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# Argemone mexicana

*A multicentric double blind Homoeopathic Pathogenetic Trial (Drug Proving) carried out by CCRH*

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## Abstract

***Objective :*** **Objective of the study was to elicit the pharmacodynamic response of the drug, Argemone mexicana (prickly poppy) on healthy human volunteers, in non-toxic doses.**

***Methodology :*** **The drug was proved through a double-blind placebo controlled technique and is a multi-centric study. Trial drug was proved in three potencies (200C, 30C and 6C) on 38 volunteers who were selected and declared apparently healthy during their pre-trial examination by specialists. The volunteers took the three potencies (56 dozes of each potency ) in three stages for a varying period. The symptoms generated during the trial period were noted by the provers and elaborated and cross examined by the Proving Masters. The data obtained from different centers were compiled at proving-cum-data processing cell at CCRH headquarters after de-coding.**

***Observations :*** **Out of the 25 provers who were on actual drug trial, 18 manifested symptoms. Drug was able to produce symptoms in each potency more or less on every part of the body. Only a few symptoms appeared in more than one prover. Some of the symptoms mentioned in different literatures after fragmentary provings have been reproved.**

***Conclusion :*** **Symptoms appeared (new and reproved) during the proving trial will add to the literature available on the drug and benefit the research scholars and clinicians. This also needs verification through clinical application in different settings.**

**Keywords :** homoeopathy; homoeopathic pathogenetic trial; drug proving; argemone mexicana.

## Introduction

The plant Argemone mexicana has been used by Indians, natives of the western US and parts of Mexico. Properties and uses have been ascribed as follows:

The root is diuretic, alterative, anodyne, hypnotic and used in chronic skin diseases. The seeds are laxative, emetic, expectorant and demulcent. And also used in diarrhoea and dysentery but in large quantities are poisonous. The juice of the plant is used in jaundice and cutaneous affections. The oil is purgative and also used for cutaneous affections. Ingestion of argemone oil causes high tension glaucoma, dropsy, diarrhoea, vomiting and anaemia[1].

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The seed-pods secrete a pale-yellow latex substance when cut open. This argemone resin contains berberine and protopine, and is used medicinally as a sedative. The seeds contain 22-36% of pale yellow non-edible oil, called argemone oil or katkar oil, which contains the toxic alkaloids sanguinarine and dihydrosanguinarine. The seeds resemble the seeds of Brassica nigra (mustard). As a result, mustard can be adulterated by Argemone seeds, rendering it poisonous[2].

Dr. luis g. de legarreta conducted the first proving of this drug[3] but complete symptomatology is not available. So there was a need for reproving to obtain its effects on healthy human being, for use in Homoeopathy.

## Objective

To find out the pathogenetic effects of Argemone mexicana on healthy human volunteers.

## Literature review

Botanical name : *Argemone mexicana* Linn.

Family : Papaveraceae

Common names[1] :

| | | |
|---|---|---|
| Bengali | : | Shialkanta |
| Hindi | : | Pila-dhatura, Shialkanta, Bharbhand. |
| English | : | Prickly poppy, Mexican poppy. |
| Oriya | : | Kantakusham |
| Tamil | : | Karukkansedi |
| Telegu | : | Brahmdandidandu |

## Description

Shrub, 45-75 cm. high, prickly, leaves 2.5-4 cm. long, sessile, sinuate-lobbed, blotched with white, the lobes tipped with slender yellow spines; flowers pale-yellow, 7-8 cm. broad, sepals and oblong pod prickly, the latter opening by valves from the top, leaving the thread-like placentae between; seeds small and black; juice milky yellowish[3].

## Distribution

Naturalized throughout India up to an altitude of 1500 m[1]. Grows wild in Mexico, cultivated for ornamental purposes in some parts of United States[3].

## History of Homoeopathic proving and uses

The tincture of this plant has a soothing, hypnotic, antispasmodic effects in whooping cough. The Mexican Indians used the juice of this plant to treat corneal opacities, incipient cataracts and pterygion. Dr. Luis g. de Legarreta made the first provings of this drug[3].

A prover smoked a quantity of the seeds and before he had smoked out his pipe, he fell into a sound sleep; not easily awakened[4].

## Part used in Homoeopathy

Whole plant/fresh plant when beginning to bloom.[3]

## Toxic effects

The adulteration of edible oil with argemone oil is responsible for epidemic dropsy. The pollens of the plant are known to cause allergy. Pure argemone oil causes fatty infiltration of liver and vascular changes in experimental rats. Controlled studies on the toxicity of argemone oil carried out in monkeys, suggested that 0.05 ml of the oil/kg boy weight was associated with some toxic manifestation. Argemone oil caused a reversal of the albumin: globulin ratio and a significant increase in the GOT (glutamic-oxaloacetic transaminase) values in male albino rats. A mild degree of anaemia associated with myocardial and hepatic necrosis of various degrees was also found in experimental rats. Effects of short term oral feeding of argemone oil on histopathological changes, haematological indices and selected marker parameters of toxicity were investigated to observe the exact sites and mode of action of the oil in rats. The results suggested that liver, lungs, heart and kidneys were the target organs of argemone oil toxicity and that membrane destruction might be a possible mode of action[1].

Toxicological effects of seeds given daily up to the death or for a maximum of 10 days in rats revealed sedation, passiveness, sluggishness, feeble or no muscular jerks, abdominal contractions and increased defecation. Also black secretion from eyes, corneal opacity, piloerection and oedema of the hind legs and submandibular space were noted.[1]

The total alkaloid of Argemone on intraperitonial or subcutaneous administration in rats for 3 to 6 week produced ascites, diarrhea, loss of hair and loss of weight in 66 percent of rats.[1]

Seed oil caused glaucoma, dropsy, diarrhoea, vomiting and it is also carcinogenic. (Diarrhoea and death in some animals are reported). Whole plant and seeds contain toxic alkaloids.[5]

## Materials and Methodology

### *Location and duration of study:*

| *Name of the Unit* | *Location* | *Duration* |
|---|---|---|
| * Drug Proving Research Unit (H) | Kolkata | 2003-04 |
| * Drug Proving Research Unit (H) | Midnapore | 2003-04 |
| * Drug Proving Research Unit (H) | Ghaziabad | 2004-05 |

### Participants

Thirty eight (38) apparently healthy, comprising of twenty nine (29) male and nine (9) female volunteers between the age group of 18-45 years were enrolled for this study. Pre and Post trial medical examinations of the participants were carried out by General Physicians, Psychiatrists, Cardiologists, Ophthalmologists, ENT Specialists, Dermatologists, Gynaecologists and Radiologists, at all the three centres.

### Drug

*Argemone mexicana* in 6c, 30c and 200c potencies was procured from M/s. Dr. Willmar Schwabe India Pvt. Ltd., India, in 100 ml. sealed phial of each dilution. Globules were medicated with these dilutions at headquarter office and sent to drug proving units in coded phials along with placebo.

### Placebo

Placebo was made up of plain globules (number 30) moistened with plain alcohol (unsuccussed).

### Design

The study was conducted through placebo controlled 'double blind technique.' Before commencing the study, all volunteers were screened according to the drug proving protocol of CCRH. Ethical approval was obtained and written informed consent from each volunteer was obtained before commencing the study. Pre-trial Medical Examination (PME) was conducted to confirm health status of the volunteers. Volunteers declared as healthy, were enrolled in the study. Out of thirty eight volunteers, twenty five (25) were kept on drug (verum) and thirteen (13) were control volunteers. 30% volunteers were selected as control in randomized fashion according to CCRH protocol. All volunteers were assigned code numbers and the coded drugs (including placebo) of different potencies were supplied in separate glass phials bearing code numbers pertaining to respective volunteers.

### Method

The study consisted of *three stages* of three different potencies of the trial drug. The duration of each stage was fourteen days and total number of doses was fifty six at each stage. The drug was administered in descending order of potency, i.e. first in 200c, followed by 30c and finally in 6c.

In *first stage* (200c potency), the provers were asked to take 4-6 globules (size 30) of the coded drug, dry on tongue, four times daily for fourteen days.

If no symptom was observed, they were asked to note as 'No Symptom' with date and time of intake of the respective dose of the drug daily and they were asked to consume 56 doses (4 doses daily for 14 days).

If symtoms appear, provers were instructed to stop taking the drug as soon as any change was felt by them while taking the drug or if any sign(s) &/or symptom(s) developed during the trial. Intake of drug remained suspended till the sign(s) &/or symptom(s) totally disappeared. The provers were instructed not to take medicine for a further period of seven days after disappearance of sign(s) &/or symptom(s). This was followed by a further (symptom free) period for seven days.

The provers were asked to note down the new sign(s) &/or symptom(s) in the 'Prover's Day Book Proforma' in sequence of their appearance, number of doses after which the symptom(s) appeared, time of onset and duration of the symptom(s), as well as the details of each symptom in respect of its location, sensation, modalities and concomitants, if any.

The provers took the remaining doses of the drug again in the same dose schedule as above and in case of further appearance of new sign(s) &/or symptom(s) or re-appearance of the earlier sign(s) &/or symptom(s) the same procedure as stated above was followed till the prover completed 56 doses of the potency.

Before commencing the administration of the next potencies of the drug (30c & 6c), provers were put on a rest period for fourteen days and same procedure as mentioned above (followed for 200c potency) was adopted.

Each prover was interrogated by the Proving Master for verification of sign(s) &/or symptom(s) every day. Complete symptoms verified by the Proving Masters were

recorded in the 'Symptoms Elaboration Proforma'. During the course of trial, the volunteers were referred for specific laboratory investigations as advised by the specialists to rule out any cause other than the drug pathogenesis, if required.

After completion of trial of three potencies, the provers were examined by the specialists as per the prescribed 'Terminal Medical Examination' (TME) format.

The "Prover's Day Book Proforma", "Symptoms Elaboration Proforma" and "Pathological Report Sheets" along with Terminal Medical Examination sheets' were received by the Drug Proving-cum-Data Processing Cell at CCRH headquarters immediately on completion of the respective stages of proving for compilation of final data generated through the trial. During compilation of the data, de-coding was done and sign(s) &/or symptom(s) were compiled separately for volunteers on 'drug' and 'placebo'. Symptoms appeared in both the groups were compared. Symptoms exactly of same type which appeared in placebo group were deleted from those of the drug group.

## Results

In Drug Proving Research Unit (DPRU), Kolkata all eight provers manifested symptoms; in DPRU, Midnapore out of thirteen, nine provers reported symptoms, and in DPRU, Ghaziabad, out of four, one prover reported symptoms consequent upon the administration of drug.

**During proving of the drug, the following symptoms, observed and compiled from three centers.**

- *In parenthesis, 1st no. after every symptom denotes no. of volunteer produced that particular symptom and 2nd no. /3rd no. denotes potency used.*
- *agg. (Aggravation), amel. (Amelioration).*
- *symptoms produced during pathogenetic trial of the drug were compared with the homoeopathic literature cited in bibliography and those symptoms which were found in the literature are shown in italic, superscripted with numarical which refers to the particular literature.*

***Location*** ***Symptoms Observed***

*Head*

- Vertigo before going to sleep (1, 30c, 200c)
- Heaviness in head, *agg.* morning. (3, 30c)
- *Severe headache*[6], *agg.* morning (1, 30c)
- Bursting pain in forehead, *amel.* by pressure(1, 200c) with heaviness (1, 6c)
- Pain in head while combing but feels better on pulling of hair. Falling of hair and sweating on head. (1, 6c)
- Pain in occipital region, right side, *agg.* evening (1,200c)
- Crawling sensation in head, occipital region, *amel.* by hard pressure(1, 30c)

*Eye*

- Burning sensation in eyes with lachrymation, *agg.* reading, *amel.* washing with cold water(1,6c)
- Itching and redness in eyes with burning pain, *agg.* sun heat, *amel.* washing with cold water(1,30c)
- Redness of eyes with fever (1, 200c)
- Swelling of upper eye lid of left eye (1, 200c)

*Nose*

- Heaviness in nose and eyes (1, 6c)
- Running nose (2) with headache and pain in throat (1, 30c)
- Stoppage of nose (2, 30c, 200c), alternate side with cough (1, 200c)

*Face*

- Papular eruptions on face with itching (1,200c)

*Mouth*

- Swelling inside the right cheek, painful to touch (1,30c)
- Pain and swelling of sublingual glands of right side. (1,200c)
- Thick white coating on tongue (1, 6c).
- Tongue moist and red patches on tongue (1,30c)

*Throat*

- Constriction in throat (1,200c)
- *Dryness of throat*[6] (1,30c)
- Sore throat (1,30c)
- Pain and redness in throat, *agg.* in morning, drinking water, eating (1,30c)
- Pain and burning in throat, *amel.* by drinking cold water (1, 30c, 200c)

*Stomach*

- *Nausea, soreness in upper abdomen*[5,6] with hiccough and heartburn, *agg.* after eating, *amel.* by drinking cold water (4, 6c, 200c)
- Burning sensation in stomach, *amel.* after eating(1, 6c)
- *No desire for food*[5] (2, 30c, 200c)

- Thirst for cold water (1,200c)
- Frequent thirst for cold water in small quantity (1,30c)

*Abdomen*

- *Great flatulence* [5] with loose stools (1,200c)
- *Cramping pain in abdomen* [6], gradually increasing, *amel.* by light pressure (1, 6c)
- Pain in abdomen before stool (200c), pain in left hypochondrium which goes to right hypochondrium during stool (1, 6c)
- Pain in umbilical region, *amel.* by pressure (200c), pain and rumbling in abdomen during stool (1,30c)
- Griping pain about umbilical region with loose watery stool (2, 6c, 30c)

*Rectum*

- Stitching pain in rectum after passing hard stool with great strain; frequent urging for stool (1, 6c)
- Itching in rectum (1, 30c)
- Loose stool with excessive flatus *agg.* morning (2, 30c); alternates with scanty unsatisfactory hard stool (1, 6c),
- Involuntary stool with nausea and profuse sweat (1, 6c)

*Stool*

- Dry, hard stool (1, 6c)
- Loose, watery frequent stool (2, 200c, 30c)
- Stool mixed with mucus (1, 200c)
- Yellow,watery stool, *agg.* morning,(1, 6c)
- Offensive, watery stool, *agg.* morning (2, 200c, 30c)
- Stool mucoid, offensive, scanty and frequent (1, 6c)

*Cough*

- Cough dry, *agg.* when lying down and morning, (1, 200c)
- Cough with nausea and scanty expectoration, *agg.* in morning (1, 200c)
- Cough with pain in chest and yellow expectoration (1, 30c)

*Chest*

- Itching on right side of chest (1, 200c)

*Back*

- Pain in right side of neck extending from back of head and extends up to right shoulder and right hand. (1, 30c)

*Extremities*

- Cramping pain in right thigh, left leg and calf, *agg.* when crossing the legs, lying down and during walking (1, 200c)
- Tearing pain in knee and hip joints, *agg.* in evening, by motion, *amel.* by rest (1, 30c)
- Electric like *pain in left knee joint* [5] descending in nature (1, 200c)
- Cutting pain in dorsum and sole of right foot, *agg.* during walking, *amel.* during rest (1, 30c)
- Pain in thighs (1, 6c)

*Sleep*

- *Disturbed sleep* [6] at night, sleepiness throughout the day (1, 6c)
- Sleepiness with weakness (3, 6c, 200c)

*Fever*

- Fever with chill without sweat, *agg.* at 10 am (1, 200c)
- Fever with thirstlessness (1, 200c)
- Fever, *agg.* at night with headache and cough (1, 30c)
- Fever with thirst (1, 6c)

*Perspiration*

- Profuse perspiration (1, 6c)

*Skin*

- Red, papular eruptions between fingers of left hand, folds of hands, abdomen, hip, scrotum and penis; itching *amel.* after scratching, followed by oozing of blood and clear exudation (1, 30c)
- Itching all over the body without eruptions (1, 6c)
- Pustule in right axilla, painful (1, 200c)
- Red eruptions (ring shaped) on right arm and right thigh which turn black (1, 30c)
- Reddish eruptions with itching in hands, sticky discharge after scratching, *agg.* morning and night. *amel.* applying cold water (1, 30c).
- Itching in groin (1, 6c)
- Papular eruptions on legs with itching (1, 200c)

*General*

- *Weakness* [5] *amel.* while lying down( 1, 200c)
- Weakness and lethargic feeling with desire to sleep (1, 6c)

## Discussion

Out of the 25 provers who were on actual drug trial, 18 manifested symptoms. Drug was able to produce physical symptoms in each potency more or less on every part of the body. Only nine symptoms appeared

in more than one prover. Drug seems to have a particular affinity towards right side of the body which is evident from symptoms appeared on right side of head, cheek, mouth, chest and on right axilla, neck, shoulder, arm and foot. Nine symtoms have been reproved which are mentioned in other sources[5,6]. Drug also has shown affinity for skin folds. The drug may be indicated in tinea cruris with itching which is better after cold application. Pains observed are of cramping, griping, cutting, tearing and of electric like. Pains and itching are better by cold. These symptoms may help in clinical application of the medicine.

## Conclusion

Symptoms appeared (new and reproved) during the trial will add to the available literature on this medicine and benefit the research scholars and clinicians. This also needs verification through clinical application in different settings.

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## References

1. Reviews on Indian Medicinal Plants, Vol. 3, Indian Council of Medical Research, New Delhi, 2004, pp 30-60
2. http://en.wikipedia.org/wiki/Argemone _mexicana
3. The Homoeopathic Pharmacopoeia of the United States, Vol. I, American Institute of Homoeopathy, Boston, 1979, pp 95-96.
4. Allen T.F., The Encyclopedia of Pure Materia Medica, Vol. 10, M/s. B. Jain Publishers (P) Ltd., New Delhi, 1986, p-324.
5. Boericke William, Homoeopathic Materia Medica, M/s. B. Jain Publishers (P) Ltd., New Delhi, 2007, p-65.
6. Vermeulen Frans, Concordant Materia Medica, M/s. Indian books & Periodicals Publishers, New Delhi, 2001, p 100.