Osteoarthritis

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Objectives: The objectives of the study were to identify a group of most effective homoeopathic medicines in osteoarthritis and to identify their reliable indications, most useful potencies, frequency of administration and their relationship with other medicines.

Methods: It was a multi-centric, observational, prospective study (Open clinical trial) carried out from the year 1984 to 2005. Out of 1323 osteoarthritis patients enrolled, a total of 1049 were followed up regularly. The detailed case recording was done for each patient and the medicine was prescribed according to the individual totality of the patient. The patients were monitored for assessing the improvement status according to the pre-defined criteria and the results were evaluated.

Results: Out of 1049 osteoarthritis patients followed up, 1007 patients improved in varying degrees: marked improvement in 304 patients, moderate improvement in 325 patients and mild improvement in 378 patients. Forty patients did not improve and 2 were worse. The prevalence of the disease is more in females and the vulnerable age is between 40 and 75 years. A group of homoeopathic medicines were found useful in relieving the symptoms and signs of osteoarthritis when prescribed as per their indications. Most useful medicines were Arnica (n=10), Arsenicum album (n=10), Bryonia alba (n=86), Calcarea carbonica (n=92), Calcarea fluoricum (n=15), Causticum (n=8), Graphites (n=15), Lycopodium clavatum (n=168), Medorrhinum (n=21), Natrum mur. (n=11), Pulsatilla (n=26), Rhus toxicodendron (n=279) and Sulphur (n=83).

Conclusion: The outcome of the study shows that homoeopathic medicines are useful in managing osteoarthritis. The most reliable indications of the medicines found useful were deduced in this study. The most frequently affected joints are knees, shoulders and lumbar vertebrae. The most useful potencies were 30 and 200. The other objectives of the study which included frequency of administration of medicines and their relationship with other medicines could not be achieved. Further study with predefined biochemical and radiological markers needs to be conducted.

Key words: homoeopathy; osteoarthritis; observational study; bryonia alba; calcarea carbonica; lycopodium clavatum; pulsatilla; rhus toxicodendron; sulphur.

Introduction

Osteoarthritis (OA) is a common disease of joints more in elderly, sparing no age, race, or geographic area. It is caused mainly by wear and tear of the joint structures, especially the articular cartilages. It is estimated that 80% of the population will have radiographic evidence of OA by age of 65, although only 60% of those will be symptomatic[1]. The incidence of symptomatic OA increases with age and weight. The incidence of this disease is seen three times more often in women and the mean age of onset is 50. It is usually primary but may develop secondary to any joint disease or joint injury. The primary OA most commonly affects some or all of the following joints such as the distal interphalangeal (DIP) and the proximal interphalangeal (PIP) joints of the

fingers, the carpometacarpal joint of the thumb, the hip, the knee, the metatarsophalangeal (MTP) joint of the big toe and the cervical and lumbar spines. The secondary OA may occur in any joint as a sequelae to articular injury resulting from either intra-articular or extra-articular causes.

Hereditary factors, overuse of joints, aging and change in the chemical characteristics of the ground substance of the joint have been associated with this disease. Causes of secondary OA include pre-existing joint disease, obesity, hyper mobility, orthopedic deformities, endocrine disorders and secondary neuropathies. Obesity is a risk factor especially for knee OA. Other jobs which require frequent bending and carrying and sports also increase the risk of knee OA.

The onset of the disease is insidious and the clinical features include pain in the joints on movement, worse at the end of the day, stiffness of the joints, restricted range of movement of joints, joint instability and some times there may be swelling of the involved joints. The radiological abnormalities include narrowing of the joint space, osteophytes formation, sub-chondral bone sclerosis and cysts, collapse of bones and subluxations[2].

There are hundreds of remedies mentioned in different textbooks of materia medica and repertory for managing osteoarthritis and success has been reported in managing the disease in individual practices also. However, no scientific study has been conducted to draw some valid evidences on the effectiveness of homoeopathic treatment in osteoarthritis. Therefore, CCRH conducted a study to find out the most frequently indicated homoeopathic medicines in osteoarthritis with following objectives.

Aims and Objectives

To evolve a group of most efficacious homoeopathic medicines useful in the management of osteoarthritis and to identify their reliable indications, most useful potencies, frequency of administration and relationship with other medicines.

Material and Methods

Study Design

An open, multi-centric, prospective observational study on osteoarthritis was carried out by Central Council for Research in Homoeopathy at its Central Research Institute (Homoeopathy), Kottayam, Kerala (2000-2005), Regional Research Institute (Homoeopathy), Gudivada, A.P. (1984-2005), and Clinical Research Unit (Homoeopathy), Patiala, Punjab (1994-2003). The data was compiled from the unpublished consolidated reports of these centres.

Study sample

A total number of 1323 osteoarthritis patients were registered. Of these, 1049 patients (271 males and 778 females) were followed up.

After the selection of the patients, according to the pre-defined parameters as stated above, detailed history of each patient was taken and the symptoms were carefully evaluated for determining the prescribing totality. Repertorisation was done after selecting the corresponding rubrics.

Medicines were considered on the basis of miasms, predisposing and precipitating factors, generalities, modalities, presenting complaints, constitutional features or repertorial totality. In some patients, however, prescriptions were based on characteristic symptoms or keynotes. The selected medicines were administered to the patients over a period of time and the improvement of the patients was monitored from time to time as per pre-defined criteria and the results were evaluated.

Table 1: Total patients enrolled

No. of patients	Total	Male	Female
Registered	1323	340	983
Dropped out	274	69	205
Included in the study	1049	271(26%)	778 (74%)

Table 2: Parameters followed for assessment of intensity

Intensity	Criteria for assessment
Mild	Asymptomatic patients but only radiological abnormalities.
Moderate	Patients with severe pain, stiffness with or without swelling, with or without cracking in joints, lock knee, Heberden's nodes or deformities, but no pain at night.
Severe	Patients with night pains.

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The age of the patients ranged from 15 to 88 years (Table 4). The duration of the complaints of patients ranged from 1 year to 30 years (Table 5).

Table 3: Parameters followed for post-treatment outcome assessment

Post - treatment outcome	Criteria for assessment
Cured	Complete disappearance of subjective and objective symptoms with no recurrence for next five years.
Improvement	
Mild	Reduction in pain and other symptoms with recurrence after least exertion.
Moderate	Disappearance of morning stiffness, cracking, lock knee, limitation of motion etc. but pain is partially relieved.
Marked	Complete disappearance of subjective and objective symptoms (excluding radiological findings) with no recurrence during the period of study.
Worse	Aggravation of signs and symptoms even after the treatment with well selected remedies for a considerable period.
Dropped out	Patients who are excluded from the project due to various reasons such as serious systemic illnesses and poor compliance by the patients.

Table 4: Age profile of the patients

Age groups (in years)	Total patients	Male	Female
15 - < 20	6	3	3
20 - < 25	6	0	6
25 - < 30	11	0	11
30 - < 35	30	4	26
35 - < 40	83	9	74
40 - < 45	140	23	117
45 - < 50	221	41	180
50 - < 55	222	49	173
55 - < 60	186	52	134
60 - < 65	167	52	115
65 - < 70	126	43	83
70 - < 75	89	44	45
75 & >	36	20	16

Table 5: Duration of complaints

Groups (in years)	No. of patients		
	Total	Male	Female
< 2	378	102	276
2 - < 5	404	100	304
5 - < 10	396	101	295
10 - < 15	65	17	48
15 - < 20	24	3	21
20 & >	56	17	39

Observations

Patients of all age groups are enrolled for the study (Table 4), having complaints of osteoarthritis. Several predisposing (Table 7), precipitating (Table 8) and miasmatic factors (Figure 2) are identified to be responsible for the development of osteoarthritis.

Results

Out of 1049 osteoarthritis patients studied, 1007 patients improved in varying degrees: marked improvement in 304 patients, moderate improvement in 325 patients and mild improvement in 378 patients. Forty patients did not improve, 2 were worse and 274 dropped out. Intensity

Table 6: Intensity of the disease

Intensity before treatment	No. of patients		
	Total	Male	Female
Mild	147	63	84
Moderate	578	158	420
Severe	598	119	479

Table 7: Predisposing factors

Predisposing factors	No. of patients		
	Total	Male	Female
Heredity	512	107	405
Old age	225	78	147
Obesity	492	124	368
Occupational	170	57	113
Sedentary life style	42	5	37
Physically handicapped	2	0	2

Figure 1: Precipitating factors

Table 8: Precipitating factors

Precipitating factors	No. of patients		
	Total	Male	Female
Trauma	41	17	24
Overuse of joints	952	213	739
Winter season	766	205	561
Rainy season	433	64	369
Summer season	97	20	77
Change of climate	104	42	62
Cold bath	273	33	240
Menopause	10	00	10

Figure 2: Miasmatic factors

of the complaints was assessed before and after treatment, as per the pre-defined criteria, and there was improvement of varying degrees in 1007 patients (Table 13). There was improvement in the subjective symptoms (Table 14), objective symptoms (Table 15) in many patients and in radiological findings (Table 16) in a few patients, after treatment for two months to eight years. Several medicines were found to be useful in the management of Osteoarthritis, their reliable indications and useful potencies were also identified (Table 18).

Discussion

It was an observational study conducted at 3 different centres to determine the efficacy of homoeopathic medicines in the management of osteoarthritis. The findings of this study indicate that the homoeopathic medicines are useful in managing osteoarthritis. These findings are similar to those of other studies to evaluate the efficacy of Homoeopathy to manage osteoarthritis[3-6].
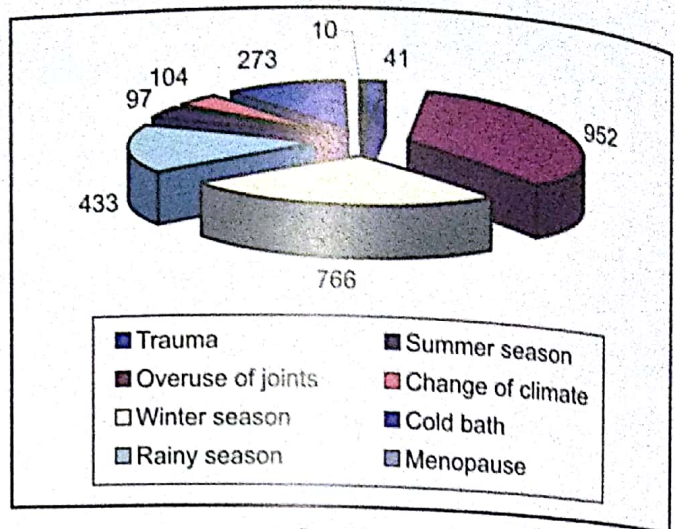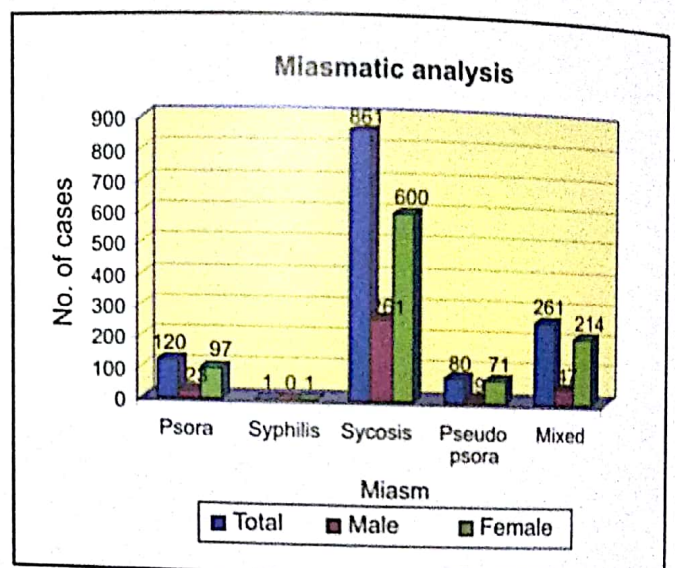
Table 9: Clinical types

Clinical Types	No. of patients		
	Total	Male	Female
Primary (idiopathic)			
• Localized	367	60	307
• Generalized	824	240	584
Secondary			
• Post traumatic	66	22	44
• Inflammatory - Rheumatoid arthritis	24	1	23
• Endocrine - Hypothyroidism	1	0	1
• Neuropathic arthropathy - Diabetes mellitus	41	17	24

Table 10: Basis of diagnosis

Basis of diagnosis	No. of patients		
	Total	Male	Female
Subjective symptoms and objective symptoms	605	166	439
Subjective symptoms, objective symptoms and pathological findings	718	174	544

Table 11: Joint involvement

Nature of joint involvement	No. of patients		
	Total	Male	Female
Mono-articular	37	7	30
Poly-articular	1286	333	953
Unilateral	196	32	164
Bilateral	1127	308	819

Table 12: Joints involved

Joints involved*	No. of patients		
	Total	Male	Female
Hip joints	181	24	157
Knee joints	961	217	744
Ankle joints	203	27	176
Shoulder joints	310	38	272
Elbow joints	177	28	149
DIP joints of hands	61	16	45
Carpometacarpal joins	82	16	66
Metatarsal joints	53	7	46
Sacro-iliac joints	7	2	5
Tempero-mandibular joints	2	0	2
Cervical	254	34	220
Lumbar	348	67	281

*Data related to Central Research Institute (H), Kottayam only.

Table 13: Improvement status

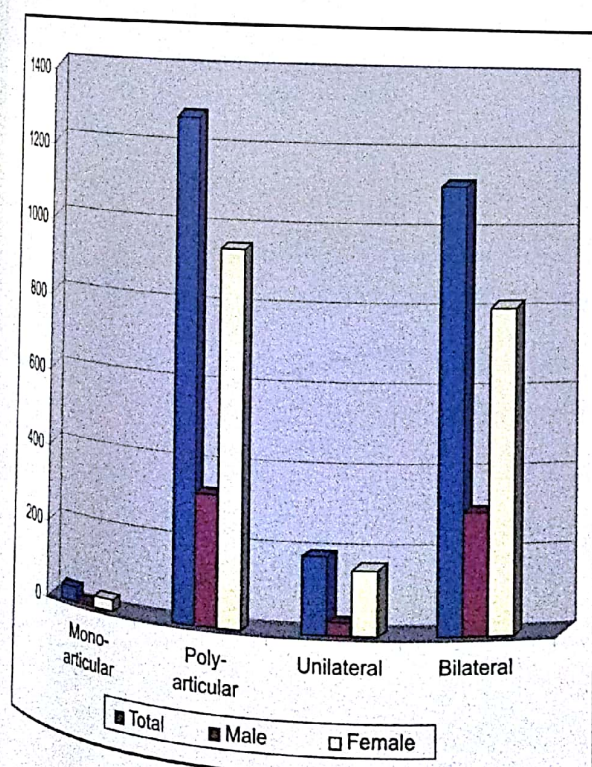| Status	Total	Male	Female	Percentage
Improved	1007	256	751	96%
Markedly	304	55	249	29%
Moderately	325	62	263	31%
Mildly	378	139	239	36%
Not improved	40	14	26	3.8%
Worse	2	1	1	0.1%
Dropped out	274	69	205	20%

Figure 3: Nature of joint involvement

Out of the total number of 1323 osteoarthritis patients studied, there were 340 male and 983 (74.3%) female patients. Osteoarthritis was more seen in females and this finding of the study is supported by the information given in the textbooks of Practice of Medicine[2].

From the knowledge of practice of medicine, it is known that heredity is an important predisposing factor in causing osteoarthritis. Various other studies also support this finding[7-12]. This study further adds to support such finding as a large number of patients studied had family history of osteoarthritis.

About 85% of the patients enrolled in this study belonged to age group between 40 and 75 years. The clinical types of the included patients were primary and

Table 14: Subjective symptoms

Subjective symptoms	No. of patients in whom observed before treatment			No. of patients in whom remained after treatment		
	Total	Male	Female	Total	Male	Female
Pain < motion	801	258	543	432	156	276
Pain < beginning to move	908	185	723	566	181	385
Pain < night	600	115	485	40	14	26
Pain < daytime	247	78	169	127	52	75
Morning stiffness	964	222	742	441	120	321
Cracking in joints	471	85	386	69	11	58
Lock knee	262	42	220	21	4	17
Bilateral paraesthesia	63	8	55	7	2	5
Symptoms of cord compression	14	2	12	10	2	8

Table 15: Objective symptoms

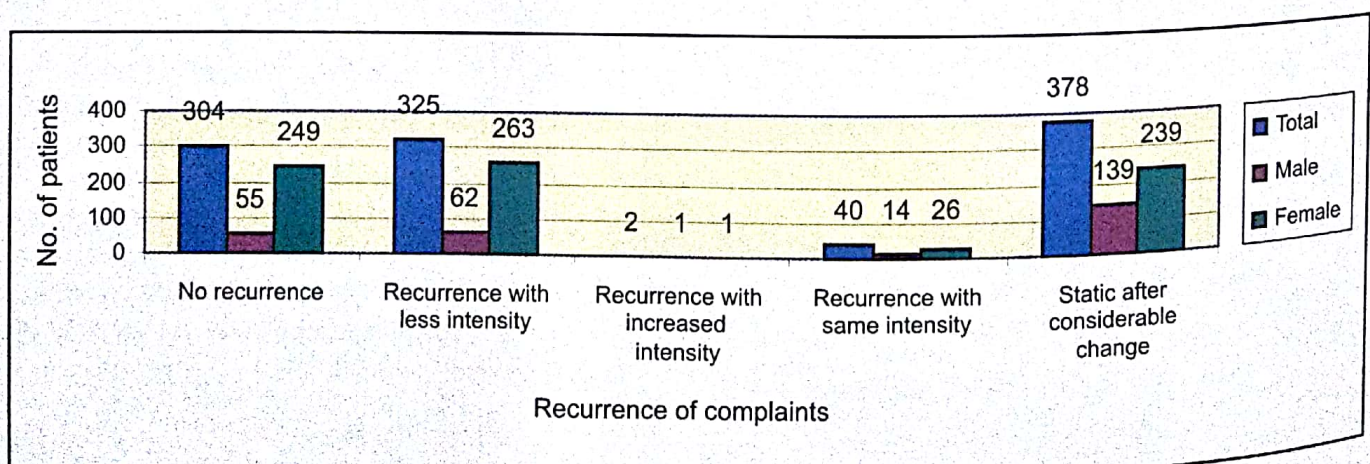| Objective symptoms	No. of patients in whom observed before treatment			No. of patients in whom remained after treatment		
	Total	Male	Female	Total	Male	Female
Swelling of joints	582	76	506	85	20	65
Limited joint movements	951	211	740	226	64	162
Deformities	19	3	16	19	3	16
Heberden's nodes	5	0	5	5	0	5
Flexion contractures	2	0	2	2	0	2
Weakness of lower limbs	191	32	159	54	8	46

Figure 4: Recurrence of the complaints

Table 16: Radiological findings

Radiological findings	No. of patients in whom observed before treatment			No. of patients in whom remained after treatment		
	Total	Male	Female	Total	Male	Female
Presence of osteophytes	416	97	319	367	82	285
Reduction in joints space	455	105	350	455	105	350
Collapse of bones and subluxations	3	1	2	3	1	2
Sclerosis of subchondral bones	4	0	4	4	0	4
Subchondral cysts	2	0	2	2	0	2

Table 17: Duration of treatment*

Group (in years)	Total No. of patients			No. of patients responded		
	Total	Male	Female	Total	Male	Female
<1	789	237	552	524	176	348
1 - <2	196	44	152	178	37	141
2 - <5	296	49	247	296	46	250
5 - <10	30	8	22	38	13	25
10 - <15	7	1	6	8	2	6
15 - <20	5	1	4	5	1	4

Table 18: Most useful medicines with their reliable indications

Name of medicines and potency	No. of patients			Reliable indications
	Prescribed to	Found useful in	Percentage %	
Arnica 200	19	10	52.6	• Osteoarthritis after trauma to the joint. • Pain in knee joint after jumping from height. • Pain on part laid on.
Arsenicum album 30, 200, 1M	15	10	66.6	• Burning pain in joints. • Pain from least motion. • Worse at night, esp. after midnight, cold climate, esp. wet, cold air, fanning; amelioration by warm application.
Bryonia 30, 200, 1M	99	86	86.8	• Stitching pain in joints. • Pain and swelling of joints, with tenderness on least touch, not ameliorated by warmth. • Worse at change of climate from cold to warm, warm season, least motion, night on moving; amelioration by lying on affected part, uncovering the part. • Backache worse by turning on bed.

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Table 18: *(Contd.)*

Name of medicines and potency	No. of patients			Reliable indications
	Prescribed to	Found useful in	Percentage %	
Calc. carb. 30, 200, 1M, 10M	115	92	80	• Osteoarthritis in obese persons. • OA of knee joint with cracking sound in joint. • OA of right shoulder joint. • Worse on squatting, rising from sitting, cold wet climate, standing on damp floor; better by warmth and warm application.
Calc. fluor. 200	19	15	78.9	• OA of knee joint with deformity. • OA of DIP joint with painful Heberden's nodes. • Cracking sound in knee joint. • Worse at first motion; better by continued motion, warm application.
Causticum 30, 200, 1M	10	8	80	• Tearing and burning pain in joints • Pain with weakness of lower limbs. • Cracking in knee joints • OA of knee with tendency to fall. • Worse in cold dry weather; better in wet weather, warmth of bed.
Chamomilla 200	8	8	100	• OA of elbow joint, worse by lifting weight and pronation of forearm.
Graphites 200, 1M	19	15	79	• OA in persons who are obese, dark and of robust constitution. • Chilly patient. • OA during climacteric period in dark, obese women. • Great aversion to salt, sweets and fish. • Worse in cold climate; better by warm application. • Constipation is an associated feature.
Kali carb. 30, 200, 1M, 0/3	8	5	62.5	• OA of hips and lumbar joints. • Pain radiating from back to thigh, from hip to knee. • Pain in back with weakness of lower limbs. • Worse in cold weather, lying on painful side; better by pressure, lying on back, walking slowly.
Lycopodium 30, 200, 1M, 10M, 0/3, 0/6	193	168	87	• Affects mostly shoulder, elbow, knee, right ankle, left hip, cervical and lumbar joints. • Worse at night, beginning to move, first motion, after exertion, cold climate and external warmth. • OA of right shoulder, worse on raising arm; better by lying on rt. side. • Obese constitution with great flatulence. • Hot patient. • Desires warm foods and drinks.

Table 18: (Contd.)

Name of medicines and potency	No. of patients			Reliable indications
	Prescribed to	Found useful in	Percentage %	
Medorrhinum 30, 200, 1M	36	21	58.3	• OA of inter-phalangeal and other small joints, left ankle joint and left shoulder joint. • Pain burning in nature. • Worse during daytime, warm and winter seasons, on beginning to move; better by cold application, in rainy season, by continued motion. • Hot patient.
Nat. mur. 30, 200, 1M	18	11	61.1	• OA of lumbar joints, better by lying on back, on something hard.
Phosphorus 30, 200, 1M	7	6	85.7	• OA of lumbar joints • Burning pain in back. • Pain in cervical joints with numbness of hands. • Worse on holding things in hands; better by rubbing.
Pulsatilla 30, 200, 1M, 10M	31	26	83.8	• OA of large joints especially knees and ankles. • Shifting type of pain. • Pain is more at night with chilliness. • Worse on beginning to move, warmth, letting limbs down; better by cold application, open air. • Hot patient. • Menses delayed.
Rhus tox. 30, 200, 1M, 10 M	300	279	93	• Large and weight bearing joints are affected mostly. • Pain is more at night and at rest. • Aching pain and lame sensation, cannot keep limbs in one position • Worse on beginning to move, rest, after exertion, rainy season, cloudy weather, cold bath, cold air; better during continued motion, pressure, change of position, warm application, covering. • Backache better by lying on back. • Very chilly patient.
Sulphur 30, 200, 1M, 10M	119	83	69.7	• OA of left shoulder, left knee, left hip and lumbar joints. • Pain in lumbar joints worse on stooping, rising from stooping. • Worse on rising from seat; straightening up difficult; stoops while walking for sometime when rising from seat. • Worse at night, worse in cold climate; better in warm climate. • Burning sensation in palms and soles, better in open air. • Hot patient, desires cold foods and drinks.

secondary osteoarthritis, and the primary type had both localized and generalized types of arthropathy. Among enrolled patients, 90% belonged to primary OA. In these patients heredity, obesity, overuse of joints, hyper mobility etc. were found responsible for the onset/continuation of the disease process (Table 7). This is consistent with the findings of others showing obesity as one of the most important predisposing factors for developing osteoarthritis[13-20].

There are a number of other studies which found that overuse of joints is another important predisposing factor for developing osteoarthritis[20-23]. The data of the present study adds support to this finding (Table 8).

Another finding of the study was that out of total patients enrolled, knee was the most frequently affected joint (961 patients, 72%) followed by lumbar and shoulder joints (Table12). This is in consonance with the information given in the text books of Practice of Medicine[2].

Results show that 1007 patients (95%) improved in different degrees (378 had mild improvement, 325 moderate improvement and 304 marked improvement) and 304 patients with marked improvement had no recurrence of the complaints during the period of study. It was also observe that only 40 patients did not show any improvement and two patients worsened with homoeopathic treatment. Since no analgesics were used during the course of the study, it was assumed that the medicines administered could arrest the disease process to a considerable degree.

A group of medicines emerged out of this study which were found to be useful in managing osteoarthritis. These were *Bryonia, Calc. carb., Lyco., Rhus tox.* and *Sulphur.* These medicines were also seen to be useful in a few earlier studies[3-6].

The most reliable indications of the medicines found useful were also deduced in this study which is mentioned in Table 18. Potencies ranging from 30 to 10M in centesimal scale were used but the most useful potencies were 30 C and 200 C. The major objectives of the long term observational study were achieved. However, the other objectives, which included relationship between different medicines and their frequency of administration, could not be deduced.

In addition to symptomatic improvement, a few patients (49 out of 1007 patients) had shown marginal

reduction in osteophytes after continuous treatment with homoeopathic medicines. It was also notable that in majority of the patients no further worsening of the condition was seen after the treatment.

Conclusion

The results indicate a positive role of homoeopathic medicines in the treatment of osteoarthritis. An appropriately designed trial with comparative clinical scores at baseline and at the end of the study, with inclusion of all required laboratory parameters, radiological investigations, inclusion of international pain scales and Quality of Life scale (QOL), are essential for evidence based study. These scales are essential because there is often great disparity between the severity of radiographic findings, and functional ability in OA. Over the age of 40, more than 90% people have some radiographic changes in weight bearing joints, but only 30% are symptomatic.

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