International Journal of Homoeopathic Sciences

E-ISSN: 2616-4493
P-ISSN: 2616-4485
www.homoeopathicjournal.com
IJHS 2022; 6(2): 70-76
Received: 05-01-2022
Accepted: 09-02-2022

Mohanty Niranjan
Director, International Study and Research Center on Homoeopathy, Dharma vihar, Khandagiri, Bhubaneswar, Odisha, India

Corresponding Author:
Mohanty Niranjan
Director, International Study and Research Center on Homoeopathy, Dharmaviha, Khandagiri, Bhubaneswar, Odisha, India

Rheumatoid Arthritis: Early diagnosis and treatment outcomes with individualized Homoeopathic medicine: A single blind, simple randomized placebo controlled study

Mohanty Niranjan

DOI: https://doi.org/10.33545/26164485.2022.v6.i2b.538

Abstract
Introduction: Rheumatoid Arthritis (RA) is the most common inflammatory articular disorder. It is a chronic progressive systemic autoimmune disease with hallmark of chronic erosive-polyarthritis. It can be seen in all races with overall prevalence of about 1 percent. Its prevalence in old women is about 5 percent and female to male ratio is 3 to 1 in this disorder with the peak onset age of 50 ± 15 years .The clinical feature of RA is divided to three categories such as Articular, Peri-articular, Extra-articular (systemic).
Research Objectives: To study the response of Homoeopathic medicaments in RA with response to change in Disease Activity Scores in 28 joints (DAS28).
Methodology: The study was simple randomized and single blind method. The sample size was fixed at 90.Test group 60 i.e. Group - I(Centesimal -30), Group – II(50 Millesimal -30) & Group – III(Control) 30. Duration of study was for two years. It was carried out at International Study & Research Centre on Homoeopathy, Bhubaneswar. There were inclusion & exclusion criteria, treatment plan, follow up with disease activity scores in 28 joints (DAS28) of RA.
Results: Were documented before and after with change in RA severity, which was assessed by Disease Activity Scores in 28 joints (DAS28). Before treatment the data were collected as per DAS28 and categorized into low disease activity, moderate disease activity and high disease activity. After intervention as per the "DAS28 improvement over time points" the response was recorded. As per the guidelines above data were interpreted in results.
Statistical Analysis: Chi-square test for comparision of centesimal potency and placebo the chi-square equals to 32.593 with 1 degree of freedom. The two tailed P value is less than 0.0001. Hence the result was statistically significant difference (P< 0.4212, Cl=95%) in the treatment of RA. Similarly for fifty millesimal potency and placebo the chi-square equals to 41.567 and hence the result was significant. In results of centesimal and fifty millesimal potency the square equals to 0.647 with two tailed P value equals 0.4212 and hence the result was nonsignificant.
Conclusions: 1. Prescribing on "Totality of symptoms" is the guideline for treatment of RA. 2. Centesimal and Fifty millesimal scales are equally effective in the treatment of RA. 3. There is no difference between centesimal and fifty millesimal scale in the treatment of RA.

Keywords: Rheumatoid factor, Erythrocyte sedimentation rate, C-reactive protein, Disease Activity Score 28, Chi-square test

Introduction
Rheumatoid arthritis (R.A.) belong to the category of Inflammatory Rheumatic diseases which has progressive course involve articular and extra articular parts with pain, disability and mortality are noticed [1]. If inflammation is persistent, it results in to erosion of joints. There is damage of joints and functional impairment in large number of joints [2, 3]. The onset of disease is different to different patients, it depends upon number, type and the pattern of joints involved. The course of disease is dependent on following variable such as: genetic back ground, frequency of joint swelling, auto antibody in serum and severity of process of inflammation [4, 5].
Rheumatoid Arthritis is an inflammatory joint disorder. It is an autoimmune disease and chronic in nature. It is called as a chronic erosive poly arthritis. It is found in all races. Prevalence rate is one percent [6]. Five percent of old women are victim of it. Male and female ratio is 1:5.Vulnerable age group is 50±15 .Clinical features are divided in to three categories such as: Articular, Periarticular and extra articular (Systemic) [7].

Many a time RA can be diagnosed during history taking & physical examination Confirmation of the diagnosis and differential diagnosis are made by laboratory findings [8]. At early stage there will be vague pain with gradual onset without classical symptom of joint swelling and tenderness. Morning stiffness, pain and swelling for a prolonged period of few joints may be a clue for diagnosis .Systemic patterns of involvement of small joints of hands and feet along with positive compression test is more indicative for diagnosis of R. A. [9, 10].

Abnormal erythrocyte sedimentation rate (ESR) and C-reactive protein are indicative of Acute phase of R. A. High level of CRP is indicative for severity of the disease and radiographic changes [11]. Rheumatoid Arthritis factor (RAF) and anticyclic cetrulinated polypeptide antibodies (Anti-CCP) are two useful diagnostic tool to diagnose RA. Anti-CCP is robust parameter to determine at laboratory for RA [12, 13]. Increase in above both two tests are specificity for diagnosis of RA (14) subsequent progression of undiagnosed arthritis to Rheumatoid arthritis can be predicted with high accuracy [13] In seronegative Rheumatoid arthritis anti-CCP is an extra diagnosis tool for final recognition of it [14].

In early stage when there is joint involvement, MRI or X-ray finding are juxta articular osteoporosis and erosion of joints, it is called imaging hallmark of Rheumatoid arthritis [15] 3o to 60 percent of patients genetic back ground can be correlated and contributed to this disease HLA-DR4 allete in cucasian race, is associated with four time relative risk for Rheumatoid arthritis [16].

Joint space narrowing, erosions and subluxation develop in later stage of the disease identified by X-ray. Plain X-ray is the standard method for investigation in R.A. Synovitis is the early finding of rheumatoid arthritis and this finding of is strong prediction of erosion in bone of the involved joints. In hand joints the soft tissue swelling and juxta articular osteoporosis are found in early Rheumatoid arthritis [11] Different studies vary about the course of the disease, In 10% of people during acute phase remission is noticed [17] Smaller erosion and synovial inflammation is better detected by Doppler than X-ray [18].

Inflammation of tendon sheath is a factor which contributes for pathology of Rheumatoid arthritis. Trigger finger is due to tenosynovitis of the flexor group of tendons. Tendon ruptures are due to chronic inflammation of extension group of tendons of hand. Boutonniere and swan-neck deformities are due to formation of tracking structures associated with tendons [19] 20 to 30% of patients in RA, there is presence of airway disease cricoarytenoid arthritis, pulmonary fibrosis and small airway disease can be noticed. It is found in bronchiolitis obliterans on histopathology and with obstructive abnormalities on lung function testing [20, 21]. After 20 years of disease, there is 40% increase risk of mortality in Rheumatoid arthritis patients. Serious pathology like fibrosis of lungs pleural effusion and pericardial effusion or vasculitis are seen due to inflammation. Scleritis of eye is an example of vasculitis. Due to bone deformity &swollen inflammatory tissue there can be pressure over spinal cord resulting into ischemia and neurological complication affecting limbs, bowel and bladder function and respiratory muscles and centers in the brain resulting into death [22].

Research Objectives

To study the response of Homoeopathic medicaments in RA with response to change in disease activity scores in 28 joints (DAS28).

Study hypothesis

1. Null hypothesis (H_O):- There is no response to disease activity scores in 28 joints (DAS28) of patients of RA measured on above identified parameters with Homoeopathic treatment.
2. Alternative hypothesis (H_1):- Homoeopathic treatment causes statistically significant improvement in DAS28 of patients suffering from RA measured on above identified parameters.

Assessment parameter for Ra

Parameter	Measurement scale	Null hypothesis	Alternative hypothesis
Disease activity score	DAS28	Pre-treatment DAS28 ≤ post treatment DAS28	Pre-treatment DAS28 > post treatment DAS28

Methodology

1. **Study settings:** At International Study and Research Center on Homoeopathy, 92, Dharma Vihar, Khandagiri, Bhubaneswar. Ethical approval was obtained from the Institutional Ethical Committee of ISRCH. Written informed consent was obtained from all patients before to this study.
2. **Study duration:** It was decided to follow up for a period of two years.
3. **Sample size:** It was determined to take 90 patients.
4. **Sampling method:** It was decided to adopt simple randomized and single- blind method from 187 patients enrolled for the project.

Primarily the entire sample size was divided into three groups such as:

Group I: Test group with centesimal potency
Group II: Test group with 50 Millesimal potency
Group III: Control with Placebo
Following inclusion and exclusion criteria were fixed.

Inclusion criteria

a. Ages- 20 - 65 years
b. Gender – Both
c. Case presenting with swelling of joints, tenderness of joints, morning stiffness and arthralgia or arthritis of joints particularly symmetric pattern of involvement with or without deformity of joints.

Exclusion criteria

a. Taking other treatment for RA
b. Patient using allopathic treatment for other complaints.
c. Presence of joint affections other than RA (i.e osteoarthritis, rheumatic fever, psoriatic arthritis etc.).

Treatment plan

Symptoms were collected in a prescribed case taking/ recording format. Totality was built up as per regular procedures. Each case was repertorised. Medicine prescribed after repertorisation with due consultation with Materia medica. Repetition schedule was infrequent both for 50 millesimal and centesimal. Medicine was procured from a GMP compliant pharmaceutical firm i.e Dr. Willmar Schwabe India Pvt. Ltd.

Follow up

Response of medicine was identified and recorded by change with signs & symptoms periodically at 1 month interval along with change in DAS28 for a period of two years.

Outcomes Parameters

Change in RA severity, which is assessed by DAS28. Disease activity scores in 28 joints (DAS28) is an established RA assessment tool that will be used as a measure of the effects of Homoeopathic treatment in patients of RA at baseline and at monthly intervals for 2 years.

Before treatment the data was collected as per DAS28 and was categorized into low disease activity, moderate disease activity and high disease activity. After intervention as per the "DAS28 improvement over time points" the response was recorded. As per the guidelines above data were interpreted in results.

Results

Table 1: Disease Activity Score as per DAS28 for RA measurement tool before and after treatment

Group – I Centesimal Potency			Group – II Fifty millesimal Potency			Group – III Control (Placebo)		
Sl. No.	**Before**	**After**	**Sl. No.**	**Before**	**After**	**Sl. No.**	**Before**	**After**
1	5.8	0.7	31	5.2	3.0	61	6.2	6.2
2	4.6	0.4	32	6.0	3.0	62	4.8	4.6
3	3	0.4	33	4.6	1.4	63	5.6	5.8
4	6	2	34	6.2	2.4	64	3.4	3.6
5	5	2	35	4.4	0.8	65	4.2	4.8
6	4.8	2.8	36	6.8	3.4	66	5.2	5.2
7	2.8	0.6	37	6.1	4.2	67	6.2	5.8
8	3.2	1.2	38	4.8	2.0	68	3.6	4.8
9	4.2	2	39	5.2	2.1	69	4.2	4.6
10	5.2	2.2	40	4.8	2.4	70	3.4	3.4
11	5.4	1.8	41	4	2.0	71	4.4	4.2
12	4.2	1.2	42	3	1.0	72	4.8	4.6
13	3	0.4	43	4.2	4.2	73	3.8	3.6
14	3.2	4.2	44	2.8	2.8	74	4.2	4
15	5.1	2.1	45	3.4	0	75	4.8	4.6
16	6.2	1.8	46	5.2	1.0	76	2.8	3.2
17	4.8	1.8	47	5.8	3.2	77	2.6	3.2
18	4.6	0.8	48	4.6	2.2	78	5.6	5.4
19	1.8	0.9	49	4.2	0.8	79	3.2	3.2
20	2.1	1.1	50	4.8	0.6	80	4.4	4.4
21	5.8	5.6	51	7	3.2	81	3.8	3.8
22	4.8	4.6	52	6	2	82	5.2	5.4
23	3.8	0.8	53	6.2	3	83	6.6	6.2
24	4.2	1.8	54	6	2	84	5.8	5.8
25	5.8	2.4	55	4.6	2	85	4.8	4.6
26	4.8	2.8	56	4.2	1.8	86	2.8	1.8
27	3.7	1.7	57	4	3.2	87	2.8	2
28	2.4	4.2	58	5	3.2	88	3.2	3.2
29	4.8	5.4	59	6	4	89	4.8	4.6
30	6.2	4.2	60	3	1.2	90	5.0	5.2

Grades of disease activity of ra as per das28 at initial stage (before treatment)

- High->5.1
- Moderate-3.2-5.1
- Low-3.2

Table 2: Number of patients in different Grades of Disease Activity of RA as per DAS28 in various groups before treatment with EULAR response criteria

Grades of Disease Activity	Group-I Centesimal Scale	Group-II Fifty millesimal Scale	Group-III Control (Placebo)
High (>5.1)	8	13	8
Moderate (3.2 - 5.1)	16	14	18
Low (<3.2)	6	3	4

Table 3: Results of DAS28 Improvement over time points after treatment in Group-I (Centesimal scale) under various grades of disease activity with EULAR response criteria

Different grades of disease activity as per DAS28 before treatment	DAS28 improvement over time points after treatment with different responses		
	>1.2	0.6-1.2	<0.6
Low <3.2	Good response 3	Moderate response 2	No response 1
Moderate 3.2-5.1	Moderate response 16	Moderate response 0	No response 0
High >5.1	Moderate response 7	No response 0	No response 1

Table 4: Results of DAS28 Improvement over time points after treatment in Group-II (Fifty millesimal scale) under various grades of disease activity with EULAR response criteria

Different grades of disease activity as per DAS28 before treatment	DAS28 improvement over time points after treatment with different responses		
	>1.2	0.6-1.2	<0.6
Low <3.2	Good response 2	Moderate response 0	No response 1
Moderate 3.2-5.1	Moderate response 12	Moderate response 1	No response 1
High >5.1	Moderate response 13	No response 0	No response 0

Table 4: Results of DAS28 Improvement over time points after treatment over in Group-III (Control -Placebo) under various grades of disease activity with EULAR response criteria

Different grades of disease activity as per DAS28 before treatment	DAS28 improvement over time points after treatment with different responses		
	>1.2	0.6-1.2	<0.6
Low <3.2	Good response 0	Moderate response 2	No response 2
Moderate 3.2-5.1	Moderate response 0	Moderate response 0	No response 18
High >5.1	Moderate response 0	No response 0	No response 8

Table 5: Positive and Negative response results of various groups:-

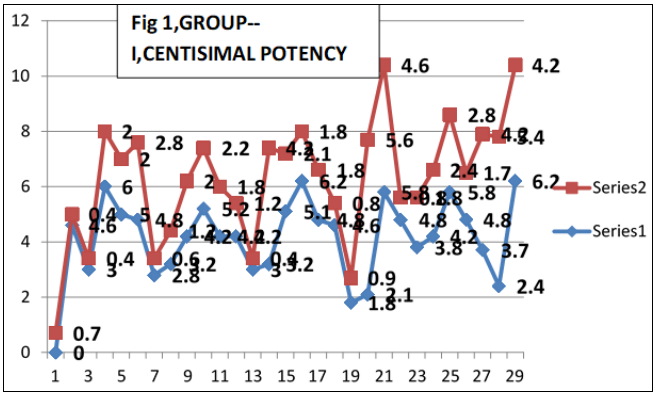
Types of responses	Effect of centesimal scale	Effect of fifty millesimal scale	Effect of placebo (Control)
	Group I	Group II	Group III
Positive response	25	28	02
Negative response	05	02	28

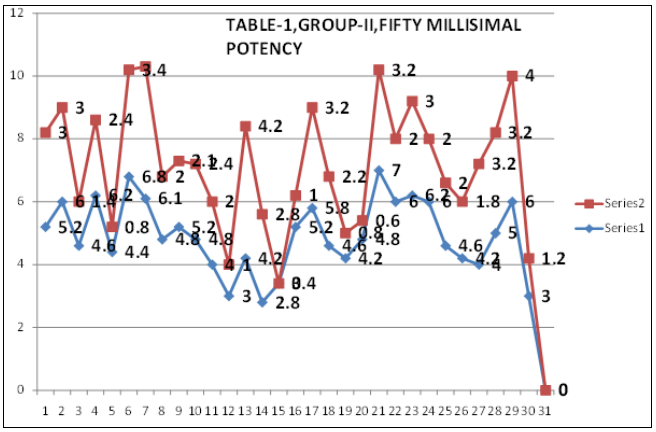
Discussion/Statistical Analysis:

Rheumatoid arthritis (R.A.) is most common inflammatory joint disorder. It is chronic progressive systemic autoimmune diseases with hallmark of chronic erosive polyarthritis .It is seen in all races with overall prevalence of about 1%. Female and male ratio is 3:1. It is more seen in the age before 35 to 65 years. The clinical features are due to articular, peri articular and extra articular symptoms resulting in pain, morning stiffness, deformity of joints and mortality. Erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) provides best information about acute phase of response. Auto antibodies such as rheumatoid factor (RF) and anti-cyclic cetrulinated polypeptide (Anti-CCP) are very helpful for diagnosis.

In the present study, data obtained were put to statistical analysis. The interpretations are as follows:

1. Results obtained from centesimal potency and placebo groups were put for chi-square with Yates correction. It was found that chi-squared equals 32.593 with 1 degree of freedom and the two tailed P value is less than 0.0001. Hence there is statistically significant difference (P< 0.4212, Cl=95%) in the results of the treatment of RA by centesimal potency and placebo.
2. Results obtained from fifty millesimal potency and placebo groups were put for chi-square with Yates correction. It was found that chi-squared equals 41.667 with 1 degree of freedom and the two tailed P value is less than 0.0001. Hence there is statistically significant difference (P< 0.4212, Cl=95%) in the results of the treatment of RA by fifty millesimal potency and placebo.
3. Results obtained from centesimal potency and fifty millesimal potency were put for chi-square with Yates correction. It was found that chi-squared equals 0.647 with 1 degree of freedom and the two tailed P value is less than 0.4212. Hence there is no statistically significant difference (P< 0.0001, Cl=95%) in the results of the treatment of RA by centesimal potency and fifty millesimal potency of Homoeopathic medicines.





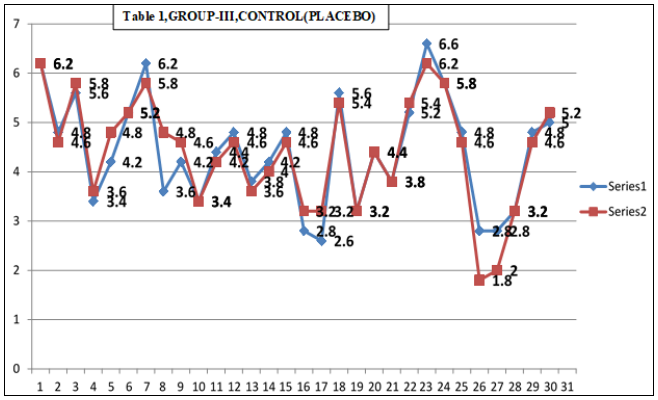


Fig 1: Disease Activity Score as per DAS28 for RA measurement tool before and after treatment

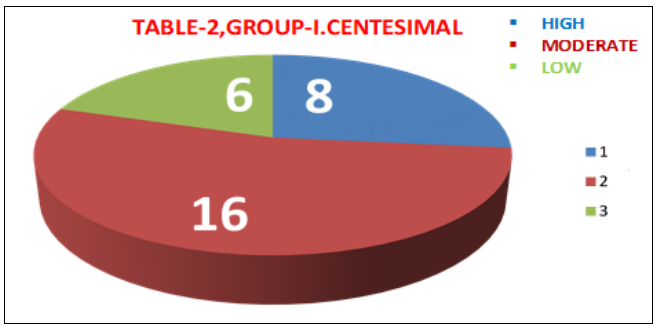
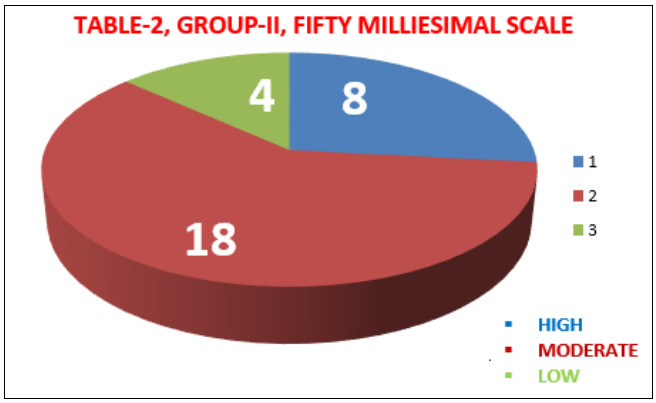
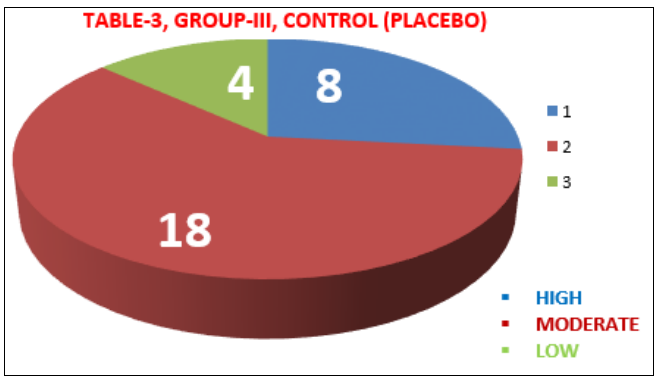
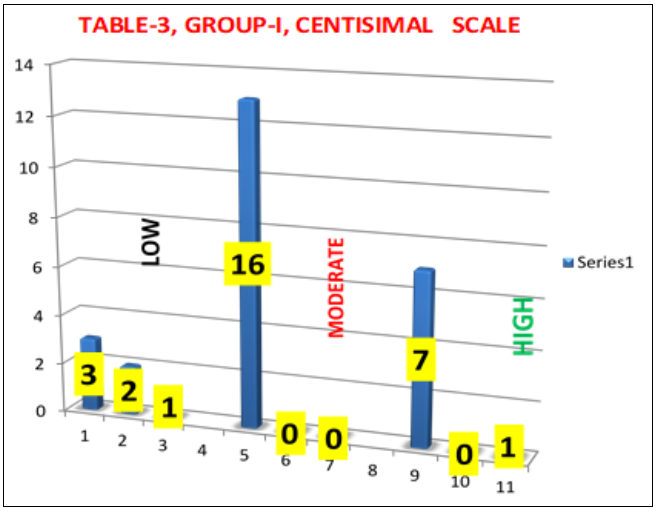


Fig 2: Grades of Disease Activity of RA as per DAS28 at initial stage (before treatment)







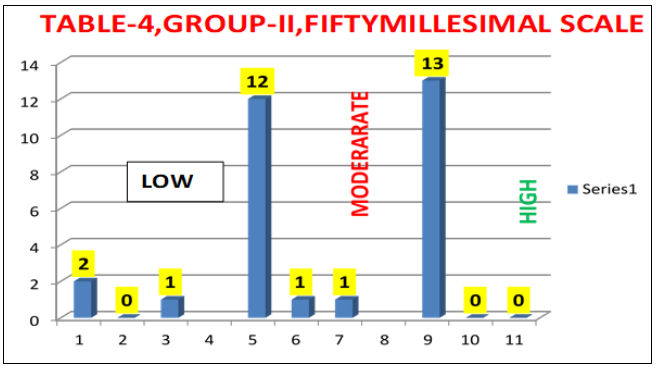
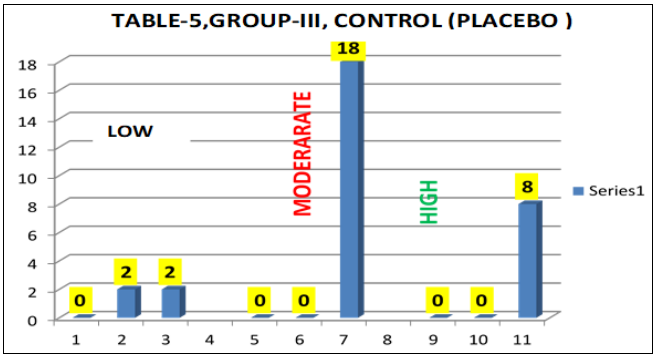
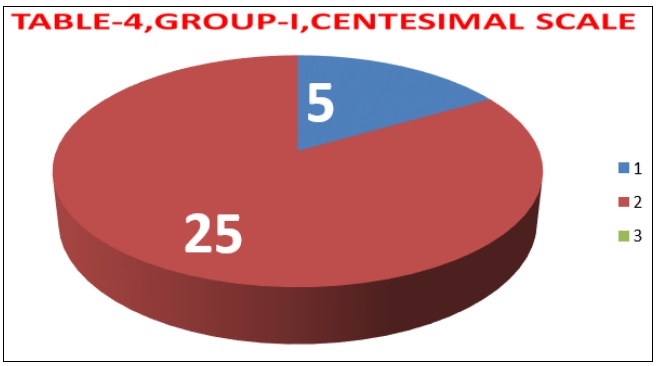


Fig 3: Results of DAS28 Improvement over time points after treatment over initial DAS28 in Group-I (Centesimal scale)





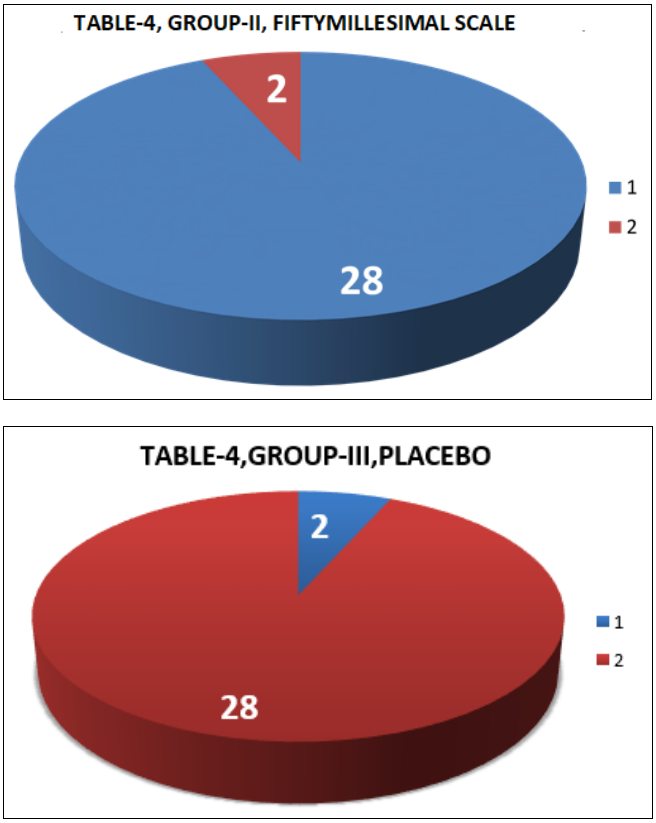


Fig 4: Results of DAS28 Improvement over time points after treatment over initial DAS28 in Group-III (Control -Placebo)

Conclusion

Homoeopathy was discovered more than two hundred years back. The axioms on which it has been built up holds good till today i.e. "Totality of symptoms". Modern tool like DAS28 applied in RA to assess the improvement after homoeopathic medicine intervention and it has shown significant result. It means homoeopathic medicine is effective in treatment of RA. Apart from that it is also concluded that both centesimal and fifty millesimal potency are equally effective in the treatment of RA. There is no much difference between centesimal and fifty millesimal potency results in the treatment of RA.

Acknowledgement: Author deeply acknowledges the contribution of following persons in various stages of the work. Dr. Sujata Choudhury, Dr. Santosh Kumar Jena, Dr. Bishupriya Sasmal and Dr. Priyanka Sahu, Dr. Rasmita Bisoi.I duly acknowledges to Professor P.L.C.M. van Riel, et al., Department of Rheumatology, University Medical Center, Netherlands for using their DAS28 assessment tool for RA.

References

1. Birch JT, Bhattacharya S. Emerging Trends in Diagnosis and Treatment of Rheumatoid Arthritis. Primary Care: Clinics in Office Practice. 2010 Dec 1;37(4):779-92.
2. El Miedany Y, Youssef S, Mehanna AN, El Gaafary M. Development of a scoring system for assessment of outcome of early undifferentiated inflammatory synovitis. Joint Bone Spine. 2008 Mar;75(2):155-62.
3. BC. Progression in early rheumatoid arthritis. Best practice & research Clinical rheumatology [Internet]. 2009 Feb [cited 2022 Mar 26];23(1). Available from: https://pubmed.ncbi.nlm.nih.gov/19233046/
4. Gossec L, Combescure C, Rincheval N, Saraux A, Combe B, Dougados M. Relative Clinical Influence of Clinical, Laboratory, and Radiological Investigations in Early Arthritis on the Diagnosis of Rheumatoid Arthritis. Data from the French Early Arthritis Cohort ESPOIR. The Journal of Rheumatology. 2010 Dec 1;37(12):2486-92.
5. Finckh A, Liang MH, Van Herckenrode CM, De Pablo P. Long-term impact of early treatment on radiographic progression in rheumatoid arthritis: A meta-analysis. Arthritis Rheum. 2006 Dec 15;55(6):864-72.
6. Rothschild BM, Turner KR, DeLuca MA. Symmetrical erosive peripheral polyarthritis in the Late Archaic Period of Alabama. Science. 1988 Sep 16;241(4872):1498-501.
7. Kvien TK, Uhlig T, Ødegård S, Heiberg MS. Epidemiological aspects of rheumatoid arthritis: the sex ratio. Ann N Y Acad Sci. 2006 Jun;1069:212-22.
8. Waits JB. Rational use of laboratory testing in the initial evaluation of soft tissue and joint complaints. Prim Care. 2010 Dec;37(4):673-89.
9. Heidari B. Undifferentiated arthritis: Predictive factors of persistent arthritis and treatment decisions. Caspian Journal of Internal Medicine. 2010 Jun 1;1:79-88.
10. Svensson B, Boonen A, Albertsson K, Van Der Heijde D, Keller C, Hafström I. Low-dose prednisolone in addition to the initial disease-modifying antirheumatic drug in patients with early active rheumatoid arthritis reduces joint destruction and increases the remission rate: a two-year randomized trial. Arthritis Rheum. 2005 Nov;52(11):3360-70.
11. Grassi W, De Angelis R, Lamanna G, Cervini C. The clinical features of rheumatoid arthritis. Eur J Radiol. 1998 May;27 Suppl 1:S18-24.
12. Heidari1 B, Lotfi1 Z, Ali Firouzjahi2 R, Heidari3 P. Comparing the diagnostic values of Anti-cyclic citrullinated peptide antibodies and rheumatoid factor for rheumatoid arthritis. Research in Medicine. 2010 Jan 10;33(3):156-61.
13. Heidari B, Firouzjahi A, Heidari P, Hajian K. The prevalence and diagnostic performance of anti-cyclic citrullinated peptide antibody in rheumatoid arthritis: the predictive and discriminative ability of serum antibody level in recognizing rheumatoid arthritis. Ann Saudi Med. 2009;29(6):467-70.
14. Quinn MA, Gough AKS, Green MJ, Devlin J, Hensor EMA, Greenstein A, et al. Anti-CCP antibodies measured at disease onset help identify seronegative rheumatoid arthritis and predict radiological and functional outcome. Rheumatology. 2006 Apr 1;45(4):478-80.
15. Fuchs HA, Kaye JJ, Callahan LF, Nance EP, Pincus T. Evidence of significant radiographic damage in rheumatoid arthritis within the first 2 years of disease. J Rheumatol. 1989 May;16(5):585-91.
16. Legrand L, Lathrop GM, Marcelli-Barge A, Dryll A, Bardin T, Debeyre N, et al. HLA-DR genotype risks in seropositive rheumatoid arthritis. Am J Hum Genet. 1984 May;36(3):690-9.
17. Wolfe F, Hawley DJ. Remission in rheumatoid arthritis. J Rheumatol. 1985 Apr;12(2):245-52.
18. Vosse D, De Vlam K. Osteoporosis in rheumatoid arthritis and ankylosing spondylitis. Clin Exp

Rheumatol. 2009 Aug;27(4 Suppl 55):S62-67.
19. Kahlenberg JM, Fox DA. Advances in the Medical Treatment of Rheumatoid Arthritis. Hand Clin. 2011 Feb;27(1):11-20.
20. Devouassoux G, Cottin V, Lioté H, Marchand E, Frachon I, Schuller A, et al. Characterisation of severe obliterative bronchiolitis in rheumatoid arthritis. Eur Respir J. 2009 May;33(5):1053-61.
21. Kelly C, Saravanan V. Treatment strategies for a rheumatoid arthritis patient with interstitial lung disease. Expert Opin Pharmacother. 2008 Dec;9(18):3221-30.
22. Conditions (UK) NCC for C. Introduction [Internet]. Rheumatoid Arthritis: National Clinical Guideline for Management and Treatment in Adults. Royal College of Physicians (UK); 2009 [cited 2022 Mar 26]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK51818/