Effectiveness of homoeopathic treatment in case of tinea corporis and tinea cruris: A constitutional approach

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Abstract
Tinea, also known as dermatophytosis or ringworm is fungal infection of the skin. Ringworm infection can affect all age group and both sex which initially presents with red patches on affected were as of the skin and later spreads to other parts of the body. In tropical countries like India dermatophyte infections like Tinea corporis, Tinea cruris is common irrespective of rural or urban population. Moreover they represent a major public health problem in school age children. The present study was undertaken to understand the effectiveness of constitutional treatment in case of Tinea corporis and cruris. Tinea infection is one of the common conditions seen in hostel students of Alva’s education foundation. Hence the study was conducted to assess the tinea infection and the therapeutic effect of our homoeopathic medicine. The study showed that homoeopathic constitutional medicines were effective in treating tinea cruris and tinea corporis.

Keywords: Constitutional, Homoeopathic approach, Tinea cruris, Tinea corporis

1. Introduction
Dermatophytosis (Tinea infections) is a superficial fungal infection caused by dermatophyte [1]. Tinea corporis is the fungal infection of trunk and extremities caused by *Trichophyton rubrum* whereas Tinea cruris is the fungal infection of groins and medial aspect of thigh and buttocks usually caused by *Trichophyton verrucosum* and *Microsporum canis* [2, 3, 4]. Tinea is characterized by scaly eruption with well-defined edge and central clearing [5]. The prevalence of Tinea is increasing in the world [6, 7] in spite of using antifungal agents [8]. Homoeopathy strongly believes in understanding the holistic causative factor like mind, constitution, miasm and genetic influence to determine the line of treatment [9, 10, 11, 12]. The sum total of all the individual characteristics in all 3 planes-emotional, intellectual and physical depicts the constitution [13]. Many homoeopathic medicines such as Kali Sulph, Bacillium, Tellurium [14, 18] and also constitutional medicines [19] were found to be beneficial in the treatment of Tinea corporis and Tinea cruris.

2. Materials and Methods
The study was carried out in Hostels of AEF. A sample of 30 cases diagnosed with Tinea corporis and cruris visiting the OPD, IPD and Rural centers of Alva’s Homoeopathic Medical College, with non-random sampling including the age group between 15-30 years of both sexes in which the cases were selected based on clinical presentation, local examination and laboratory investigation (KOH TEST) reports for Tinea corporis and cruris. Patients under medication (homoeopathy or other system) for chronic diseases, Patients suffering from other severe systemic diseases were excluded. Experimental case study method was done, for the patients who were willing to participate. The patients were counselled, screened and were brought to the Alva’s Homoeopathic Medical College Hospital and rural centers of Alvas Homoeopathic Medical College for carrying out the study. The prescription was based on the totality of the symptom available at the time. Suitable Constitutional medicines were selected according to the similihum for Tinea corporis and cruris. Data collected according to pre-structured AHMC case format. Pre and post treatment analysis done using assessment criteria score. Case taking along with physical examination and required investigation were done. Cases were followed up once in 2 weeks or whenever required and assessment was done. Results were subjected to statistical analysis and hypothesis was tested using paired’t’ test.
Detailed case taking was done for repertorization to arrive at a constitutional remedy based on homoeopathic principle.

3. Results and Discussions

Samples of 30 cases from the hostels of Alvas Education Foundation were taken for this study. All the 30 cases were followed up for at least once in two weeks and were subjected to statistical studies. The following tables and charts reveal the observation and results of the study.

3.1 Distribution of Cases According to Age

| Age group | No. of cases | Percentage |
|-----------|--------------|------------|
| 15-20     | 20           | 66.66%     |
| 20-25     | 9            | 30%        |
| 25-30     | 1            | 3.33%      |

The age of sample varies from 15-30 yrs. Out of 30 cases, the patient belonging to age group 15-20yrs were 20(66.66%), 21-25yrs were 9(30%) and 26-30yrs were 1(3.33%) respectively.

3.2 Distribution of Case According To Sex

| Sex      | Percentage |
|----------|------------|
| Male     | 50%        |
| Female   | 50%        |

Out of 30 cases, the no. of male cases was found to be 15(50%) & no. of female cases were found to be 15(50%).

3.3 Distribution of Cases According To Hostels

| Hostel                | No. of cases | Percentage |
|-----------------------|--------------|------------|
| Kaveri ladies hostel  | 5            | 16.66%     |
| Shambhavi             | 7            | 23.33%     |
| Naturopathy ladies hostel | 1        | 3.33%      |
| Homeo. ladies hostel  | 1            | 3.33%      |
Out of 30 cases, patient belonging to Kaveri ladies hostel were 5 (16.66%), Shambhavi hostel were 7 (23.35), Naturopathy ladies hostel were 1 (3.33%), Homeo ladies hostel 1 (3.33%), Jainpete hostel 1 (3.3), Mijar AIET NEW were 6 (20%), Mavinkatte boys hostel were 6 (20%), Ganga were 2 (6.66%), Kodachadri were 1 (3.33).

3.14 Distribution of Cases According To Remedies

**Table 4:** Distribution of cases according to remedies

| Medicine Used | No. of Cases | Percentage |
|---------------|--------------|------------|
| ARS ALB       | 7            | 23.33%     |
| Sulphur       | 8            | 26.66%     |
| Sepia         | 3            | 10%        |
| Psorinum      | 2            | 6.66%      |
| Nat mur       | 5            | 16.66%     |
| Lycopodium    | 4            | 13.33%     |
| Phosphorus    | 1            | 3.33%      |

Out of 30 cases, max. no. of cases say 8(26.66%) patients each received Sulphur, Ars alb 7(23.33). This was followed by Nat Mur 5 916.66%), Lycs 4 (13.33%), Sepia 3(10%), Phosphorus 1(3.33%).

Comparison of the obtained data before and after treatment

| Case          | Date (22-12-18) | Date (12-1-19) | Prognosis                  |
|---------------|-----------------|----------------|----------------------------|
| 1. Sulphur    |                 |                |                            |
|               |                  |                | Raised eruption over nape of neck and chest. | 12-3-19 | Improved |
|               |                  |                | Circumscribed redness, Violent itching <night, heat of bed, Hot patient | KOH TEST: +VE | KOH TEST: -VE |
|               |                  |                | Eruption reduced, No itching |                            |
| 2. ARS ALB    |                 |                |                            |
|               | 4-3-19           | 29-3-19        | Improved                  |
|               |                  |                | Raised circular eruption in axilla & trunk, Severe itching & burning, Erythematous, dry scales, Itching <night, >hot application, Hot patient | KOH TEST:+VE | KOH TEST:-VE |
|               |                  |                | Eruption reduced, No itching, Scales reduced |                            |
| No. | Name       | Date     | Symptoms                                                                 | Improvement                  |
|-----|------------|----------|---------------------------------------------------------------------------|------------------------------|
| 3   | Natrum MUR | 28-2-19  | Skin eruption circular and red in axilla and forearm Itching<morning       | Improved                     |
|     |            |          | 1st perspiration. Hot patient                                              |                              |
|     |            | 25-3-19  | Itching reduced. Eruption reduced in axilla and forearm                    |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 4.  | LYCO       | 22-11-18 | Circular patch eruption in thighs and buttocks Itching<perspiration,      | Improved                     |
|     |            |          | cold>hot water bath 1st perspiration.                                     |                              |
|     |            | 13-12-18 | Itching reduced. Eruption reduced in thighs and buttocks                   |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 5.  | Phosphorous | 31-10-18 | Reddish circular eruption in abdomen & trunk Itching< scratching,         | Improved                     |
|     |            |          | perspiration Chilly pt                                                    |                              |
|     |            | 18-11-18 | Itching reduced. Eruption reduced, In abdomen & trunk                      |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 6.  | Lyco       | 29-12-18 | Scaly skin eruption over upper back and abdomen, Itching <evening,        | Improved                     |
|     |            |          | night>scratchi, perspiration                                          |                              |
|     |            | 17-1-19  | Itching reduced. Eruption reduced over abdomen and upper back             |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 7.  | Natrum MUR | 6-3-19   | Circular red eruption in the buttocks & thighs. Itching< scratching,      | Improved                     |
|     |            |          | hot application>cold. Hot patient                                          |                              |
|     |            | 29-4-19  | Itching reduced. Eruption reduced In buttocks & thighs.                    |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 8.  | Sulphur    | 23-12-18 | Itching eruption over abdomen, chest< during menses> scratchi, percussion. | Improved                     |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 9.  | ARS ALB    | 20-11-18 | Skin eruption- black, over forearm itching &burning, < Mid night.         | Improved                     |
|     |            |          | 1st perspiration Hot pt.                                                 |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 10. | LYCO       | 15-12-18 | Raised skin eruption in thighs, buttocks Scaling<night, perspiration,    | Improved                     |
|     |            |          | > scratchi, warm water. Hot pt                                             |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 11. | NATRUM MUR | 19-11-18 | Raised red eruption on the abdomen Itching & burning>sun, head            | Improved                     |
|     |            |          | >cold. Hot pt                                                             |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 12. | Sepia      | 8-2-19   | Circular erythematous eruption in spots over forearm, Papules present.    | Improved                     |
|     |            |          | Itching not relieved by scratching. Profuse sweating, Hot pt                |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 13. | Psorinum   | 2-11-18  | Erythematous red eruption over abdomen &thighs. Intense itching           | Improved                     |
|     |            |          | <warmth of bed, warm application. >open air. Chilly pt                      |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 14. | ARS ALB    | 13-12-18 | Raised circular eruption in axilla & trunk. Severe itching & burning      | Improved                     |
| 15. | Sulphur    | 9-1-19   | Erythematous, dry scales. Itching <night>hot application. Hot patient      |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 16. | ARS ALB    | 28-2-19  | Skin eruption- black, in axilla itching &burning. < mid night. 1st         | Improved                     |
|     |            |          | perspiration. Hot pt.                                                     |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 17. | SEPIA      | 4-1-19   | Erythematous red, circumscribed eruption over medial aspect of             | Improved                     |
|     |            |          | thighs, buttocks& lower back in spots. Itching< morning, perspiration >hot|                              |
|     |            |          | application, warmth Soreness of affected were                             |                              |
|     |            |          | Profuse perspiration Chilly pt                                            |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 18. | LYCO       | 7-3-19   | Circular eruption in thighs and buttocks Itching<perspiration, cold       | Improved                     |
|     |            |          | >hot application Profuse sweating especially in axilla                     |                              |
|     | KOH TEST: +VE |          | KOH TEST: +VE                                                              |                              |
| 19. | SEPIA      | 3-12-18  |                                                                         |                              |
3.2 Statistical Analysis

3.21 Statistical Analysis for Tinea Corporis and Cruris.

Table 5: Hypothesis testing Tinea Corporis and Cruris

| S. No | X   | Y   | d=X-Y | d(1-d)² | d(1-d)³ |
|-------|-----|-----|-------|---------|---------|
| 1     | 9   | 0   | 9     | 0.16    | 0.0256  |
| 2     | 9   | 0   | 9     | 1.16    | 1.3456  |
| 3     | 9   | 0   | 9     | -1.84   | 3.3856  |
| 4     | 6   | 0   | 6     | 2.16    | 4.6656  |
| 5     | 9   | 0   | 9     | 1.16    | 1.3456  |
| 6     | 6   | 0   | 6     | -0.84   | 0.7056  |
| 7     | 9   | 1   | 8     | -0.84   | 0.7056  |
| 8     | 9   | 0   | 9     | 1.16    | 1.3456  |
| 9     | 9   | 1   | 8     | 0.16    | 0.0256  |
| 10    | 6   | 0   | 6     | 1.16    | 1.3456  |
| 11    | 9   | 0   | 9     | -1.84   | 3.3856  |
| 12    | 9   | 1   | 8     | 0.16    | 0.0256  |
| 13    | 9   | 0   | 9     | 0.16    | 0.0256  |
The mean of the differences, \( \overline{d} \), is calculated as follows:

\[
\overline{d} = \frac{\sum (d_i)}{n}
\]

The estimate of population standard deviation is given by,

\[
SD = \sqrt{\frac{\sum (d_i - \overline{d})^2}{n}}
\]

Standard error (S.E) = \( \frac{SD}{\sqrt{n}} \) = 0.1699

The test statistics is Paired t:

\[
t = \frac{\overline{d}}{S.E} = \frac{18.06}{0.16} = 112.87
\]

Comparison with tabled value

This critical ratio, \( t \), follows a distribution with \( n-1 \) degrees of freedom. The 5% level is 2.045 and 1% level is 2.756 for 29 degrees of freedom. Since the calculated value 112.87 is greater than tabled value at 5% and 1% level, the test is statistically significant and hence the null hypothesis is rejected.

Inference:

This study shows significant improvement in scores of disease intensity taken before and after homeopathic treatment.

| X | Y | d | t | P(T<=t) one-tail | t Critical one-tail |
|---|---|---|---|------------------|---------------------|
| 14 | 9 | 0 | 9 | 1.16 | 1.3456 |
| 15 | 9 | 0 | 9 | 0.16 | 0.0256 |
| 16 | 6 | 0 | 6 | 2.16 | 4.6656 |
| 17 | 9 | 0 | 9 | 1.16 | 1.3456 |
| 18 | 9 | 0 | 9 | 1.16 | 1.3456 |
| 19 | 9 | 1 | 8 | -0.84 | 0.7056 |
| 20 | 9 | 0 | 9 | -2.84 | 8.0656 |
| 21 | 9 | 1 | 8 | -1.84 | 3.3856 |
| 22 | 9 | 1 | 8 | -0.84 | 0.7056 |
| 23 | 9 | 0 | 9 | -0.84 | 0.7056 |
| 24 | 6 | 0 | 6 | 0.16 | 0.0256 |
| 25 | 9 | 1 | 8 | 2.16 | 4.6656 |
| 26 | 9 | 0 | 9 | -1.84 | 3.3856 |
| 27 | 9 | 0 | 9 | -0.84 | 0.7056 |
| 28 | 9 | 0 | 9 | -0.84 | 0.7056 |
| 29 | 9 | 1 | 8 | -1.84 | 3.3856 |
| 30 | 9 | 0 | 9 | 0.16 | 0.0256 |

X= Score before treatment
Y= Score after treatment
\( d \)= Difference between before and after score

The study was conducted on the patients from hostels of Alvas Education Foundation with tinea corporis and tinea cruris who attended the Out Patient Department, In Patient Department and rural health centres of Alva Homoeopathic Medical College, for assessing the effectiveness of constitutional homoeopathic treatment in case of tinea corporis and cruris.

A total of 30 cases were selected as per the inclusion criteria and details of cases were recorded in standardised case records. Patients belonging to the age group of 15-30 were mostly selected. The case were diagnosed based on history, symptomatology and investigation and pre invention data were connected using rule of ideal homoeopathic cure followed by case analysis and prescription with due reference to repertory, materia medica and organon of medicine.

For clinical assessment before and after treatment, symptom assessment scores was considered before and after treatment by following ideal homoeopathic cure like time taken for recovery, complication, general health, recurrence, condition of mind. Cases were followed and assessed once in 2 weeks or whenever necessary. Results were subjected to hypothesis which was tested using paired ‘t’ test.

Based on the analysis from 30 cases of tinea corporis and cruris following observations were made with the comparison of available literature.

Age: In this study I have taken 30 cases randomly from the age group 15-30 mostly. From this, I got 20 cases from the age group 15-20(66.66%), 9 cases from the age group 21-25(30%), 1 case from age group 26- 30(3.33%). Thus according to this data and according to my study, I want to conclude that the age group between 15-20 is more at high risk of having tinea corporis and cruris in hostels compared to other age group.

Sex: The disease affects both the sexes equally.

Hostels: From the study conducted in the hostels of Alvas Education Foundation, it was found that, most of the female pt were from Shambhavi Hostel (7) followed by Kaveri Ladies Hostel (5) and most of the male pt were from AIET MIIAR and Mavinkatte Boys hostel (6 and 6 respectively).

Remedy: In this study majority of the cases were treated with Sulphur (8cases), then Ars alb (7cases), and other cases were also treated with Lycopodium, Natrum mur, Psorinum, Phosphorus, Sepia.

Improvement Status:
All of the cases were improved with the prescribed well selected homoeopathic constitutional medicine according to similia similibus currenter and which is of minimum dose and in the most harmless way, with no side effects.

4. Conclusion
A sample of 30 cases were taken up randomly for the study from the hostels of Alva’s Education Foundation who visited the IPD and OPD of Alva’s homoeopathic medical college Alva’s homoeopathic medical college and hospital were selected as per the inclusion criteria. Conclusions were made after a statistical analysis of cases with Tinea corporis and cruris.

The following conclusions were drawn from the study as follows:
• The prevalence of Tinea corporis and cruris is equal in both male and female.
• Majority of patients belong to age groups 15-20(66.66%), 21-25(30%), 26-30(3.33%)
• Prevalence of Tinea cruris and corporis was more in Shambhavi Girls Hostel, Kaveri Girls Hostel, AIET MIJAR and Mavinakatte Boys Hostel compared to other hostels.
• The main predisposing factor was overcrowding, lack of hygiene and excess perspiration.
• The medicines which were found to be more effective include Sulphur, Ars alb, Lycopodium, Natrum mur, Psorinum, Phosphorus, Sepia.
• This study proved that constitutional homoeopathic medicines were effective in treating Tinea corporis and Tinea cruris.

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