Research Paper

A Clinical Study to Evaluate the Efficacy of *Cicuta virosa* in the Treatment of Pica in Adolescence

Banala Spoorthi[1], Dr Silvia Sunderraj[2]

Department of Homoeopathic Materia Medica,
MNR Homoeopathic Medical College and Hospital, Sangareddy, Telangana

Corresponding Author: Dr Silvia Sunderraj

ABSTRACT

"Pica" means perverted appetite for substances which is not fit as food with no nutritional value such as bricks, clay, soil, ice and laundry starch. Pica occasionally extends into adolescence. [1] Cicuta Virosa is one of the Homoeopathic medicines which is well known but less commonly known in prescribing for Pica as per the scientific studies. This research was designed to evaluate the effectiveness Cicuta Virosa in the treatment of Pica in adolescence. 13-24 years old adults were selected from rural areas of both sexes without any chronic disease, which were subcategorized in 3 groups based of age (Group I 13-16; Group II 17-20; Group III-21-24years). Internally approved Questionnaire was used for the assessment of Pica among those individuals before and after treatment. Data was collected and descriptive statistical analysis was done by applying Paired T-test using SPSS version 24 (Statistical Package for Social Science Inc. Chicago III, USA) Software. Cicuta Virosa of potency 200C and 30C in different age groups that 30 cases, in which Group-1=16 Patients (people developed this habit recently and from their teenage), 11(69%) and 5(31%) improved gradually and quickly. Group-2=14 Patients (people developed habit from their schooling & childhood), 9(64%) and 5(36%) improved gradually and quickly. Patients of Group-1 and Group-2 improved gradually and quickly respectively. The conclusion has drawn from this study that Cicuta virosa 200C acts effectively in treating Pica. Among different age groups, Group I developed more tendencies. Males show marked improvement than females. In the overall assessment of individuals everyone improved i.e. 100%.

Keywords: Pica, Cicuta Virosa, Homoeopathy.

INTRODUCTION

Pica is a compulsive eating disorder. It is characterized by an appetite for continuous or repeated ingestion of non-food materials or sometimes of tremendous amount of specified food. [2]

The substances may be biological, chemical or man-made. Substances identified from non- nutritive are Pagophagia (ice eating); Geomelophagia (raw potato eating); plumbophagia (lead eating); eophagia (clay eating); amylophagia (laundry starch eating); Cautophreiophagia (eating of burnt matches); tricophagia (hair eating); lithophagia (stone or plaster eating); coprophagia (eating of faeces) and non-food substances. [3]

Pica can affect people of any age groups and both gender by careful observation such craving can be identified. Each craving differs from person to person and sometimes it can cause serious complications by considering the history, peculiar symptoms

and cause. Homoeopathy treats the person as a whole obtaining the cause of disease, individuality similimum will be prescribed. (4)

CICUTA VIROSA has desire for unnatural things, abnormal appetite and craving for indigestible things such as chalk and coal. (5) Craves coal, chalk and many other strange articles from inability to distinguish between edible and things unfit to be eaten, etc. (6)

Prevalence of Pica is thought to be decrease with age; one study showed that about 10% of children older than 12 years engage in pica [10] Pica occasionally extends into adolescence. (1) Within this population the risk for the prevalence of pica increases as the severity of the condition increases. (7)

Aetiology:
While the causes of Pica remain unknown, some of the risk factors for developing the disorder include the following:
- Stress
- Cultural factors
- Learned behavior
- Low socioeconomic status
- •Underlying mental health disorder
- Nutritional deficiency
- Child neglect
- Pregnancy
- Epilepsy
- Familial psychopathology.[8]

Complications:
1. Abdominal Problems
2. Lead and mercury Poisoning
3. Phosphorous intoxication
4. Dental injury [10]

Prevalence of Pica is thought to be decrease with age; one study showed that about 10% of children older than 12 years engage in pica.[9] Children these days with lack of interaction and guidance from parents have been affecting their health in various ways, one of the major common issues is "PICA" even at certain young age of many people. Homoeopathy has good results in treating Pica as Pica can affect people of any age groups and both gender by careful observation such craving can be identified. Each craving differs from person to person and sometimes it can cause serious complications by considering the history, peculiar symptoms and nature of cause homoeopathy helps for treatment of pica.

Dr. Frans Vermeulen in Concordent Materia Medica mentioned the Cicuta Virosa shows its effectiveness for Violent, strange desires. Desire for unnatural things, such as coal [Alum; Calc.]; chalk etc., from inability to distinguish between edible and things unfit to be eaten. [11]

The poisoning by water hemlock may be treated medically by using activated charcoal to reduce gastrointestinal absorption of toxic principle together with supportive care, which includes administrating anticonvulsant medications, such as a benzodiazepine. [12]

The present study is aimed at investigating how efficient the CICUTA VIROSA is working in curing PICA. The following cases of PICA were taken with the intension of conducting an evidence-based study having ease of measurement and cases available.

Aim and Objective:
- To find out the efficacy of Homoeopathy in Pica.
- To assess the effectiveness of Cicuta Virosa in the management of Pica in adolescence

MATERIALS & METHODS
- Study setting: It is an experimental type of study conducted in MNR Homoeopathic Medical College and Hospital with peripheral OPD'S during February 2022 to July 2022.
- Type of study: Experimental study
- Study Design: Clinical study
- Sample size: 30
- Sample technique: Purposive sampling.
- Duration of study: 4-6 Months

Inclusion Criteria:
The patients are taken of age 13-24 years from rural areas of both sexes irrespective of socioeconomic status.

Exclusion Criteria-

- Patients who are undergoing treatment for any chronic diseases, along with Homoeopathic treatment were not considered.
- Underlining mental disabilities like autism, mental impairment, schizophrenia was excluded.
- The pregnant women have been excluded.

Data Collection: medicine and remedy selection based on authorized homoeopathic Materia Medica. Interview technique including case taking was based on the direction given in Organon of medicine and remedy selection based on authorized homoeopathic Materia Medica.

Method of Data Collection:
Ethical Clearance was taken by Ethical Committee before starting the research.
Participation in this study was voluntary; the detail of the study was explained to each patient and a written consent was taken before enrolling them for the study. A standard case proforma was maintained for obtaining the patient's details and the same was used to record them. Confidentiality was maintained in regard to recorded details of the patients.

Intervention:

- Case taking and medicine selection and administration are according to homoeopathic principle.

Pre-post treatment analysis using improvement with internally approved Questionnaire.

PROCEDURE

1. Detailed case taking and recording of problems in case record format.
2. Clinical examination.
3. Prescription is done with reference to standard text book of Materia Medica as well as repertory.
4. Potency selection and repetition were done according to principles laid down in the Organon of medicine.
5. Observations were noted by internally approved questionnaire & Student 'T' test was used for statistical assessment.
6. The age was subcategorized into three groups as group-1, 2 and 3.

Selection of Tools:

1. Pre structural MNRHMC case format.
2. Assessment criteria were done with internally approved Questionnaire for evaluating the

STATISTICAL ANALYSIS:
Data was collected and descriptive statistical analysis was done by applying Paired T-test using SPSS version 24 (Statistical Package for Social Science Inc. Chicago III, USA) Software.

RESULT
As Internally Approved questionnaire consists of 10 Questions which was graded from 1-5 for each question. As in each question the grading is like a-1, b-2, c-3, d-4, e-5. 1-5 grading indicates that 1-least, 2-mild, 3-moderate, 4-high, and 5-extreme. Scores are done through this grading.
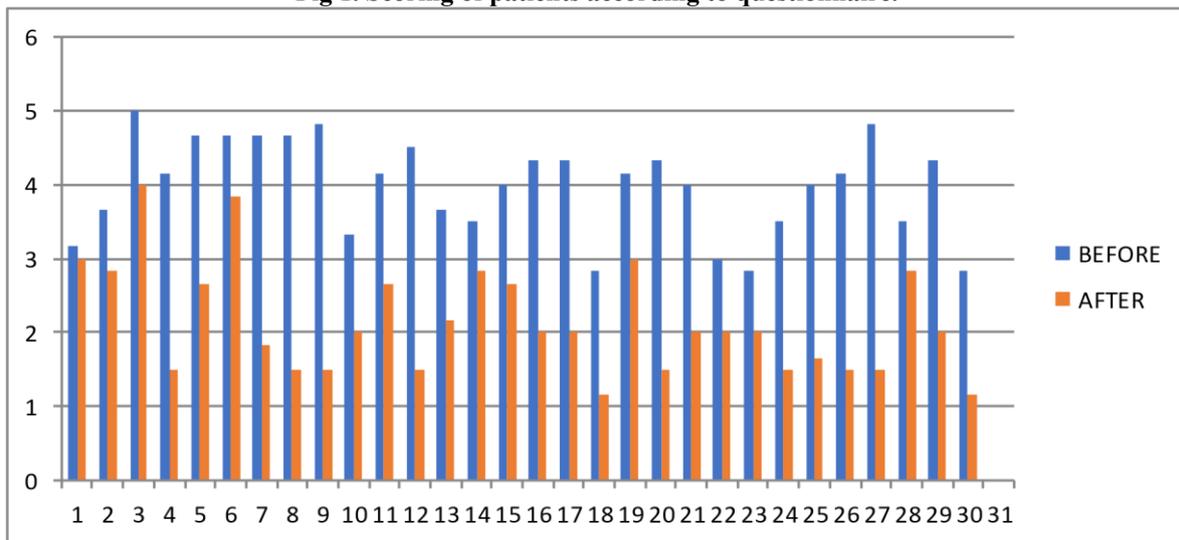
Scores of Patients According to Questionnaire

Table no.1. Scoring of patients according to questionnaire.

SERIAL NO	BEFORE	AFTER
01	3.16	3.0
02	3.66	2.83
03	5.00	4.00
04	4.16	1.50
05	4.66	2.66
06	4.66	3.83
07	4.66	1.83
08	4.66	1.50

09	4.83	1.50
10	3.33	2.00
11	4.16	2.66
12	4.50	1.50
13	3.66	2.16
14	3.50	2.83
15	4.00	2.66
16	4.33	2.00
17	4.33	2.00
18	2.83	1.16
19	4.16	3.00

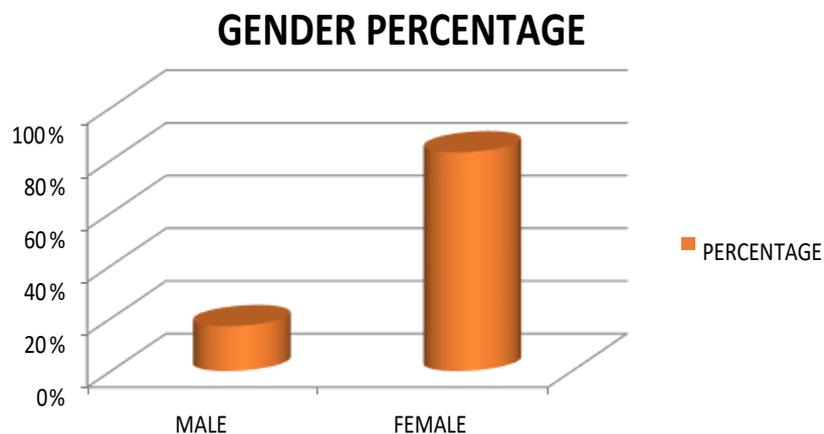**Fig 1. Scoring of patients according to questionnaire.**

Among 30 cases, all of them have shown improvement.

Distribution of cases according to Gender.

Table no.2 Distribution of cases according to Gender.

GENDER	NO. OF CASES	PERCENTAGE
MALE	5	17%
FEMALE	25	83%

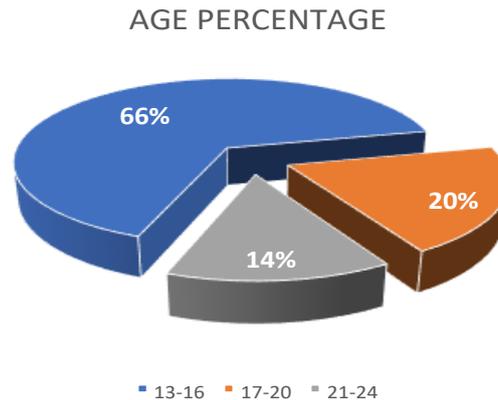**Fig 2. Distribution of cases according to Gender.**

Among 30cases, 5 cases are males (17%) and 25 cases are females (83%). Females have more tendency than male.

Distribution of cases according to Age group.

Table no.3 Distribution of cases according to Age group.

AGE	NO. OF CASES	PERCENTAGE
13-16 (Group -1)	20	66%
17-20 (Group -2)	06	20%
21-24 (Group -3)	04	14%

Fig 3. Distribution of cases according to Age group.

AGE PERCENTAGE
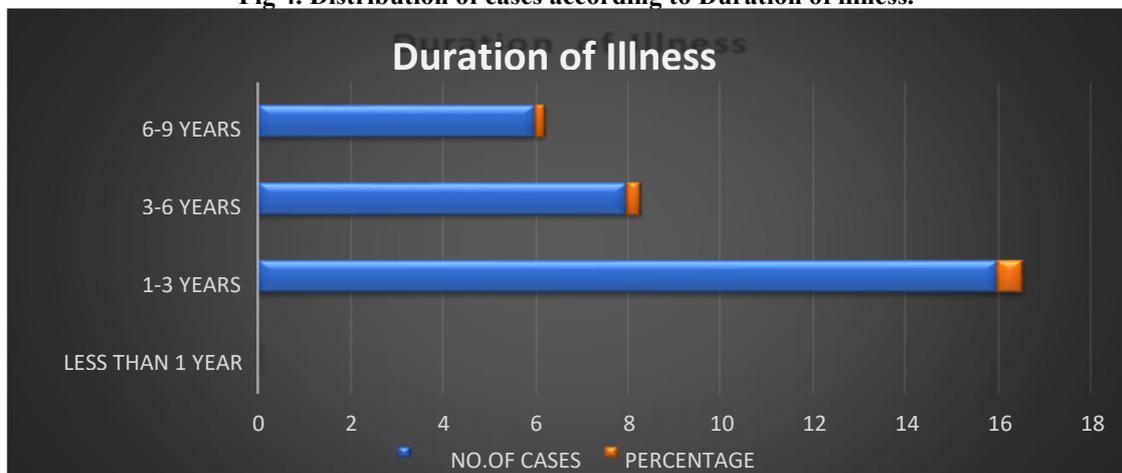
- 13-16 - 17-20 - 21-24

Among 30 cases, different age groups from 13-24years that have been divided into three groups. Group-1(13-16 Years), Group-2(17-20 years) and Group-3(21-24years). Group-1 consisting of 20 cases (66%), Group-2 of 6 cases (20%) and Group-3 of 4 cases (14%).

Distribution of cases according to Duration of illness.

Table 4. Distribution of cases according to Duration of illness.

DURATION OF ILLNESS	NO. OF CASES	PERCENTAGE
LESS THAN 1 YEAR	0	0%
1-3 YEARS	16	53%
3-6 YEARS	8	27%
6-9 YEARS	6	20%

Fig 4. Distribution of cases according to Duration of illness.

Duration of Illness

NO.OF CASES   PERCENTAGE

Among 30cases, 6 patients were suffering from 6-9 Years; 8 patients were suffering from 3-6 Years; and 18 patients were suffering from 1-3 Years.

Distribution of cases according to Results.

Table 5. Distribution of cases according to Results.

RESULTS	NO. OF CASES	PERCENTAGE
IMPROVED	30	100%
NOT IMPROVED	0	0%

among 30 cases all of them have improved.

Table 6. STATISTICAL ANALYSIS CHART

SERIAL NO	X	Y	X-Y	$(X-Y)^2$
01	3.16	3.25	0.16	2.56
02	3.66	2.83	0.83	0.68
03	5.00	4.00	1.00	1.00
04	4.16	1.50	2.66	7.07
05	4.66	2.66	2.00	4.00
06	4.66	3.83	0.83	0.68
07	4.66	1.83	2.83	8.00
08	4.66	1.50	3.16	9.98
09	4.83	1.50	3.33	11.08
10	3.33	2.00	1.33	1.76
11	4.16	2.66	1.50	2.25
12	4.50	1.50	3.00	9.00
13	3.66	2.16	1.50	2.25
14	3.50	2.83	0.67	0.44
15	4.00	2.66	1.34	1.79
16	4.33	2.00	2.33	5.42
17	4.33	2.00	2.33	5.42
18	2.83	1.16	1.67	2.78
19	4.16	3.00	1.16	1.34
20	4.33	1.50	2.83	8.00
21	4.00	2.00	2.00	4.00
22	3.00	2.00	1.00	1.00
23	2.83	2.00	0.83	0.68
24	3.50	1.50	2.00	4.00
25	4.00	1.66	2.34	5.47
26	4.16	1.50	2.66	7.07
27	4.83	1.50	3.33	11.08
28	3.50	2.83	0.67	0.44
29	4.33	2.00	2.33	5.42
30	2.83	1.16	1.67	0.44

X: Score of individuals before medication
Y: Score of individuals after medication
X-Y: Difference of scores before and medication
$(X-Y)^2$: Square of difference of scores before and medication

After collection and presentation of patient's data, analysis of data is the next important step. To draw valid conclusion, analysis of collected data is done with the use of statistical method stop up into a scientific parameter. Paired test was used. Scoring was according to internally approved questionnaire.

The calculated value was 11.0881 which is greater than the table t value at 0.1%

(p<0.0001). Hence, null hypothesisis rejected and the alternate hypothesis is accepted.

Inference:
This study provides evidence to say that there is significant reduction in the scores after the Cicuta Virosa in evaluation of improvement. Therefore, Cicuta virosa in moderate potencies are effective in the treatment of Pica.

DISCUSSION
This study was designed to assess the effectiveness of Cicuta virosa in the treatment of pica in adolescence of age13-24 years from rural areas and potency ranging from 30Cto1M based on nature, temperament and susceptibility of patient i.e. Cicuta virosa 200C had shown more effect in the improvement of Pica. The significant value of total 30 patients was found that the two-tailed P value is less than 0.05 which states that the study is statistically significant. The clinical verification of the effectiveness of Cicuta virosa in treatment of Pica was done through this study.

The homeopathic remedy Cicuta is prepared from the freshly expressed juice of the plant called water hemlock. Cicuta belongs to a small genus comprising four species of extremely toxic plants in the Apiaceae family.

The extremely poisonous substance cicutoxin is present in the Cicuta plant. In the event of an adult consuming the root of Cicuta plant he/ she will experience nausea and an excruciating pain in abdominal region in just one hour's time.

Individuals who require this homoeopathic medicine are likely to have a craving to consume inedible substances like chalk. [12] This behavior is often life-threatening resulting in surgery a number of interventions have been devised, such as behavioral methods (e.g., aversive stimuli, overcorrection, time-out, reinforcement) and biological interventions (e.g., pharmacotherapy, nutritional supplements). It was observed that surgery, biological intervention can lead to many side effects.

Various studies have been done to know the effect of Homoeopathic drugs like calcareacarbonica, Aluminum, Cina, Lac felinum, Silicea terra, Tarentulahipsicana in the treatment for desire for unnatural things but nowhere the Cicuta Virosa was used in the recent studies to know its ability in treatment of Pica. Hence, it needs further research, by carrying out studies on Cicuta virosa.

CONCLUSION
The study concludes that Pica has been successfully improved in symptoms by the action of Cicuta virosa which has been observed during the research.

Also, it can be concluded from the study that Cicuta virosa of various potencies i.e 30C, 200C, 1M; the potency 200C has acted effectively in curing the symptoms of Pica.

Among different age groups from 13-24years it's been found that Group-1(13-16years) have developed more symptoms than Group-2(17-20years) and Group-3(21-24years).

Through this research it has been found that females are habituated more than males. As the females of 83% and males of 17% developed the cravings. Males showed marked improvement than female.

According to duration of illness patients, among 30 patients between duration of illness from 1-3 Years the suffering was found, in more no of patients than 3-6 Years, than 3-6 Years, 6-9 Years.

Before medication, the symptoms are extreme, high, moderate developed as after medication, great difference was noted, improved by decreasing symptoms to high, moderate, and mild respectively.

Hence all 30 cases have shown improvement with Cicuta virosa. In general, there was difference noted in total score as overall improvement from the questionnaire obtained after the medication.

Cicuta Virosa acts effectively in treating the Pica in adolescence. The effectiveness was found in every individual showing the action of Cicuta virosa irrespective of duration of illness. The clinical verification of the use of Cicuta virosa in Pica treatment was done

through this study. Males showed marked improvement than females. The patients who continued the treatment for longer period i.e. 3-6 months showed positive results than others.

In general, there is overall improvement in total score obtained through internally approved questionnaire after treatment with Cicuta Virosa. The study was subjected to statistical analysis and the results are made out of observation.

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