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Efficacy of homoeopathic medicine in primary gout using synthesis repertory: A randomised controlled study

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Abstract
Uric acid is a poorly soluble end product of purine metabolism in humans. Hyperuricaemia plays important role in the development of gout. Management of gout is reduction in serum uric acid levels 6 mg/dl. This study is single blind randomized controlled study. The aim of study was to evaluate the efficacy of individualized homoeopathic medicine on the basis of reportorial analysis in the management of hyperuricaemia in primary gout.
In medicinal group who received individualized homoeopathic remedy after repertorial analysis, serum uric acid (SUA) was reduced to 4.5 ± 1.56 from 8.6 ± 0.67 with mean reduction of 4.1 ± 0.89. Similarly VAS score was also reduced to 1.5 ± 1.57 from 7.2 ± .79, with mean reduction of 5.7 ± 0.77 in control group who received *Colchicum autumnale* M.T. as Standard Medicine serum uric acid (SUA) was reduced to 7.9 ± 0.78 from 8.5 ± 0.62 with means reduction of 0.6 ± 0.16. VAS score also reduced to 5.1 ±1.42 from 6.70 ± 0.87 with mean reduction of 1.6 ± 0.55. The result shows that mean score reduction in medicinal group were higher than the mean score reduction in control group, and the difference was also statistically significant $p < .0001$.

Keywords: Hyperuricaemia, uric acid, primary gout, homoeopathy, VAS score, SUA level, *Colchicum autumnale* (M.T)

1. Introduction
Elevation of serum uric acid (SUA) levels, or hyperuricaemia, is an essential prerequisite for the development of Gout. It is labelled as primary gout, where there is often a strong hereditary factor in some cases. Hyperuricaemia is defined as a serum or plasma urate concentration greater than 7.0 mg/dl in males and 6.0 mg/dl in females that is the limit of urate solubility at physiological temperature and pH.
Dr. Samuel Hahnemann, the founder of homoeopathy said "Homoeopathy demands nothing but to be put to the acid test of experience [3]. Homoeopathy recognizes man as a multi-dimensional composite entity, where the mind, body, and spirit are viewed upon through indivisibility. Hence, when sick individual comes, the focus is aimed not only to elicit the "clinical diagnosis" but also the "person diagnosis". In Homoeopathy Miasms are the fundamental cause of all disease. In Gout sycotic miasm predominates, but psora acts as basic miasm. Patients of hyperuricaemia develop gout and rheumatic pains due to high level of uric acid in their blood for long time period.
Synthesis Repertory is great contribution to the Homoeopathic profession because it is most updated due to its software version RADAR. Almost all type of cases can be repertorised by using this repertory [6].

2. AIM: This study was carried out with an aim to assess the efficacy of homoeopathic medicine prescribed on the basis of repertorial analysis in the management of hyper-uricaemia in primary gout.

3. Objectives: The objectives of study was to evaluate the efficacy of constitutionally prescribed homoeopathic medicine on the basis of Synthesis repertory in the management of hyper-uricaemia in primary gout and toevaluate the outcome in Medicinal group and Control group by analyzing the improvement in the serum uric acid (SUA) level and (VAS) score of pain.

4. Material and Methods

Study was carried out at Solan Homoeopathic Medical College and Hospital, Kumarhatti, Solan. (H.P). Duration of the study was of 18 month (Enrolment period 6 month, follow up period 10 month and data assessment period 2 month). It was parallel, evaluative, randomized, single blind controlled study. A total of 150 patients were screened and among them 110 patients were enrolled on the basis of inclusion and exclusion criteria as mentioned.

4.1 inclusion criteria: Patient of both sexes between age group of 20-70 years and irrespective of socioeconomic status were selected for the study. Clinically diagnosed cases of primary gout which is confirmed by laboratory investigation of hyperuricemia were included in the study. Subjects who gave voluntary written informed consent were enrolled in the study.

4.2 Exclusion criteria: Patient having clinical features of severe gout like bony changes. Known case of other type of rheumatic disease like rheumatoid arthritis, osteoarthritis, psoriatic arthritis. Lactating and pregnant mothers were excluded from the study.

4.3 Intervention: On the enrollment day patients were divided into two group i.e. medicinal group who were provided individualized remedies after repertorial analysis and Control group who were provided *Colchicum autumnale* (M.T). And to avoid selection bias simple random technique was used with the help of random number table.

Patients were assessed in both groups and given study medicines at each subsequent visit. In both groups patient were also advised to follow diet chart and other life style measures.

5. Observations

5.1 Improvement in SUA level in Medicinal and Control group before and after treatment

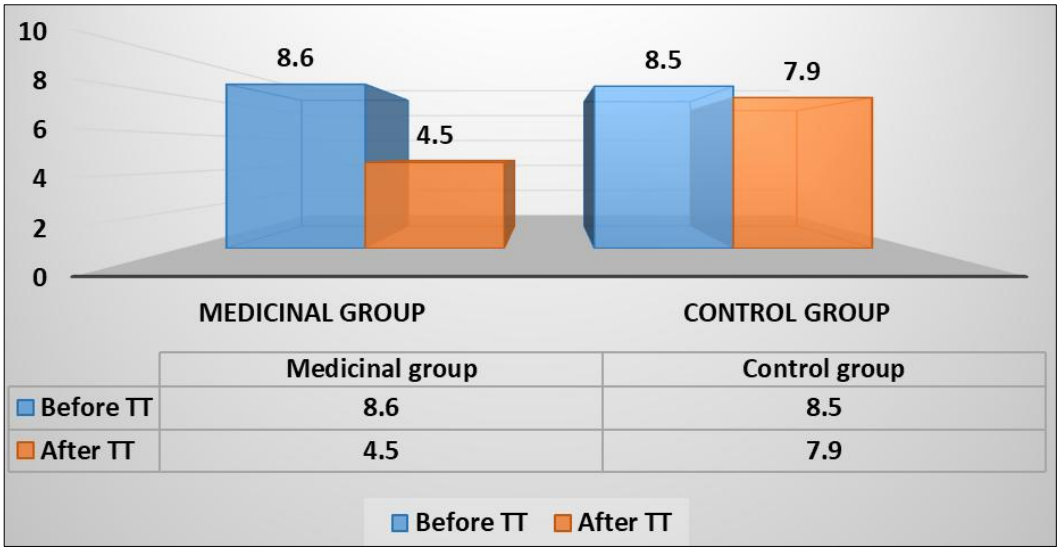

Fig 1: SUA Levels

5.2 Improvement in VAS Score levels in medicinal and control group before and after treatment

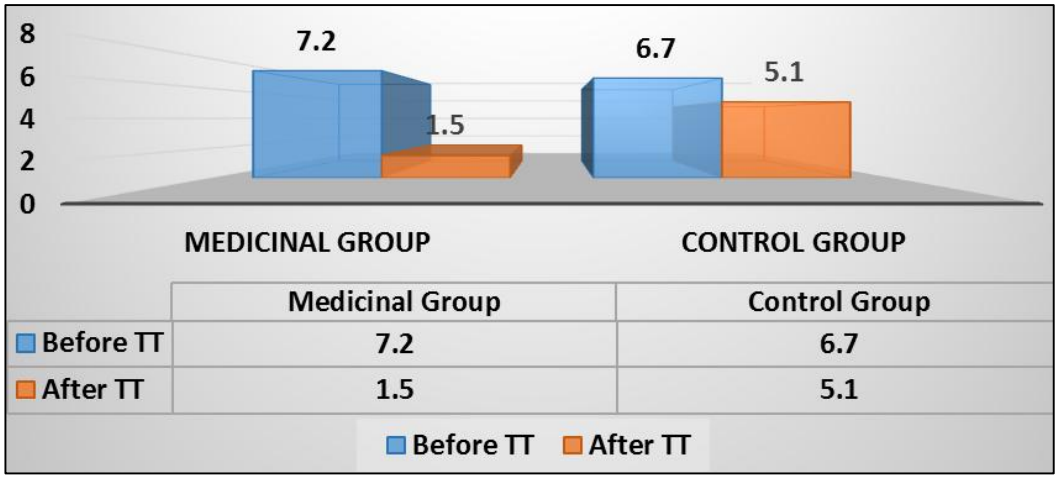

Fig 2: VAS Score

5.3 Improvement status of SUA in Medicinal group

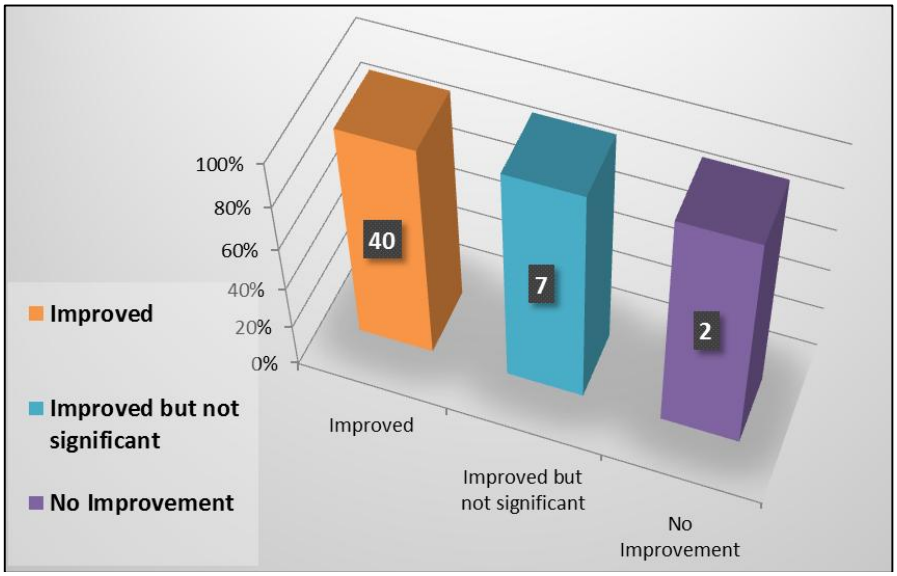

Fig 3: Improvement status of SUA in medicinal group

5.4 Improvement status of SUA in Control Group

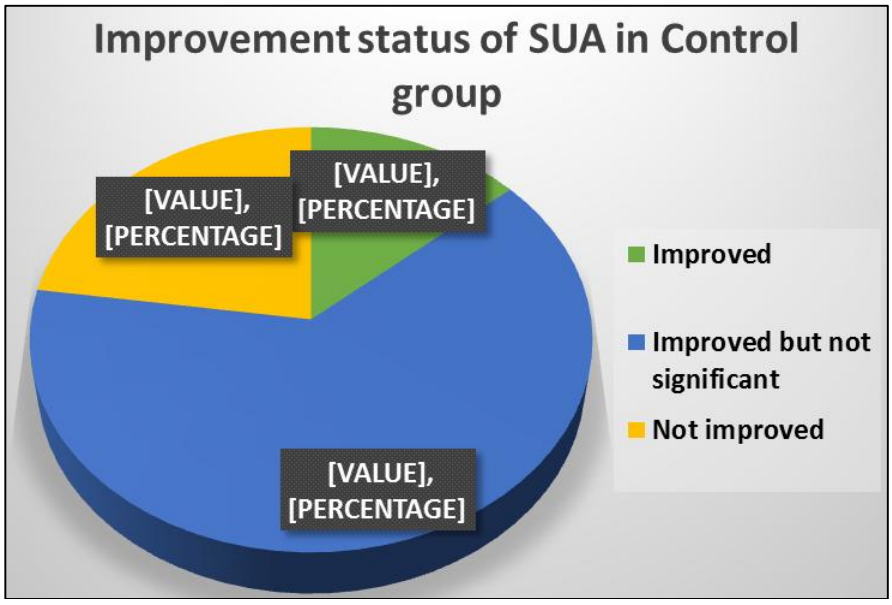

Fig 4: Improvement status of SUA in Control group

5.5 Improvement status of VAS score in Medicinal group

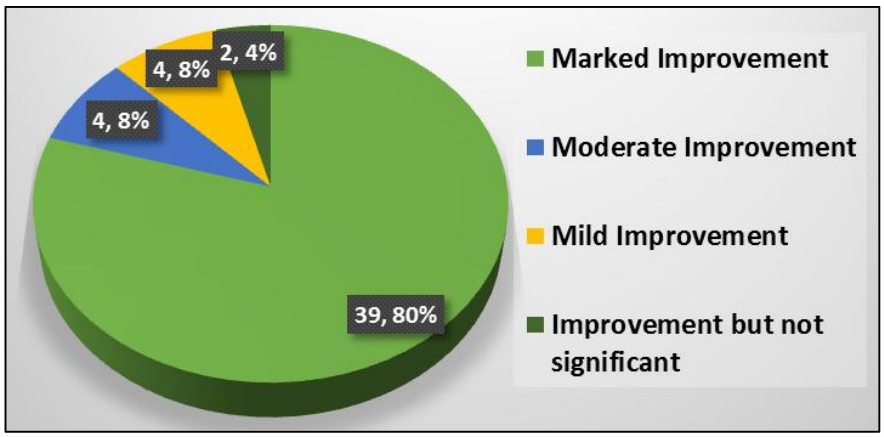

Fig 4: Improvement status of SUA score in medicinal group

5.6 Improvement status of VAS score in Control group

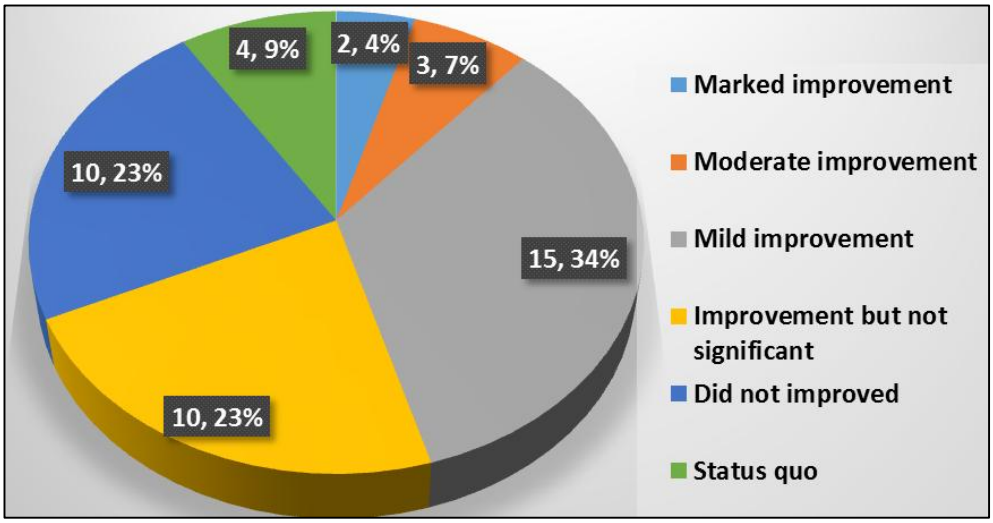

Fig 4: Improvement status of SUA score in Control group

6. Results

6.1 Statistical analysis

6.1.1 Statistical analysis of improvement in SUA level in medicinal and control group before and after treatment

Paired t-Test for SUA

To analyze the changes in the SUA level paired t test was applied in the both groups. In the study population the mean of SUA level before treatment was 8.6 and after homoeopathic treatment it was 4.5 in medicinal group. In control group mean of SUA before treatment was 8.5 and after treatment it was 7.9. The changes were relatively greater in medicinal group; however the changes were statistically significant in both groups.

In these results, the null hypothesis states that the mean difference level of SUA before and after the study is 0. Because the P value is .0001, which is less than the significance level of .05, the decision is to reject the null hypothesis and conclude that there is a statistically significant difference in the level of SUA before and after the study.

For medicinal group before and after treatment, t value is 17.81 and *P* value is < 0.0001; for control group before and after treatment t value is 4.13 and *P* value is < 0.0002. These results are significant at *P*< .05.

The results shows that the mean SUA level in medicinal group was lower than the mean SUA level of control group, and the difference was statically significant, as *p*< .0001. Thus, from above analysis it is clear that there is a difference between homoeopathic medicinal group and control *Colchicum autumnale* (M.T) group in management of hyperuricemia.

6.1.2 Statistical analysis of improvement in VAS Score in medicinal and control group before and after treatment

To analyze the changes in the scores of VAS, paired t test was applied in the both groups. In the study population the mean of VAS scores before treatment was 7.2 and after homoeopathic treatment it was 1.5 in medicinal group. In control group mean of VAS scores before treatment was 6.7 and after treatment it was 5.1. The changes were relatively greater in medicinal group; however the changes were statistically significant in both groups. In these results, the null hypothesis states that the mean difference scores of VAS for medicinal group before and after the study are 0. Because the P value is .0001, which is less than the significance level of .05, the decision is to reject the null hypothesis and conclude that there is a statistically significant difference in the scores of VAS for medicinal group before and after the study. For medicinal group before and after treatment, t value is 24.38 and *P* value is < 0.0001. This result was significant at *P*< .05. In control group before and after treatment, t value is 7.35 and *P* value is < 0.0001. These results were also significant at *P*< .05.

Above results shows that the mean VAS score in medicinal group was lower than the mean VAS score of control group, and the difference was statically significant, as *p*< .0001. Thus, from above analysis it is clear that there is a difference between reduction of VAS score in Homoeopathic group and controlled group *Colchicum autumnale* (M.T). So, we can say that individualized Homoeopathic medicines are also helpful in pain management in gout patients.

7. Summary

The study was primarily aim to analyze the role of homoeopathic remedies chosen on reportorial totality outcome in managing hyperuricaemia in primary gout.The objective of my study was to access role of individualized homoeopathic medicine in reduction of serum uric acid (SUA) and visual analogous score (VAS). From our study, it was observed that there was significant reduction in primary outcome and also in secondary outcome in medicinal group as compared to control group. It was observed that individualized homoeopathic medicine prescribe on totality of symptoms can play significant role in management of hyperuricaemia in the patient of primary gout as compare to pre-defined mother tincture (*Colchicum autumnale*). It was found that in medicinal group 40 cases improved after treatment, no significant improvement was observed in 7 cases, whereas 2 cases showed no improvement out of 49 cases (in terms of SUA Reduction). In control group 6 cases improved after treatment, no significant improvement was observed in 28 cases and 10 cases did not improved out of 44 cases (in terms of SUA Reduction). Also in the study, in medicinal group in terms of VAS reduction, 39 cases showed marked improvement after treatment, moderate

improvement was observed in 4 cases, 4 cases showed mild improvement and in 2 cases slight improvement was observed which was not significant out of 49 cases. In Control Group, in terms of VAS reduction, 2 cases showed marked improvement, moderate improvement was observed in 3 cases, 15 cases showed mild improvement, whereas 10 cases showed improvement but not significant, 10 cases did not improved and 4 cases were status quo out of 44 cases. From the study taken up to know the efficacy of Synthesis repertory in the management of hyperuricaemia in primary gout, the null hypothesis was formulated in the beginning of study "Constitutionally prescribed homoeopathic medicine in comparison to pre-defined mother tincture (*Colchicum autumnale*) does not play any significant role in management of primary gout". From my study the null hypothesis is rejected and alternate hypothesis is accepted and it may be concluded that hyperuricaemia in primary gout can be managed effectively with the use of constitutionally prescribed homoeopathic medicines on the basis of synthesis repertory. The sick individuals have to be treated holistically with appropriate constitutional remedies. These medicines not only check the progression of hyperuricaemia, but also prevent further recurrences.

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