californica*

## Introduction
Migraine headache is a common neurological complaint characterized with unilateral moderate to severe throbbing/ pulsating headache with nausea, vomiting, photophobia or photophobia. Migrain is caused due to spontaneous over activity of sensory pathways in the brainstem leading to abnormal amplification in pain.
Migraine Headache has been termed the seventh disabler due to its considerable impact on the quality of life (QOL) of patient. The prevalence of headache peaks in midlife, and is low among adolescents and after the age of 60 years. Women have 18% more risk of developing migraine compared to a 6% chance in men. (Brett R; 2015) [4].

## Objective
To study efficacy of *Eschscholzia californica* Mother Tincture in treatment of migraine headaches.

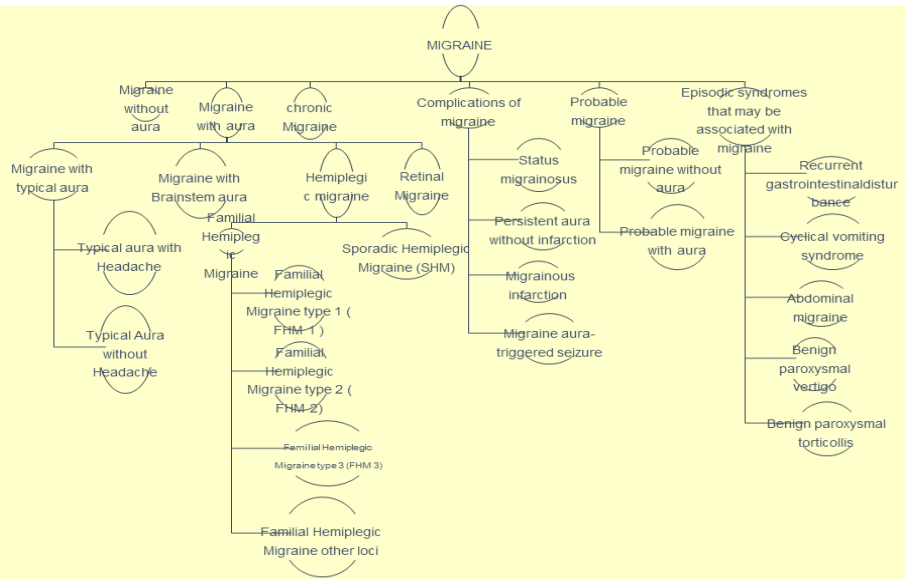


**Fig 1:** Classification of Migraine as per IHS Classification ICHD-3

**Homoeopathic medicines for Migraine**

***Eschscholzia californica***

*Eschscholzia californica* (*California poppy*. golden poppy, California sunlight, cup of gold) is a spices of flowering plant in the Papaveraceae family which is found in California used for its medicinal values.

It is a perennial plant growing to 13-152 cm tall with alternately branching glucose blue green foliage. The leaves are alternately divided into round lobed segments, the flowers are solitary on long stems, silky textured with four petal long and broad, flower color ranges through yellow, orange and red.

*Eschscholzia californica* is known for its non-narcotic antispasmodic, sedative and analgesic quality. A soporific remedy used to promote relaxation and found useful for trouble sleeping (insomnia), aches, nervous agitation, nervous tension. Anxiety bed wetting in children, depression, long-term mental and physical tiredness (neurasthenia), nerve pain, various psychiatric conditions, blood vessel problems, sensitivity to weather changes, and sedation. It is commonly known for its therapeutic effects in relieving toothache and acts as tranquilizer.

Though this research study is conducted to study the efficacy of the *Eschscholzia californica* Mother Tincture in craniofacial neuralgia and migraine headache. Other Medicines which are known for their efficacy in Materia Medica for migraine are:

*Belladonna* characterized with intense throbbing, pulsating headache. *Glonoinum* an excellent medicine for congestive headaches of migraine triggered by sun exposure. *Spigelia* for left-sided migraine. *Sanguinaria canadensis* for right-sided migraine. *Iris versicolor* migraine associated with intense nausea, vomiting or acidity. *Nux Vomica* for migraine with gastric troubles. *Natrum Carbonicum* is suitable for sun headache migraine. *Natrum Muriaticum* migraine attacks that worsen around the menstrual cycle. *Sepia* migraine in women around menopause. *Kali Phos* for migraine due to stress.

**Methodology**

A randomized, double blind, placebo controlled trial enrolling 100 patients complaining of Headache. who met the selection criteria.

**Sampling**

Random sampling, Patient attending OPD with complaint of headache.

**Duration of Study**

1 March 2019 to 31 June 2019 (4 Month)

**Dosage**

20 drops of Mother Tincture twice a day. Morning and evening (Empty Stomach).

**Inclusion Criteria**

- Patient between age group 15 to 65 year visiting OPD with complaint of headache with no other serious physical abnormality and not taking any analgesics.
- Patient who has ability to understand the consent and is willing to comply with the requirement of the trial.

**Exclusion**

- Patient suffering from Diabetes mellitus, hypertension, Hypothyroidism, asthma or taking any allopathic. Homoeopathic or Ayurvedic treatment.
- Patient who had taken drugs for insomnia in past or present.
- Pregnant and lactation
- Previous participation in any clinical trial / proving in last 6 month
- Patient taking alcohol / smoking/ tobacco.
- Any contradiction to blood sampling.

**Diagnostic Consideration**

- In Routine Diagnostic imaging is not recommended for migraine, "Additional testing in patients without atypical symptoms or an abnormal neurologic examination is unlikely to be helpful" (Conicella 2008, Beithon 2013) [5]
- Case History and physical examination is sufficient to diagnose Migraine clinically.(Conicella 2008, Beithon 2013) [5]

**Disposition**

**Drug A:** *Eschscholzia californica* Q Mother Tincture (35 subjects)

**Drug B:** *Eschscholzia californica* Q Mother Tincture (35 subjects)

**Drug C:** Placebo Q Mother Tincture **(**30 subjects)

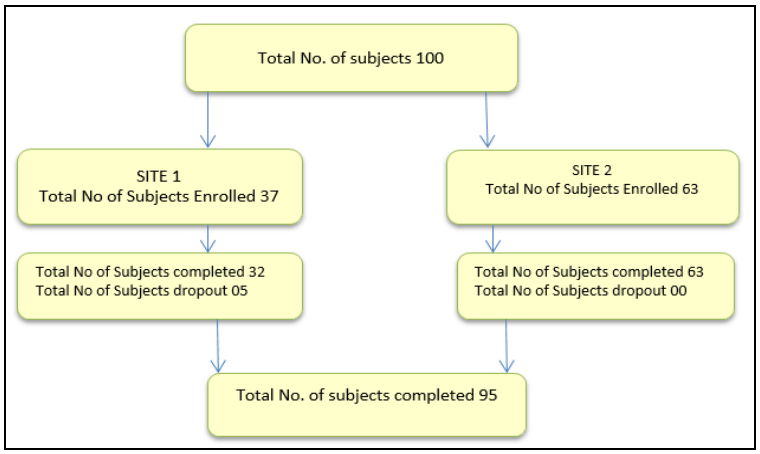


**Fig 2:** Disposition Flowchart

**Data Collection**
Data collection is done through structured questioner (McGill Pain Questionnaire) and pain severity was assessed on a linear 6 Grade -Verbal rating Scale (VRS) The enrollment day was considered as the base line data and subjects were asked to visit on: Day 10, Day 20, Day 30.

**End Point**
Fulfillment of primary study objectives.

In adverse event/ Incidence.

**Statistical Analysis**
The data is analyzed using SPSS Version 21. Significance level 5 %. The sample mean were assessed using paired t-test.

**Result**
**Efficacy Analysis (For Drug A)**

**Table 1:** Case Processing Summary (Drug A)

| DRUG A | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| How strong is your pain after drug a | 35 | 100.0% | 0 | 0.0% | 35 | 100.0% |
| How strong is your pain | 35 | 100.0% | 0 | 0.0% | 35 | 100.0% |

**Table 2:** Drug A-Descriptives

| | | | Statistic | Std. Error |
|---|---|---|---|---|
| how strong is your pain after drug a | **Mean** | | 1.3714 | .11657 |
| | 95% Confidence Interval for Mean | Lower Bound | 1.1345 | |
| | | Upper Bound | 1.6083 | |
| | 5% Trimmed Mean | | 1.3571 | |
| | Median | | 1.0000 | |
| | Variance | | .476 | |
| | Std. Deviation | | .68966 | |
| | Minimum | | .00 | |
| | Maximum | | 3.00 | |
| | Range | | 3.00 | |
| | Interquartile Range | | 1.00 | |
| | Skewness | | .493 | .398 |
| | Kurtosis | | .321 | .778 |
| How Strong Is Your Pain | Mean | | 3.8857 | .21604 |
| | 95% Confidence Interval for Mean | Lower Bound | 3.4467 | |
| | | Upper Bound | 4.3248 | |
| | 5% Trimmed Mean | | 4.0397 | |
| | Median | | 4.0000 | |
| | Variance | | 1.634 | |
| | Std. Deviation | | 1.27813 | |
| | Minimum | | .00 | |
| | Maximum | | 5.00 | |
| | Range | | 5.00 | |
| | Interquartile Range | | 2.00 | |
| | Skewness | | -1.657 | .398 |
| | Kurtosis | | 3.198 | .778 |

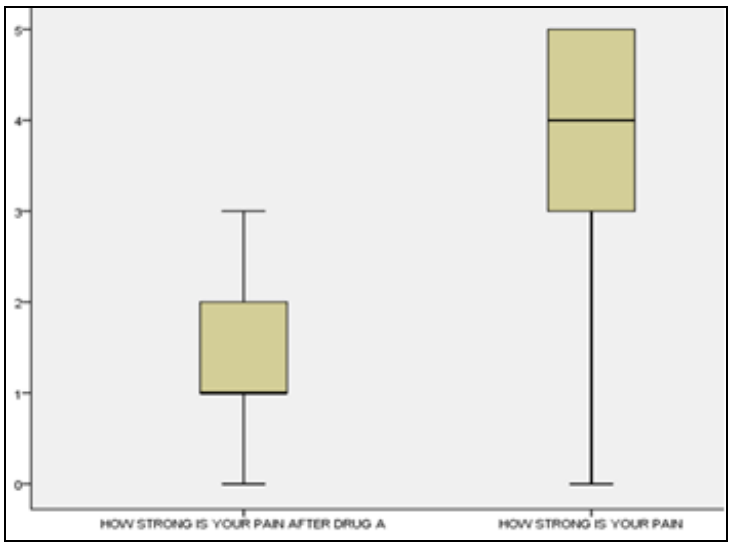


**Fig 3:** Efficacy Analysis **(**DRUG A)

## Efficacy Analysis (For Drug B)

**Table 3:** Case Processing Summary (Drug B)

| Drug B | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| How strong is your pain | 35 | 100.0% | 0 | 0.0% | 35 | 100.0% |
| How strong is your pain after drug b | 35 | 100.0% | 0 | 0.0% | 35 | 100.0% |

**Table 4:** Drug B-Descriptive

| | | | Statistic | Std. Error |
|---|---|---|---|---|
| How strong is your pain | **Mean** | | 3.9429 | .19204 |
| | 95% Confidence Interval for Mean | Lower Bound | 3.5526 | |
| | | Upper Bound | 4.3331 | |
| | 5% Trimmed Mean | | 4.1032 | |
| | Median | | 4.0000 | |
| | Variance | | 1.291 | |
| | Std. Deviation | | 1.13611 | |
| | Minimum | | .00 | |
| | Maximum | | 5.00 | |
| | Range | | 5.00 | |
| | Interquartile Range | | 1.00 | |
| | Skewness | | -2.435 | .398 |
| | Kurtosis | | 7.184 | .778 |
| How strong is your pain after drug b | Mean | | .9429 | .14749 |
| | 95% Confidence Interval for Mean | Lower Bound | .6431 | |
| | | Upper Bound | 1.2426 | |
| | 5% Trimmed Mean | | .8810 | |
| | Median | | 1.0000 | |
| | Variance | | .761 | |
| | Std. Deviation | | .87255 | |
| | Minimum | | .00 | |
| | Maximum | | 3.00 | |
| | Range | | 3.00 | |
| | Interquartile Range | | 1.00 | |
| | Skewness | | .678 | .398 |
| | Kurtosis | | -.088 | .778 |

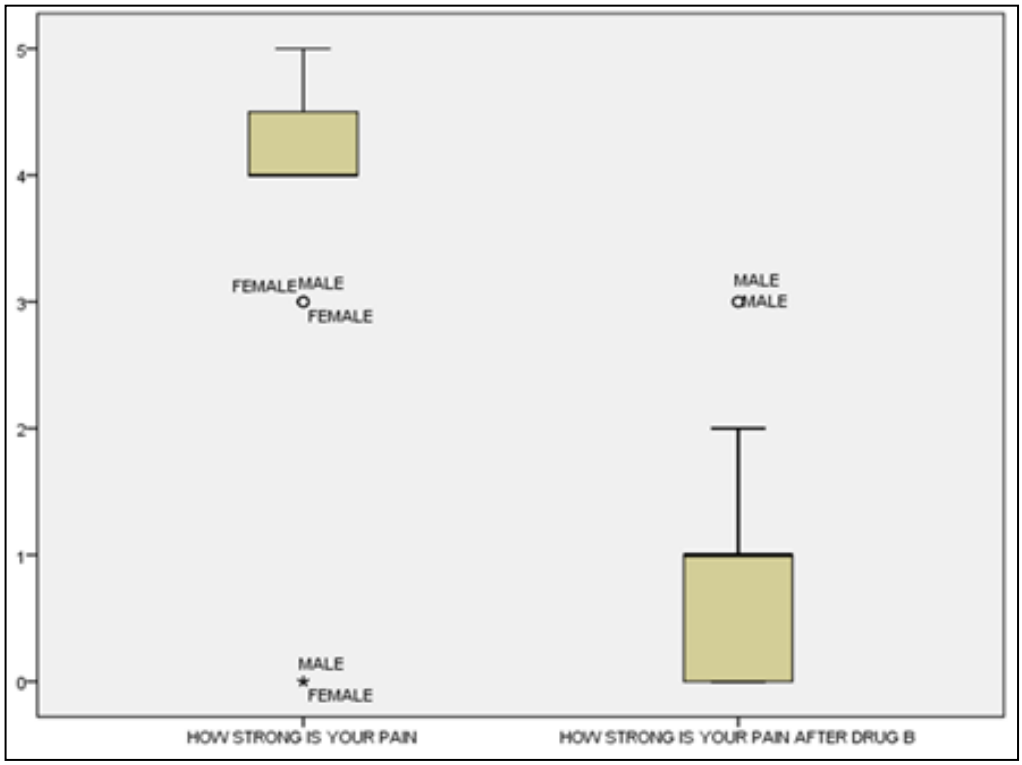


**Fig 4:** Efficacy Analysis **(**Drug B)

## Efficacy Analysis (For Drug C)

**Table 5:** Case Processing Summary (Drug C)

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| How strong is your pain | 30 | 85.7% | 5 | 14.3% | 35 | 100.0% |
| How strong is your pain after drug c | 30 | 85.7% | 5 | 14.3% | 35 | 100.0% |

**Table 6:** Drug C-Descriptives

| | | | Statistic | Std. Error |
|---|---|---|---|---|
| How strong is your pain | Mean | | 3.5333 | .21832 |
| | 95% Confidence Interval for Mean | Lower Bound | 3.0868 | |
| | | Upper Bound | 3.9798 | |
| | 5% Trimmed Mean | | 3.6481 | |
| | Median | | 4.0000 | |
| | Variance | | 1.430 | |
| | Std. Deviation | | 1.19578 | |
| | Minimum | | .00 | |
| | Maximum | | 5.00 | |
| | Range | | 5.00 | |
| | Interquartile Range | | 1.00 | |
| | Skewness | | -1.575 | .427 |
| | Kurtosis | | 3.640 | .833 |
| How strong is your pain after drug c | Mean | | 3.3000 | .24518 |
| | 95% Confidence Interval for Mean | Lower Bound | 2.7985 | |
| | | Upper Bound | 3.8015 | |
| | 5% Trimmed Mean | | 3.3889 | |
| | Median | | 3.5000 | |
| | Variance | | 1.803 | |
| | Std. Deviation | | 1.34293 | |
| | Minimum | | .00 | |
| | Maximum | | 5.00 | |
| | Range | | 5.00 | |
| | Interquartile Range | | 1.00 | |
| | Skewness | | -.959 | .427 |
| | Kurtosis | | .810 | .833 |

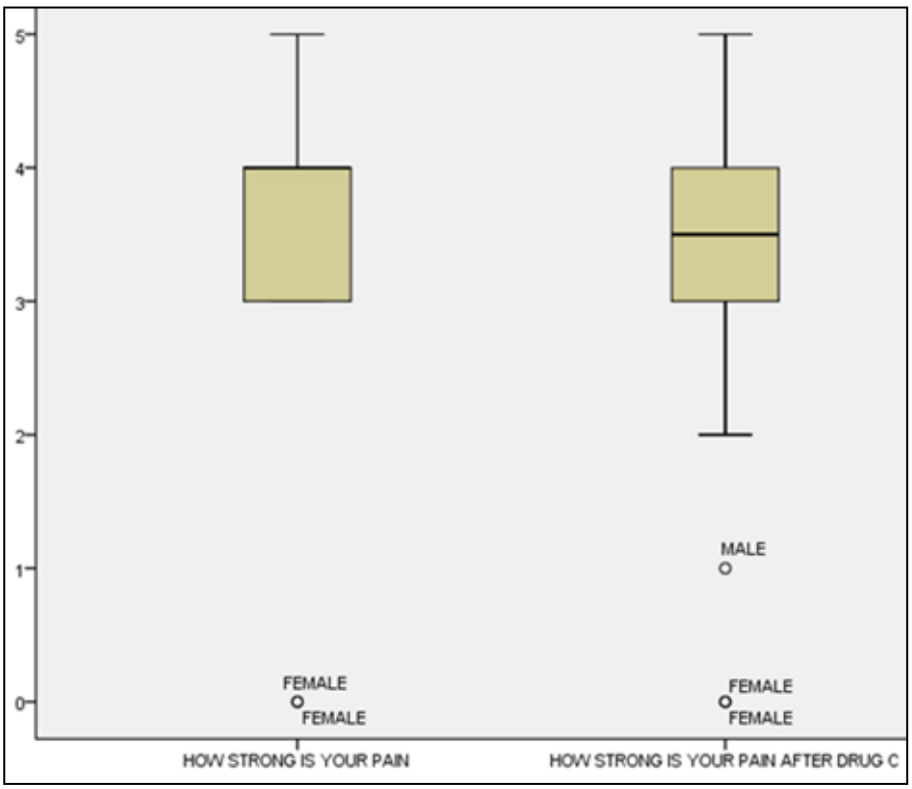


**Fig 5:** Efficacy Analysis **(**Drug C)

**Paired Sample t Test: (**Confidence Interval Percentage 95 %)

**Table 7:** Paired Sample Statistics

| Paired Samples Statistics | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Drug A | How strong is your pain | 3.8857 | 35 | 1.27813 | .21604 |
| | How strong is your pain after drug a | 1.3714 | 35 | .68966 | .11657 |
| Drug B | How strong is your pain | 3.9429 | 35 | 1.13611 | .19204 |
| | How strong is your pain after drug b | .9429 | 35 | .87255 | .14749 |
| Drug C | How strong is your pain | 3.5333 | 30 | 1.19578 | .21832 |
| | How strong is your pain after drug c | 3.3000 | 30 | 1.34293 | .24518 |

**Table 8:** Paired Sample Correlation

| Paired Samples Correlations | | N | Correlation | Sig. |
|---|---|---|---|---|
| Drug A | How strong is your pain & how strong is your pain after drug a | 35 | .583 | .000 |
| Drug B | How strong is your pain & how strong is your pain after drug b | 35 | .234 | .176 |
| Drug C | How strong is your pain & how strong is your pain after drug c | 30 | .627 | .000 |

The paired Sample correlational table adds the information that the intensity of pain before and after taking Drug A are significantly positively correlated (r =.583). Similarly for Drug B (r =.243) and for Drug C (r =.627).

**Table 9:** Paired Sample Test

| Paired Samples Test | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Drug A | How strong is your pain - how strong is your pain after drug a | 2.51429 | 1.03955 | .17572 | 2.15719 | 2.87138 | 14.309 | 34 | .000 |
| Drug B | How strong is your pain - how strong is your pain after drug b | 3.00000 | 1.26025 | .21302 | 2.56709 | 3.43291 | 14.083 | 34 | .000 |
| Drug C | How strong is your pain - how strong is your pain after drug c | .23333 | 1.10433 | .20162 | -.17903 | .64570 | 1.157 | 29 | .257 |

## Conclusion

Total number of subject analysed in the study is 100, of which 35 subjects were randomly assigned to drug A group, 35 were randomly assigned to the drug B group and 30 subjects to the drug C group, 5 subjects were drop out of the study. The subject were called for screening visit and were given the informed consent and screening procedure were started. Once the subjects were screen passed, eventually the subjects were randomized into Group A (*E. californica*). Group B (*E. californica*) and Group C (Placebo Group). The blind was broken after 30 Days when as per the protocol the trial ended.

The data obtained from the trial group was analyzed statistically using paired t test and the data was compared between the active and placebo group for the parameter including the palliation in the pain intensity.

From the statistical analysis we conclude that

**Drug A:** *Eschscholzia californica* Q Mother Tincture There was a significant average difference between the intensity of pain before and after taking *Eschscholzia californica* Q Mother Tincture (t35 = 14.309. $p$<0.001). On average intensity of pain was 2.5 times less after taking *Eschscholzia californica* Q Mother Tincture.

**Drug B:** *Eschscholzia californica* Q Mother Tincture There was a significant average difference between the intensity of pain before and after taking *Eschscholzia californica* Q Mother Tincture (t35 = 14.083. $p$<0.001). On average intensity of pain was 3.0 times less after taking *Eschscholzia californica* Q Mother Tincture.

**Drug C:** Placebo There was a no significant average difference between the intensity of pain before and after placebo (t30 = 1.157. $p$<0.001). On average intensity of pain was 0.2 times less after taking placebo thus not having any significant relief.

Thus it is concluded from this study that *E. californica* is possessing the therapeutic palliative effect in controlling and reducing the intensity of the migraine headache clinically.

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