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Available Online At: <http://valleyinternational.net/index.php/our-jou/ijmsci>**A Clinical Study Of Amritadi Kashayaand Ardhamatrika Basti In The Management Ofvata-Raktaw.S.R. Gout.**

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**ABSTRACT:**

*Vatarakta is a disease where both Vata and Rakta have complex effects on joints. It starts from greater toe and then spreads to other joints of the body. On the basis of etiological factors, symptoms and chronicity it may be correlated with Gout. A randomized open clinical trial on 45 uncomplicated patients of Vatarakta was conducted. The patients were allotted in three groups, each having 15 patients. In Group A, Amritadi Kashayawas given orally with castor oil twice a day. In Group B patients were administered DashmulaKala Basti(enema)in which NiruhaBasti with DashmulaKwathaand AnuvasanaBasti with Mahanarayana Taila was done. In Group C, combination of both the therapies was given.Total duration of therapy was sixteen days in each group. Statistical analysis was done to assess the effect of therapy. Though all the three groups have shown statistically highly significant results on signs and symptoms of disease but on the basis of percentage relief, Group C was comparatively better than other two groups. Thus with the preliminary data of this work it can be said that Amritadi Kashaya and Ardhamatrika Bastiwhen used in combination can be a good alternative treatment modality in the patients suffering from Vatarakta.*

**Key words-** Vatarakta, Gout,AmritadiKashaya, ArdhamatrikaBasti, AnuvasanaBasti,Niruha Basti.

**INTRODUCTION:**

According to Ayurveda the disease Vataraktais produced when there is vitiation of

*Vata Dosha*and*Rakta Dhatu* (blood). It is explained that when *Rakta Dhatu* gets vitiated due to recurrent trauma and seasonal variation and *Vata Dosha* becomes enraged by frequent use of *Kashaya*(astringent), *katu*(pungent), *Tikta*(bitter), *Alpahara*(scanty diet), *RukshaAhara*(dry food articles), *Abhojana*(abstinence of food) or by regular riding on *Ashva*(horse), *Ushtra*(camel) or *Yana*(vehicle) etc;this agitated *Vata*enters into blood through carrying channels of the body and gets obstructed in its passage by vitiated *Rakta Dhatu*, thus affecting the entire blood and leading to *Vatarakta*<sup>[1]</sup>.Once again *Acharya Charaka* described that *Vata* due to its *Sukshmatva*(subtleness),

*Sarvasaratva*(pervasiveness) properties and *Rakta* due to its *Dravatva*(liquidity), *Saratva* (flowing nature) properties; circulate through the body and blood vessels (*RaktavahaSrotasa*) and get obstructed in *Sandhi*(joints). Due to torsion nature of its course in joints;*Rakta* and *Vata*again get agitated. After localization and in combination with *Pitta Dosha* they cause different types of *Shula*(pain) according to predominance of *Doshas*<sup>[2]</sup>.

*Vatarakta* is an age old common condition prevalent all over the world. On the basis of symptomatology and chronicity of disease,this can be correlated with a similar condition of modern medicine named as Gout. Gout is a clinical syndrome and is a group of metabolic diseases in which clinical manifestation is associated with

tissue deposition of crystals of monosodium urate monohydrate from Hyperuricemiabody fluids<sup>[3]</sup>.Gout encompasses the group of disorders that occur alone or in combination and include-Hyperuricemia,attack of inflammatory arthritis, tophaceous deposition and urolithiasis<sup>[4]</sup>.

Incidence of Gout appears to have increased over in a few decades due to increasing industrialization,urbanization,faulty dietary habits,radiation,drug toxicity and other factors,responsible directly or indirectly for the disease Gout.Hyperuricemia and Gout may result from increased urate production or decreased uric acid excretion or both<sup>[5]</sup>. Various genetic and environmental factors lead to Hyperuricemia and Gout by decreasing the excretion of uric acid or increasing its production. In more than 75% of patients there appears to be a genetically determined defect in fractional urate excretion which results in an inability to increase uric acid excretion in response to a purine load. Increased production of uric acid is at least partly responsible for Hyperuricemia in 20-25% of gouty patients. In the absence of significant renal impairment such patients are hyperexcretors of uric acid. Specific enzyme defectsresulting in an increase in de-novo synthesis, accounts for less than 2% of cases<sup>[6]</sup>.

Over the span of years,the progressive accumulation of urates and recurrent attack of inflammation leads to chronic destructive arthritis<sup>[7]</sup>. If the chronic condition is not treated

properly the deformity of joints and cartilages cripples a person throughout his life. As far as management of the disease is concerned, there is lack of effective and permanent cure. Options for acute treatment include NSAIDs (Non-steroidal anti-inflammatory drugs), Colchicine's and Steroids<sup>[8]</sup>. NSAIDs are effective but on long term use they cause gastrointestinal bleeding, renal failure and heart failure<sup>[9]</sup>. Colchicine is an alternative for those unable to tolerate NSAIDs, but at high doses side effects (primarily gastrointestinal upset) limit its usage<sup>[10]</sup>. Corticosteroids also have their own side effects. The temporary relief is provided by these drugs but these are too toxic to be used for a long time. Taking these facts into consideration this study was conducted to find out an alternative treatment modality for the disease. *Samshodhana Chikitsa* (Purification procedures) of *Vatarakta* has been described in most of classics. *Acharya Charaka* has described *Basti* (A type of *Samshodhana Chikitsa*) as the best treatment for *Vatarakta*. He has quoted that there is no such effective treatment of *Vatarakta* equal to *Basti*<sup>[11]</sup>. So a *Basti* preparation (*Ardhamatrika Basti*) described by *Acharya Chakrapani datta* was taken in the study<sup>[12]</sup>. *Samshamana Chikitsa* (Internal medication) helps to bring about homeostasis by keeping *Tridoshas* at *Samya Avastha* (Normal stage). *Amritadi Kashaya* (decoction) as told by *Acharya Sharangdhara*, as a definite treatment of

*Vatarakta* was taken for internal medication in this study<sup>[13]</sup>.

#### AIM AND OBJECTIVE:

To evaluate the efficacy of *Amritadi Kashaya* and *Ardhamatrika Basti* in the management of *Vatarakta* w.s.r. Gout.

#### MATERIAL AND METHODS:

On the basis of clinical examination and laboratory investigations as described in classics, diagnosed patients of *Vatarakta* /Gout were selected in the study irrespective of their sex, caste and religion from OPD and IPD of Rishikul State Ayurvedic college Haridwar, Uttarakhand.

#### INCLUSION CRITERIA:

1. Patients having elevated serum uric acid level >6.8mg/dl
2. Patients having classical symptoms of *Vatarakta*.
3. Patients between age group of 20-60 years

#### EXCLUSION CRITERIA:

1. Patients with age < 20 and > 60 years.
2. Patients having complications.
3. Patients having any other systemic illness.
4. Patients taking allopathic medicine for long time.

#### PLAN OF STUDY:

The whole study was divided into:

- **CONCEPTUAL STUDY**- Detailed study of available description on *Vatarakta* was

studied from various sources of *Ayurveda* and modern medical science.

- **CLINICAL STUDY-** It was divided into three phases-

**I DIAGNOSTIC PHASE-** Patients were diagnosed on the basis of classical symptomatology and laboratory examinations. Following laboratory investigations and radiological findings were carried out to assess general condition of patients and to exclude any other systemic disorder.

Laboratory Investigations-

Hematological-Hb, TLC, DLC, ESR, GBP

Biochemical- Serum uric acid

Radiological Examination-X-ray of affected joint in AP and Lateral view.

**II INTERVENTIONAL PHASE-**

**GROUPING:**

Total 45 patients were divided into three groups of 15 patients each-

Group A- Luke warm *Amritadi Kashaya* 80 ml was given orally twice a day, empty stomach with 10 ml castor oil, for 16 days.

Group B- *Ardhamatrika Basti* as per *Kala Basti* schedule (16 days duration), in which, in the beginning one *Anuvasana Basti* and at the end three *Anuvasana Basti* were given, while in between 6 *Anuvasana Basti* and 6 *Niruha Basti* were given alternatively. For *Niruha Basti* 480 ml prepared *Dashmula Kwatha* was given empty

stomach after proper digestion of meal taken in the previous night had taken place, at about 8 to 9 am in the morning. For *Anuvasana Basti* 100 ml *Mahanarayana Taila* was given after meal at about 10 am-12 pm.

Group C- *Amritadi Kashaya* and *Ardhamatrika Basti* both were given in this group for total duration of 16 days.

**PREPARATION OF AMRITADIKASHAYA<sup>[14]</sup>.**

- Fresh *Panchanga* (Roots, barks, leaves, stem, seeds/flowers) of *Amrita*, *Eranda* and *Vasa* were collected, washed with tap water and dried.
- After drying all were crushed and powdered (*Yavakuta*).
- One *Pala* of *Yavakuta* powder was heated daily in 16 times of water in an earthen pot, over a mild fire till the liquid reduced to 1/8 of original quantity. This liquid is known as decoction/ *Kashaya*.

**PREPARATION OF BASTI-**

For *Niruha Basti* a homogenous emulsion measuring 480 ml was prepared containing *Madhu* (Honey) 60 gm, *Saindhavlavana* 5 gm, *Tila Taila* 90 ml, *kalka of Madana Phala* and *Satapushpa* 25 gm; and *Dashmula Kwatha* 300 ml.

For *Anuvasana Basti* 100 ml *Mahanarayana Taila* was used<sup>[15]</sup>.

**III ASSESSMENT PHASE-**

**STATISTICAL ANALYSIS –**

The data gathered was subjected to statistical analysis in terms of Mean (X), Standard Deviation (S.D.) and Standard Error (S.E.) and Paired t<sup>''</sup> test was carried out and results obtained were interpreted as-

Highly Not significant-  $P > 0.05$

Not significant –  $P < 0.05$

Significant -  $P < 0.01$

Highly Significant -  $P < 0.001$

#### ASSESSMENT CRITERIA:(TABLE-1)

The assessment was done on the basis of relief found in the signs and symptoms of the disease adopting scoring, depending upon their severity.

#### ASSESSMENT OF OVERALL EFFECT:

- **Cured** : 100% relief in clinical features of patient.
- **Marked Improvement** : 76-99% relief in the clinical features of patient.
- **Moderate Improvement** : 51 - 75% relief in the clinical features of patient.
- **Mild Improvement** : 26-50% relief in the clinical features of patient.
- **Unchanged** : Up to 25% relief in the clinical features of patient.

#### OBSERVATION: (TABLE -2)

Maximum (33.33%)patients were between age groups of 31-40 and 41-50 years both. Maximum number of patients were males (55.5%). muslims (44.44%), businessmen

(35.55%), belonging to urban area (80%). Maximum patients were addicted to tea/coffee (84.44%) and alcohol (42.22%). 22.22% of patients were having previous history of Gout. Maximum patients were having 6 months duration of illness (44.44%), acute onset of illness (57.77%). Maximum patients were having *Vata-PittaPrakriti* (57.77%). Maximum patients were having sedentary life style (65.22%). Maximum patients were having *Vishamagni*(66.67%), *KrooraKoshtha* (55.55%). Maximum patients were having *Vatarakta* in *VasantRitu* (66.67%). Maximum patients presented with involvement of knee joint (93.33%) followed by metatarsophallyngeal joint (91.1%), ankle joint(73.33%),metacarpophallyngeal joint (33.3%).

#### RESULTS-

**GROUP A (TABLE-3)**-Highly significant results ( $P < 0.001$ ) were found in pain in joints, swelling, stiffness of joints, itching, burning and tenderness. Significant results ( $P < 0.01$ ) were found in redness and excessive thirst. Highly nonsignificant results ( $P > 0.05$ ) were found in pricking sensation and discoloration of skin.

**GROUP B (TABLE-4)**-Highly significant results ( $P < 0.001$ ) were found in pain in joints, swelling, stiffness of joints, redness, itching, burning, pricking sensation and tenderness. Significant results ( $P < 0.01$ ) were found in discoloration of

skin. No significant results ( $P < 0.05$ ) were found in excessive thirst.

**GROUP C (TABLE-5)**-Highly significant results ( $P < 0.001$ ) were found in pain in joints, swelling, stiffness of joints, redness, itching, burning and tenderness. Significant results ( $P < 0.01$ ) were found in pricking sensation and discoloration of skin. No significant results ( $P < 0.05$ ) were found in excessive thirst.

**ON COMPARISON (TABLE-6)** -It was observed that Group A showed maximum improvement in excessive thirst (69.23%) in comparison to other groups. Group B showed maximum improvement in redness (88.57%) in comparison to other groups. Group C showed maximum improvement in joint pain (66.75%), swelling (87.50%), itching (94.28%), discoloration of skin (43.47%), tenderness (91.48%), stiffness of joints (100%), burning (90.32%) and pricking sensation (70.58%).

**EFFECT OF THERAPY ON LABORATORY INVESTIGATIONS (SERUM URIC ACID) (TABLE-7)**-

Group A showed significant improvement ( $P < 0.01$ ) in serum uric acid level while Group B and C showed highly significant improvements ( $P < 0.001$ ) in its level.

**OVERALL EFFECT OF THERAPY (TABLE-8)**-Out of 15 patients in Group A, 04 patients (26.75%) were moderately improved, 07 (46.75%) patients showed mild improvement while 04 patients (26.75%) showed no improvement. In Group B, 07 (46.75%) patients showed moderate

improvement, 08 (53.33%) patients showed mild improvement while no patient was unimproved. In Group C, 11 (73.33%) patients showed moderate improvement, 04 patients (26.75%) showed mild improvement while no patient was unaffected by the treatment. No patient showed marked improvement or complete cure in any of the groups.

#### DISCUSSION-

- Maximum patients were of age group between 31-50 years. This reflects the fact that peak incidence of acute Gout occurs between 30 and 50 years of age<sup>[16]</sup>. Maximum patients were from urban area which may be due to urban locality of the hospital.
- Maximum patients were addicted to tea, coffee<sup>[17]</sup> and alcohol<sup>[18]</sup> and having sedentary life style<sup>[19]</sup>. It reflects that these are the risk factors for development of Gout.
- Maximum patients were having duration of disease since 0 to 6 months and acute onset of disease, which shows the severity of the disease that causes patient to consult the physician immediately. Many patients were having past history of Gout, which shows high recurrence rate of disease<sup>[20]</sup>.
- Maximum patients were having *VataPittaPrakriti*, *Vishamagni* and *Kroorakoshtha*. This shows that *Vata* plays an important role in causation of the disease. *Vata* when gets vitiated it obstructs the

passage of blood and ends in development of disease *Vatarakta*.

- Maximum patients were having onset of disease in *VasantRitu* which is a *KaphaPrakopakaKala*. Due to vitiated *Kapha*, there is obstruction of the channels, further causing vitiation of *Vata*. This enraged *Vata* leads to pathogenesis of *Vatarakta* by obstructing the path of affected blood.
- Maximum signs and symptoms- pain in joints, swelling, stiffness in joints, itching, burning and tenderness had shown highly significant improvement in all the three groups but on comparing the percentage improvement it was observed that Group C was more efficacious in relieving signs and symptoms in comparison to Group A and B. On Serum uric acid level also Group C showed maximum percentage improvement. It may be due to the combined effect of *AmritadiKashaya* and *ArdhamatrikaBasti* in Group C.

#### PROBABLE MODE OF ACTION OF AMRITADI KASHAYA (ORALLY)-

The effect of trial drug *Amritadi kashaya* may be due to anti-inflammatory<sup>[21,22]</sup>, activity of *Amrita* which reduces the inflammation and gives symptomatic relief as well as its uricosuric action which excretes excess amounts of Uric Acid from the body<sup>[23]</sup>. *Amrita* also works on the other associated symptoms of the disease like fever<sup>[24]</sup> and stone forming tendencies<sup>[25]</sup>.

*Erandais* having anti-inflammatory and analgesic properties<sup>[26]</sup>. *Vasa*, another ingredient of the decoction is also a good remedy for inflammatory swellings<sup>[27]</sup>. Thus all the ingredients are helpful in relieving symptoms of the disease.

#### PROBABLE MODE OF ACTION OF BASTI KARMA<sup>[28]</sup>

It can be understood in the following ways: (1) By absorption mechanism (2) By system biology concept and (3) By excretory mechanism

##### 1-BY ABSORPTION MECHANISM-

*MahanarayanaTailaAnuvasanaBasti*, after reaching the rectum and colon, causes secretion of bile from gall bladder, which leads to the formation of conjugate micelles which are absorbed through passive diffusion. Especially the middle chain fatty acid present in *Mahanarayana Taila* of *Anuvasana Basti* can get absorbed from colon and large intestine part of gastrointestinal tract (GIT) and break the pathology of disease. The same module of kinetics can be hypothesized for *NiruhaBasti* by *Dashmuladecoction*. Decoction *Basti* gets a very little time maximum 48 minutes to absorb from colon and rectum how so ever these areas have very large surface area and highly vascular needed for absorption. A homogenous emulsion of Honey, *Saindhava*, *SnehaDravya*, *Kalka*, and decoction mixed in remarkable combination after proper churning (break the large and middle chain fatty acid into

small chain fatty acids) is given which facilitates absorption better than a single drug per rectum.

**.2-BY SYSTEM BIOLOGY CONCEPT-**

The latest concept of system biology makes it clearer how *Basti* can act on the organ systems. This theory believes that all the organs are interconnected at molecular level. Any molecular incident is transformed at cellular level, then at tissue level and ultimately at organ level. Thus, the effects of *Basti* on gastrointestinal system will definitely affect another system and help to get the bodily internal homeostasis.

**3-BY EXCRETORY MECHANISM-**

*Niruha Basti* is hyper osmotic solution which causes movement of solvent from cells of colon to the lumen containing *Basti Dravya* facilitates the absorption of endotoxin and produce detoxification during elimination.

**CONCLUSION-**

This study shows that *Vatarakta* is a disease characterized by pain, burning, swelling, and

itching at particular site of the joints especially in meta-tarso-phalangeal joint and knee joints which is also described in modern literature. Though all the three groups have shown statistically highly significant results on signs and symptoms of disease but on the basis of percentage relief, Group C in which *AmritadiKashaya* and *ArdhamatrikaBasti* both were given was comparatively better than Group A and Group B wherein *AmritadiKashaya* and *ArdhamatrikaBasti* were given alone. Thus with the preliminary data of this work it can be said that *Amritadi KasayaandArdhamatrika Basti*;having an additive effect of both treatment modalities; help in relieving signs and symptoms of disease and improving serum uric acid level more effectively. It can be a good alternative treatment modality in the patients suffering from *Vattrakta*. As the sample size was very small in this study, there is scope for further study with large sample size.

**TABLE 1- GRADING SYSTEM OF CLINICAL FEATURES OF VATARAKTA-**

|   |   |
|---|---|
| <b><i>Sandhi Shula</i> (Joint Pain)</b>               | Grade 0- No Pain<br>Grade I- Mild Pain<br>Grade II- Pain on movement and relieved at rest<br>Grade III- Constant pain<br>Grade IV- Severe Pain disturbing sleep |
| <b><i>SarukaSandhiShotha</i> (Swelling with pain)</b> | Grade 0- No swelling of joint<br>Grade I- Mild swelling of joint<br>Grade II- Moderate swelling   |



|  |  |
|--|--|
|  | Grade III- Severe swelling with loss of movement<br>Grade IV- Acute swelling   |
| <b>Raga (Redness of Joints)</b>                          | Grade 0- No redness<br>Grade I- Mild redness<br>Grade II- Moderate redness<br>Grade III- Severe redness (Discoloration with copper)<br>Grade IV- Very severe redness (Discoloration with blackish copper)  |
| <b>Kandu (Itching)</b>                                   | Grade 0- No localized itching<br>Grade I- Mild localized itching<br>Grade II- Moderate localized itching<br>Grade III- Severe localized itching (Itching with discoloration)<br>Grade IV- Very severe localized itching (Desquamation of overlying skin) |
| <b>DhamanyanguliSandhiSamkocha (Stiffness of Joints)</b> | Grade 0- No stiffness<br>Grade I- Morning stiffness<br>Grade II- Stiffness off and on throughout the day<br>Grade III- Persistent stiffness of Mild/moderate degree<br>Grade IV- Persistent stiffness of severe degree                                   |
| <b>Vidaha (Burning sensation)</b>                        | Grade 0- No Burning sensation<br>Grade I- Mild Burning sensation<br>Grade II- Moderate Burning sensation<br>Grade III- Severe Burning sensation<br>Grade IV- Very severe Burning sensation   |
| <b>Toda (Pricking sensation)</b>                         | Grade 0- No Pricking sensation<br>Grade I- Mild Pricking sensation<br>Grade II- Moderate Pricking sensation<br>Grade III- Severe Pricking sensation  |

|  |   |
|--|---|
|  | Grade IV- Very severe Pricking sensation  |
| <b>Trishnadhikya (Excessive thirst)</b>      | Grade 0- Normal thirst<br>Grade I- Mild thirst<br>Grade II- Moderate thirst<br>Grade III- Severe thirst<br>Grade IV- Very severe thirst   |
| <b>Tvakvaivarnya (Discoloration of Skin)</b> | Grade 0- No Discoloration of Skin<br>Grade I- Mild Discoloration of Skin<br>Grade II- Moderate Discoloration of Skin(Shiny overlying skin on area)<br>Grade III- Severe Discoloration of Skin(Coppery discoloration on area)<br>Grade IV- Very Severe Discoloration of Skin |
| <b>Sparshanasahishnuta (Tenderness)</b>      | Grade 0- No tenderness<br>Grade I- Patient says joint is tender<br>Grade II- Patient winces<br>Grade III- Patient winces and withdraws the affected part<br>Grade IV- Patient does not allow the joint to be touched  |

**TABLE 2-GENERAL OBSERVATION WISE DISTRIBUTION OF TOTAL 45 PATIENTS-**

| S. No. | Observation        | Total number of Patients | Percentage |
|--------|--------------------|--------------------------|------------|
| 1      | Age group (31-40)  | 14                       | 33.33%     |
| 2      | Age group (41-50)  | 14                       | 33.33%     |
| 3      | Sex (Males)        | 25                       | 55.50%     |
| 4      | Religion (Muslims) | 20                       | 44.44%     |

|    |                                      |    |        |
|----|--------------------------------------|----|--------|
| 5  | Occupation (Business man)            | 16 | 35.55% |
| 6  | Residential Area (Urban)             | 36 | 80%    |
| 7  | Addiction (Tea/coffee)               | 38 | 84.44% |
| 8  | Addiction (Alcohol)                  | 28 | 42.22% |
| 9  | Past History of Gout                 | 10 | 22.22% |
| 10 | Chronicity of Illness<br>(0-6months) | 20 | 44.44% |
| 11 | Onset of Disease (Acute)             | 26 | 57.77% |
| 12 | <i>Prakriti (VataPittaja)</i>        | 26 | 57.77% |
| 13 | Life Style (Sedentary)               | 28 | 65.22% |
| 14 | <i>Vishamagni</i>                    | 30 | 66.67% |
| 15 | <i>KrooraKoshtha</i>                 | 25 | 55.55% |
| 16 | <i>Ritu(VasantRitu)</i>              | 30 | 66.67% |

**TABLE 3-EFFECT OF AMRITADI KASHAYA ON CLINICAL FEATURES OF GROUP A (N=15)**

| Clinical Features  | Mean score |            | Diff       | %of diff./ Relief | Paired 't' test |            |            |        | Remarks |
|--|------------|------------|------------|-------------------|-----------------|------------|------------|--------|---------|
|  | BT         | AT         |            |                   | S.D.            | S.E. M.    | t          | P      |         |
| <i>Sandhishula</i> (Pain in joints)                      | 2.0        | 1.2        | 0.80       | 40%               | 0.67<br>61      | 0.174<br>6 | 4.58<br>26 | <0.001 | HS      |
| <i>SarukaShohta</i> (Swelling with pain)                 | 1.4        | 0.6        | 0.80       | 57.14%            | 0.56<br>06      | 0.144<br>7 | 5.52<br>68 | <0.001 | HS      |
| <i>Raga</i> (Redness)                                    | 0.86<br>67 | 0.33<br>33 | 0.53<br>33 | 61.53%            | 0.63<br>99      | 0.165<br>2 | 3.22<br>78 | <0.01  | S       |
| <i>Kandu</i> (Itching)                                   | 1.6        | 0.60       | 0.93<br>33 | 58.33%            | 0.59<br>36      | 0.153<br>3 | 6.08<br>94 | <0.001 | HS      |
| <i>DhamanyanguliSandhiSamkocha</i> (Stiffness of joints) | 2.33<br>33 | 0.93<br>33 | 1.40       | 60%               | 0.50<br>71      | 0.130<br>9 | 10.6<br>93 | <0.001 | HS      |

|   |            |            |            |        |            |            |            |        |     |
|---|------------|------------|------------|--------|------------|------------|------------|--------|-----|
| <i>Vidaha</i> (Burning)                       | 2.06<br>67 | 0.46<br>67 | 1.4        | 67.74% | 0.63<br>25 | 0.163<br>3 | 8.57<br>32 | <0.001 | HS  |
| <i>Toda</i> (Pricking sensation)              | 0.8        | 0.53<br>33 | 0.2        | 25%    | 0.41<br>4  | 0.106<br>9 | 1.87<br>08 | >0.05  | HNS |
| <i>Trishnadhikya</i> (Excessive thirst)       | 8.66<br>67 | 0.26<br>67 | 0.6        | 69.23% | 0.73<br>68 | 0.190<br>2 | 3.15<br>39 | <0.01  | S   |
| <i>Tvakavaivarnya</i> (Discoloration of skin) | 0.53<br>33 | 0.46<br>67 | 0.06<br>67 | 12.5%  | 0.25<br>82 | 0.066<br>7 | 1          | >0.05  | HNS |
| <i>Sparshanasahishnuta</i> (Tenderness)       | 1.93<br>33 | 0.73<br>33 | 1.2        | 62.06% | 0.41<br>4  | 0.106<br>9 | 11.2<br>25 | <0.001 | HS  |

TABLE 4-EFFECT OF *BASTI* THERAPY ON CLINICAL FEATURES OF GROUP B (N=15)

| Clinical Features   | Mean score |            | Diff       | %of diff./ Relief | Paired 't' test |            |           |        | Remarks |
|---|------------|------------|------------|-------------------|-----------------|------------|-----------|--------|---------|
|   | BT         | AT         |            |                   | S.D.            | S.E. M.    | t         | P      |         |
| <i>Sandhishula</i> (Pain in joints)                       | 2.86<br>67 | 1          | 1.86<br>67 | 65.11%            | 0.743<br>2      | 0.191      | 9.72<br>7 | <0.001 | HS      |
| <i>SarukaShotha</i> (Swelling with pain)                  | 2.33<br>33 | 0.3<br>333 | 2          | 85.71%            | 1               | 0.258<br>2 | 7.74<br>6 | <0.001 | HS      |
| <i>Raga</i> (Redness)                                     | 2.33<br>33 | 0.2<br>667 | 2.06<br>67 | 88.57%            | 0.883<br>7%     | 0.228      | 9.05<br>7 | <0.001 | HS      |
| <i>Kandu</i> (Itching)                                    | 2          | 0.1<br>333 | 1.86<br>67 | 93.33%            | 1.245<br>9      | 0.321      | 5.80<br>2 | <0.001 | HS      |
| <i>DhamanyanguliSandhi Samkocha</i> (Stiffness of joints) | 3.8        | 0.7<br>143 | 3.14<br>29 | 82.70%            | 0.770<br>3      | 0.205      | 15.2<br>6 | <0.001 | HS      |
| <i>Vidaha</i> (Burning)                                   | 2.13<br>33 | 0.2<br>667 | 1.86<br>67 | 87.50%            | 0.639<br>9      | 0.165      | 11.2<br>9 | <0.001 | HS      |
| <i>Toda</i> (Pricking sensation)                          | 2.26<br>67 | 0.7<br>333 | 1.53<br>33 | 67.64%            | 0.743<br>2      | 0.191      | 7.99<br>0 | <0.001 | HS      |
| <i>Trishnadhikya</i> (Excessive thirst)                   | 0.73<br>33 | 0.4<br>0   | 0.33<br>33 | 63.63%            | 0.833<br>8      | 0.215      | 2.16<br>7 | <0.05  | NS      |
| <i>Tvakavaivarnya</i> (Discoloration of skin)             | 1.2        | 0.7<br>333 | 0.46<br>67 | 38.88%            | 0.516<br>4      | 0.133      | 3.5       | <0.01  | S       |
| <i>Sparshanasahishnuta</i>                                | 3.06       | 0.6        | 2.4        | 78.35%            | 0.985           | 0.254      | 9.43      | <0.001 | HS      |

|              |    |     |  |  |   |  |   |  |  |
|--------------|----|-----|--|--|---|--|---|--|--|
| (Tenderness) | 67 | 667 |  |  | 6 |  | 0 |  |  |
|--------------|----|-----|--|--|---|--|---|--|--|

**TABLE 5-EFFECT OF AMRITADI KASHAYA AND BASTI THERAPY ON CLINICAL FEATURES OF GROUP C (N=15)**

| Clinical Features  | Mean score |            | Diff       | %of diff./ Relief | Paired 't' test |            |            |        | Remarks |
|--|------------|------------|------------|-------------------|-----------------|------------|------------|--------|---------|
|  | BT         | AT         |            |                   | S.D.            | S.E. M.    | t          | P      |         |
| <i>Sandhishula</i> (Pain in joints)                      | 2.8        | 0.93<br>33 | 1.86<br>67 | 66.75%            | 0.74<br>32      | 0.191<br>2 | 9.72<br>73 | <0.001 | HS      |
| <i>SarukaShotha</i> (Swelling with pain)                 | 2.66<br>61 | 0.33<br>33 | 2.33<br>4  | 87.50%            | 0.48<br>8       | 0.126      | 18.5<br>2  | <0.001 | HS      |
| <i>Raga</i> (Redness)                                    | 1.8        | 0.8        | 1.0        | 55.55%            | 0.75<br>59      | 0.195      | 5.12<br>3  | <0.001 | HS      |
| <i>Kandu</i> (Itching)                                   | 2.33<br>33 | 0.13<br>33 | 2.2        | 94.28%            | 1.26<br>49      | 0.326      | 6.73<br>6  | <0.001 | HS      |
| <i>DhamanyanguliSandhiSamkocha</i> (Stiffness of joints) | 2.73<br>33 | 0          | 2.73<br>33 | 100%              | 0.88<br>37      | 0.228<br>% | 11.9<br>7  | <0.001 | HS      |
| <i>Vidaha</i> (Burning)                                  | 2.06<br>67 | 0.2        | 1.86<br>67 | 90.32%            | 0.63<br>99      | 0.165      | 11.2<br>97 | <0.001 | HS      |
| <i>Toda</i> (Pricking sensation)                         | 1.13<br>33 | 0.46<br>67 | 0.8        | 70.58%            | 0.94<br>11      | 0.243      | 3.29<br>2  | <0.01  | S       |
| <i>Trishnadhikya</i> (Excessive thirst)                  | 0.86<br>67 | 0.53<br>33 | 0.33<br>33 | 38.46%            | 0.61<br>72      | 0.159      | 2.09<br>1  | <0.05  | NS      |
| <i>Tvakavaivarnya</i> (Discoloration of skin)            | 1.53<br>33 | 0.86<br>67 | 0.66<br>67 | 43.47%            | 0.81<br>65      | 0.210      | 3.16<br>2  | <0.01  | S       |
| <i>Sparshanasahishnuta</i> (Tenderness)                  | 3.13<br>33 | 0.26<br>67 | 2.86<br>67 | 91.48%            | 0.91<br>55      | 0.236      | 12.1<br>2  | <0.001 | HS      |

**TABLE 6- COMPARATIVE EFFECT OF THERAPY ON GROUP A, B, C**

| S.No. | Clinical Features                   | % Relief |         |         |
|-------|-------------------------------------|----------|---------|---------|
|       |                                     | Group A  | Group B | Group C |
| 1.    | <i>Sandhishula</i> (Pain in joints) | 40%      | 65.11%  | 66.75%  |

|     |  |        |        |        |
|-----|--|--------|--------|--------|
| 2.  | <i>SarukaShotha</i> (Swelling with pain)                 | 57.14% | 85.71% | 87.5%  |
| 3.  | <i>Raga</i> (Redness)                                    | 61.53% | 88.57% | 55.55% |
| 4.  | <i>Kandu</i> (Itching)                                   | 58.33% | 93.33% | 94.28% |
| 5.  | <i>DhamanyanguliSandhiSamkocha</i> (Stiffness of joints) | 60%    | 82.70% | 100%   |
| 6.  | <i>Vidaha</i> (Burning)                                  | 67.74% | 87.5%  | 90.32% |
| 7.  | <i>Toda</i> (Pricking pain)                              | 25%    | 67.64% | 70.58% |
| 8.  | <i>Trishnadhikya</i> (Excessive thirst)                  | 69.23% | 63.63% | 38.46% |
| 9.  | <i>Tvakavaivarnya</i> (Discoloration of skin)            | 12.5%  | 38.88% | 43.47% |
| 10. | <i>Sparshanasahishnuta</i> (Tenderness)                  | 62.06% | 78.35% | 91.48% |

TABLE 7-EFFECT OF THERAPY ON SERUM URIC ACID LEVELS IN DIFFERENT GROUPS

| Groups  | Mean score |        | Diff   | %of diff./ Relief | Paired 't' test |        |        |        | Remarks |
|---------|------------|--------|--------|-------------------|-----------------|--------|--------|--------|---------|
|         | BT         | AT     |        |                   | S.D.            | S.E.M. | t      | P      |         |
| Group A | 7.400      | 5.7467 | 1.6533 | 22.34%            | 1.6809          | 0.434  | 3.8094 | <0.01  | S       |
| Group B | 8.680      | 5.3733 | 3.3067 | 38.09%            | 1.2652          | 0.3267 | 10.122 | <0.001 | HS      |
| Group C | 8.840      | 5.0000 | 3.840  | 43.43%            | 1.0702          | 0.2763 | 13.896 | <0.001 | HS      |

TABLE-8-OVERALL EFFECT OF THERAPY-

| Sr. No | Group | Cured      |       | Marked Improvement |       | Moderate Improvement |        | Mild Improvement |        | No Improvement |        |
|--------|-------|------------|-------|--------------------|-------|----------------------|--------|------------------|--------|----------------|--------|
|        |       | No of Pts. | %     | No. of Pts.        | %     | No. of Pts.          | %      | No. of Pts.      | %      | No. of Pts.    | %      |
| 1      | A     | 00         | 0.00% | 00                 | 0.00% | 04                   | 26.75% | 07               | 46.75% | 04             | 26.75% |
| 2      | B     | 00         | 0.00% | 00                 | 0.00% | 07                   | 46.75% | 08               | 53.33% | 00             | 0.00%  |
| 3      | C     | 00         | 0.00% | 00                 | 0.00% | 11                   | 73.33% | 04               | 26.75% | 00             | 0.00%  |

References-

[1]Charaka samhita, Vidyotani Hindi commentary,by Pt. Kashinathshashtri and Dr. GorakhnathChaturvedi,Chikitsasthana, Vatashonita Chikitsa Adhyaya 29/11. P820. ChaukambhaBharti Academy; Varanasi ,Reprint 2012

[2] Charaka samhita, Vidyotani Hindi commentary, by Pt. Kashinathshashtri and Dr.

GorakhnathChaturvedi,Chikitsasthana, Vatashonita Chikitsa Adhyaya 29/11. P821. ChaukambhaBharti Academy; Varanasi ,Reprint 2012

[3] Weatherall D.J., Ledigham, J.G and Warell ,D.A- Oxford text book of Medicine, Vol-I, Section 1-2 ,Disorders of purine metabolism, Page 9,123, 2nd Edition year 1987,ELBS oxford university press

[4] [http://www.medscape.com/viewarticle/448599\\_3](http://www.medscape.com/viewarticle/448599_3) (Last cited 09/06/2015)

[5] <http://themedicalbiochemistrypage.org/gout.php> (Last cited 08/06/2015)

[6] <http://www.score95.com/blog/blog/usmle-gout-2/> (Last cited 08/06/2015)

[7] Robbins L. Stanley Kumar Vinay- Basic Pathology-Genetic Diseases Gout P.No-98 IV edition 1997,W.B. Saunders company Philadelphia London Toronto Sydney ,Tokyo Hong-Kong

[8] Chen LX, Schumacher HR (October 2008). "Gout: an evidence-based review". *J ClinRheumatol*14 (5 Suppl): S55–62

[9] Winzenberg T, Buchbinder R (2009). "Cochrane Musculoskeletal Group review: acute gout. Steroids or NSAIDs? Let this overview from the Cochrane Group help you decide what's

best for your patient". *J FamPract*58 (7): E1–4. PMID 19607767.

[10] Information for Healthcare Professionals, New safety Information for Colchicine (Marketed as Colcrys)” U. S. Food and Drug Administration- <http://en.wikipedia.org/wiki/Gout#Lifestyle> (Last cited 08/06/2015)

[11] Charaka samhita, Vidyotani Hindi commentary, by Pt. Kashinathshashtri and Dr. GorakhnathChaturvedi,Chikitsasthana, Vatashonita Chikitsa Adhyaya 29/88. P 831.ChaukambhaBharti Academy; Varanasi ,Reprint 2012

[12] Chakradatta of ShriChakraPanidatta by Dr. IndradevaTripathi, edited by Prof. RamnathDwivedy, NiruhaAdhikaar 73/23-26 P455, Chaukhambha Sanskrit Bhawan, Reprint 2007

[13] Sharangdhara Samhita,”Jiwanprada“ hindi commentary by Dr. Smt. ShailajaSrivastava ,MadhyamKhanda chapter 2/136,P155. ChaukhambhaOrientalia, Varanasi, Reprint 2009

[14] Sharangdhara Samhita,”Jiwanprada“ hindi commentary by Dr. Smt. ShailajaSrivastava ,MadhyamKhanda chapter 2/1,2, P135. ChaukhambhaOrientalia, Varanasi, Reprint 2009

[15] Sharangdhara Samhita,”Jiwanprada“ hindi commentary by Dr. Smt. ShailajaSrivastava ,MadhyamKhanda chapter 9/101-111, P229. ChaukhambhaOrientalia, Varanasi, Reprint 2009

[16] <http://www.aafp.org/afp/1999/0215/p925.html> (Last cited 08/06/2015)

[17] <http://en.wikipedia.org/wiki/Gout#Lifestyle-HakAE,Choi> HK(March 2008) “Lifestyle and gout” *CurropinRheumatol* 20(2):179-86

[18] <http://en.wikipedia.org/wiki/Gout#Lifestyle-Terkeltob> R(January 2010) “ Update on gout: new therapeutic strategies and options”Nature Reviews Rheumatology 6(1): 30:8

[19] <http://www.eorthopod.com/gout/topic/139> (Last cited 09/06/2015)

[20] <http://www.nature.com/subjects/gout> (Last cited 10/06/2015)

[21] Jana U, Chattopadhyay RN, Shw BP. Preliminary studies on anti-inflammatory activity of *Zingiberofficinale*Rosc., *Vitexnegundo*Linn. And *Tinosporacordifolia*(Willid) Miers in albino rats.Indian J Pharm 1999; 31: 232-233.

[22] Sharma AK, Singh RH. Screening of anti-inflammatory activity of certain indigenous drugs on carrageen in induced hind paw oedema in rats. Bull Medico Ethenobot Res. 1980; 1(2): 12.

[23] Nayampalli SS, Ainapure SS, Samant BD, Kudtarkar RG, Desai NK, Gupta KC et al. A comparative study of diuretic effects of *Tinosporacordifolia*and hydrochloro-thiazide in rats and a preliminary phase I study in human volunteers. J Post grad Med 1988; 34: 233-236.

[24] Singh SS, Pandey SC, Srivastava S, Gupta VS, Patro B, Ghosh AC. Chemistry and Medicinal properties of *Tinosporacordifolia*(Guduchi). Indian Journal of Pharmacology 2003; 35: 83-91.

[25] Rai M, Gupta SS. Experimental evaluation of *Tinosporacordifolia*(Guduchi) for dissolution of urinary calculi. J Res Ind Med 1967;2(1): 115.

[26] [http://www.ijrpp.com/File\\_Folder/IJRPP\\_14\\_711%20Padma%20laxmikant.pdf](http://www.ijrpp.com/File_Folder/IJRPP_14_711%20Padma%20laxmikant.pdf) (Last cited 08/06/2015)

[27] <http://www.indiamart.com/maddi-pharmaceuticals/ayurvedic-churan.html> (Last cited 07/06/2015)

[28] Gyanendra D. Shuklaet al. / Pharmacodynamic Understanding of *Basti*: A Contemporary Approach- [www.ijpba.info](http://www.ijpba.info) (Last cited 07/06/2015)