International Research Journal of Ayurveda & Yoga
Vol. 6 (4),15-23, April,2023
ISSN: 2581-785X : https://irjay.com/
DOI: **10.47223/IRJAY.2023.6403**

A Comparative Study of *Valuka Sweda* and *Shatapushpadi Lepa* in *Janu Sandhi Shula, Shotha* and *Stabdata* w.s.r *Amavata.*

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Article Info

Article history:
Received on: 04-03-2023
Accepted on: 22-04-2023
Available online: 30-04-2023

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ABSTRACT:

Amavata is disorder affecting the population globally with pain, swelling, stiffness of joints. It can be compared with Rheumatoid arthritis based on similar signs and symptoms, with female and male ratio as 3:1. The prevalence of rheumatoid arthritis in most industrialized countries varies between 0.3% and 1%; In India a rough estimate of 0.5 – 0.75% affliction is observed, with two-thirds of patients having mild-to-moderate disability and less than 10% having severe disability Within 10 years of disease onset, at least 50% of patients in developed countries are unable to hold down a full-time job. In any form of arthritis involving knee joint not only produces physical disability, but also has crippling effect on psychosocial entity of the individual. So knee joint being an important locomotory and weight bearing joint, deserves special attention in prevention and management strategies for rheumatic diseases. Our Ayurvedic literatures have wealth of resource information regarding the measures preventing the complication and treatment of this disease. Among them are *Valuka sweda and shatapushpadi lepa* mentioned by Yogaratnakara which are said to have important role to play in reduction of *shotha, shula and stabdata* in treatment of *Amavata.* So the knee joint has been specially considered, and effort has been made in this comparative study to evaluate the efficacy of *valuka sweda and shatapushpadi lepa in janu sandhi shula, shotha and stabdata w.s r Amavata.*

Keywords; *Amavata, valuka sweda, shotha*

INTRODUCTION

Amavata is disorder affecting the population globally with pain, swelling, stiffness of joints. It can be compared with Rheumatoid arthritis based on similar signs and symptoms, with female and male ratio as 3:1.[1] The prevalence of rheumatoid arthritis in most industrialized countries varies between 0.3% and 1%; In India a rough estimate of 0.5 – 0.75% affliction is observed, with two-thirds of patients having mild-to-moderate disability and less than 10% having severe disability Within 10 years of disease onset, at least 50% of patients in developed countries are unable

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to hold down a full-time job.[2] Bone And Joint Decade (BJD) 2000-2010" Program which is supported by WHO, states the slogan 'Keep People Moving' in order to improve the quality of life with reduction in morbidity rate due to Rheumatic diseases[3]. And in any form of arthritis involving knee joint not only produces physical disability, but also has crippling effect on psychosocial entity of the individual. So knee joint being an important locomotory and weight bearing joint, deserves special attention in prevention and management strategies for rheumatic diseases. Our Ayurvedic literatures have wealth of resource information regarding the measures for preventing the complication and treatment of this disease. Among them are *Valuka sweda and shatapushpadi lepa* mentioned by Yogaratnakara which are said to have important role to play in reduction of *shotha, shula and stabdata* in treatment of *Amavata.*

AIMS AND OBJECTIVES

1. To Study The Efficacy Of *Valuka Sweda* In *Janu Sandhi Shula, Shotha And Stabdata Of Amavata.*
2. To Study The Efficacy Of *Shatapushpadi Lepa* In *Janu Sandhi Shula, Shotha* And *Stabdata* Of *Amavata.*
3. To Compare The Efficacy Of *Valuka Sweda* And *Shatapushpadi Lepa In Janu Sandhi Shula, Shotha And Stabdata Of Amavata.*

MATERIAL AND METHODS

This was a comparative study where in the efficacy of the *Valuka sweda* was compared with the efficacy of *Shatapushpadi Lepa in Janu Sandhi Shoola Shotha* & *Stabdata* in *Amavata.*

Source Of Data:

The patients attending the OPD and IPD of S.J.I.I.M., Hospital, Bangalore who fulfilled all the inclusion criteria were randomly selected for the study.

Diagnostic Criteria:

Patients presenting with classical signs and symptoms of *amavata* were selected.

1. Pain in knee joints
2. Swelling in knee joints
3. Stiffness in knee joints

Inclusion Criteria:

1. Patients between age 20-50 years
2. Patients with *janusandhi shula, shotha and stabdata due to amavata*

Exclusion criteria:

1. Patients below 20 years and above 50 years. Patients suffering from other systemic diseases like, Diabetes Major cardiac illness, Renal disorders
2. Patients having joint deformities due to *Amavata. Sweda and lepa ayogyas.*

Research Design:

After the diagnosis of *Amavata,* (Rheumatoid arthritis of Knee joint) based on the above parameters, the selected patients were subjected for the Comparative Clinical Trial as follows-

Sample Size And Grouping:

A minimum sample of 30 patients with *Janu Sandhi Shoola, Shotha, & Stabdata* due to *Amavata* were selected for the study, and they were randomly distributed into 2 groups of 15 patients each.

Group A: 15 patients were subjected to *Deepana pachana with vaishwanara churna* for 3 days and *Valukasweda* for 7 days.

Group B: 15 patients were subjected to *Deepana pachana* with *vaishwanara churna* for 3 days and Application of *Shatapushpadi Lepa* for 7 days.

Study Design:

Total Study duration: 10 days

Group A: *Deepana pachana* with *vaishwanara churna* for 3 days and *Valuka sweda* for 7 days was carried out on the affected knee joint, & the patients were assessed after 10 days.

Group B: *Deepana pachana* with *vaishwanara churna* for 3 days and Application of *Shatapushpadi Lepa* for 7 days was carried out over the affected knee joint & assessment was done after 10 days.

Subjective Parameters: TABLE NO 2-5

Criteria For Assessment of Total Response To The Treatment:

The sum point of all the parameters of assessment before and after the treatment was taken into consideration to assess the total effect of the treatment as follows:-

1. Marked improvement - relief of >75%
2. Moderate improvement-51-75% relief
3. Mild improvement-26-50% of relief
4. No Change-0-25% relief

OBSERVATIONS AND RESULT

A Total Of 30 Patients, Meeting the Inclusion Criteria Were Screened & Enrolled for The Study. 15 Patients Were Registered in Group A & 15 Patients Were Registered in Group B. All The Patients Were Examined Before and After the Treatment According To The Case Sheet Format Given In The Annexure. Changes In Both, Subjective and

Objective Parameters Were Captured & Noted.

Age: Out Of 30 Subjects, 43.33% (Maximum) Were in The Age Group Of 31-40 Years, And 30% Were In The Age Group Of 20-30 And 26.66% Were In Age Group Of 41-50 Years.

Sex: Among the 30 subjects registered, majority of the subjects were females (80%) and the rest of the subjects (20%) were males.

Agni- Out of 30 patients 20% were of *Mandagni,* 26.66% were *Tikshnagni,*16.66% were of *Samagni,* and 36.66% were of *Vishamagni.*

Data Related To Disease:

Knees Affected: Out of 30 patients, 9 patients (30%) were suffering from unilateral knee joint involvement & 21 patients (70%) were suffering from bilateral knee joint involvement

Right /Left Knees Affected:

Total of 6 patients (40%) suffered from RA. of right knee while 3 patients (33.33%) suffered from RA. of Left Knee.

Nidana*:* 43.33% of the patient had history of *Viruddha ahara,* 90% of the patients had history of *Viruddha cheshta,* 20% of the patients had *Mandagni* and 10% of the patients had history of *Vyayama after snigdha bhojana.*

RESULTS

Statistical Data Of Results In Both Groups Group A- Table 7

Statistical Data Of Results In Both Groups Group B- Table 8

Analysis Of Statistical Data In Each Parameter Of Both- Table 9

The results within the group were assessed by using paired t test. The mean of pain before treatment and after treatment in group A were 3 and 1 respectively. And in group B it was 3 and 0.73 respectively. Pain was markedly reduced in patients of *valuka sweda*(group A) (t value-5.714 p value-<0.001) and even in *shatapushpadi lepa*(Group B) (t value- 5.27 p value-<0.001). Relief % in group A was 69.9% and in Group B was 75.6%.

Tenderness

The mean of tenderness before and after treatment in group A was 2.66 and 0.93 respectively. And in group B it was 2.66 and 0.73 respectively. Tenderness was markedly reduced in both groups. Group A (t value-6.17 p value-<0.001) ,group B(t value-5.67 p value-<0.001). Relief % in group A was 65.03% and in group B was 72.5%.

Swelling

The mean of Swelling before and after treatment in group A was 2.66 and 0.93 respectively. And in group B it was 2.66 and 0.73 respectively. Swelling was markedly reduced in both groups. Group A (t value-6.17 p value-<0.001) ,group B(t value-5.67 p value-<0.001). Relief % in group A was 65.03% and in group B was 72.5%.

Degree Of Flexion

The mean of Degree of flexion before and after treatment in group A was 2.46 and 0.80 respectively. And in group B it was 2.46 and 0.66 respectively. Degree of flexion was markedly improved in both groups. Group A (t value-6.14 p value-<0.001) ,group B(t value- 5.80p value-<0.001). Relief % in group A was 67.47% and in group B was 73.17%.

Local Temperature

The mean of Local Temperature before and after treatment in group A was 2.53 and 0.93 respectively. And in group B it was 2.53 and 0.80 respectively. Local Temperature was markedly reduced in both groups. Group A (t value-6.40 p value-<0.001) ,group B(t value-6.17 p value-<0.001). Relief % in group A was 63.37% and in group B was 68.37%.

Result Between The Groups

On comparing the results between both the groups, the result difference was statistically not significant. But clinically group B showed better response than group A. Based on the overall response for the treatment it can be concluded that *Shatapushpadi lepa* is found to be more effective in the management of *Janu Sandhi Shoola, Shotha & Stabdata in Amavata* when compared to *Valuka sweda.*

DISCUSSION

Amavata being a *yapya vyadhi*, with the main role of *ama*, is seen to have a crippling effect on individual with pain, swelling, stiffness in joints and other systemic illness and reduced functionality of joints.

The treatment demands and aims towards the *nirameekarana*, relief of symptoms and *shodhana* depending on patients.

For the *samshodhana* to be carried out, the patient must be made fit for that by *deepana paachana* before *snehapana*.

But at the same time its duty of physician to look at and take care of his symptoms till the *deepana pachana* is completed, since the patient will be suffering from un tolerable pain.[4]

So there is definitely the need of some treatment which keeps his pain and other symptomsin tolerable limits till the

treatment is started and completed.

Discussion On Procedure

Purvakarma- Vaishwanara Churna

It is a good *deepana and pachana* drug indicated in *amavata adhikara*. It checks the formation of ama by increasing the *agni* and digests the ama which is already formed. It helps to attain *niramavastha,* and prepare the body environment for further *shodhanadi* treatment

Valuka Sweda In Amavata

Valuka sweda is a dry or *ruksha* type of *sweda* used in *kaphaja* disorders as well as in the disease originated out of *ama,* especially indicated in *Amavata* disease by almost all the authors who have dealt with it. *Valuka* means sand. *valuka sweda* is a process in which the fine white cloth, tied properly as bolus, with sand in it and it is to be warmed and applied over the affected part of the body. According to Charaka, it is a type of *sankara sweda. As it is ruksha* type, since the used material is sand, it comes under „*ruksha sankara sweda*". According to Sushruta it is a type of „*tapa sweda*", wherein the *valuka* will be sufficiently warmed and then applied on the affected part of the body. It is type of „Ekanga sweda".According to Dalhana, the commentator of Sushruta, *valuka sweda may* be included under „*samshamaneeya sweda",* as this *sweda* is used for *pachana kriya* or for the digestion of *sama doshas* and it is dry in nature, it stimulates the *agni (dhatwagni)* and clears the *srotas* from malas. It is a type of „*bahya sweda"* according to *avatantra bheda* of *sweda.*

Lepana Karma-

In *amavata* there is presence of ama in *sharira and sandhis*, due to which *shotha, shula and stabdata* are seen.

And also there is involvement of *utthana dhatus* in early stage of disease and hence *lepa* application may prove helpful. The classification as well as method of application and its utility explained in ayurveda holds good as per modern science. Lepa comes under *bahirparimarjana chikitsa* and is helpful in removing morbid factors locally.

Discussion On Drugs Used

Shatapushpadi Lepa

Contents Of *Shatapushpadi Lepa* (Y.R.Amavata Adhikara)

It has 12 ingredients- *Shatapushpa, vacha, vishwa, Shvadamshtra, Varuna, Punarnava, Sahadeva, Shati, Mundi, Prasarini, Tarkari, and Madanaphala. And is indicated in amavata by yogaratnakara.* Almost of these drugs are *of ushna virya, laghu ruksha guna, amahara, deepana, vatakapha hara* and *shotha shulaghna*. Hence it was taken for the study.

***Vaishwanara Churna* Contents**

It has 5 ingredients- *Manimantha, Ajmoda, Yavani, Nagara and Haritaki.* And is indicated in *Amavata.* Drugs present in *vaishwanara churna are of ushna virya, deepana pachana, ama hara and vata anulomana*. Hence it was taken for the study.

Valuka

Valuka is ruksha in guna , and as a *ruksha sweda* it is indicated in *amavata* by Yogaratnakara. *Valuka* has got good heat holding capacity and is helpful in reduction of *kapha and vata.*

Physiological Effects Of Heat

(Implacable To Both *Valuka Sweda* And*Lepa*)

Application of heat to the tissues results in increased metabolic activity, increased blood flow and stimulation of neural receptors in the skin or tissues and many other indirect effects.

Increased metabolism

The increase in metabolism is greatest in the region where most heat is produced, which is in the superficial tissues. As a result of the increased metabolism there is an increased demand for oxygen and foodstuffs, and an increased output of waste products, including metabolites

Increased blood supply

As a result of increased metabolism, the output of waste products from the cells is increased. These include metabolites, which act on the walls of the capillaries and arterioles causing dilatation of these vessels. In addition, the heat has a direct effect on the blood vessels, causing vasodilatation, particularly in the superficial tissues where the heating is greatest. Stimulation of superficial nerve endings can also cause a reflex dilatation of the arterioles. As a result of vasodilatation there is an increased flow of blood through the area so that the necessary oxygen and nutritive materials are supplied and waste products are removed.

Effects of heating on nerves

Heat appears to produce definite sedative effects. The effect of heat on nerve conduction has still to be thoroughly investigated. Heat has been applied as a counter irritant, which isthe thermal stimulus, may affect the pain sensation as explained by the gate theory of Melzack and Wall.

Indirect effects of heating

1. Muscle tissue – Rise in temperature induces muscle relaxation and increases the efficiency of muscle action, as the increased blood supply ensures the optimum conditions for muscle contraction.
2. General Rise in temperature – As blood passes through the

tissues in which the riseof the temperature has occurred, it becomes heated and carries the heat to other parts of the body, so that if heating is extensive and prolonged a general rise in temperature occur.

3. Fall in blood pressure – If there is generalized vasodilatation the peripheral resistance is reduced, and this causes a fall in blood pressure. Heat reduces the viscosity of the blood, and this also tends to reduce the blood pressure.
4. Increased activity of sweat glands – There is reflex stimulation of the sweat glands in the area exposed to the heat, resulting from the effect of the heat on the sensory nerve endings. As the heated blood circulates throughout the body it affects the centers concerned with regulation of temperature, and there is increased activity of the sweat glands throughout the body.

Lepana Karma

According to Sushruta, when the *Lepa* is applied in *pratiloma gati* i.e. in the opposite direction of the hair follicles, the medicines stays properly (over the site for the long period), enters into the hair follicles and channels of sweat and gets absorbed by the orifices of the *Siras. (Siramukha),* with the help of *bhrajaka pitta.The pachana of amadosha in samashotha* takes place by the properties of the drugs in *Shatapushpadi Lepa*. As there is *Niramikarana* of the doshas from *shotha*. *Srotosanga nivaraana* takes place & morbid factors are reabsorbed into systemic circulation leading to the reduction in swelling. Here in study it is included under *pradeha* of Sushruta classification where ushna and Ghana lepa is to be applied. And the drugs used in this *lepa, shatapushpa etc have vatakapha hara ,deepana pachana and shula, shothagna* properties. When this *lepa* is applied in *pradeha* form *(ushna and Ghana),* it proves to be helpful in reducing *the sandhigata shotha shula and stabdata* by its action on ama. *Lepa* was selected by looking into its wide practical applicability. Though the symptomatic relief may be achieved by these procedures, the general line of treatment for *Amavata* should be followed for reducing the systemic effects of the disease & to avoid the recurrence. Thus both the procedures proved to be effective in reduction of *Shoola, Shotha* and*stabdata,* by their action *on ama.* When compared to *valuka sweda, in lepa, with ushna guna*, there will be *swedana* effectand even the potency of the drug comes in action along with more time of drug contact Hence in the study, lepa has proved more effective than *valuka sweda* in reducing *shotha shula* and *stabdata in janu sandhi* of *amavata* patient.

Hence along with *deepana pachana, swedana and lepa* are the external therapies which even help in *deepana pachana* and even in bringing down the intensity of symptoms, hence giving a symptomatic relief till the *shodhana* is started.

In the course of the treatment it was seen that the patients who had un tolerable pain and other symptoms in knee joint, by undergoing *deepana pachana and lepa or valuka sweda* were definitely able to get symptomatic relief and even had become fit for the further treatments.

These treatments to the knee joint may be beneficial in preventing the further destructionof joint by doing the *niraamikarana* of ama locally and reducing the inflammation.[5]

Amapachana:

By the *ushna, ruksha and the laghu gunas* it does the *pachana of ama*, which is seated in local *sandhies.*[6]

Sandhi shotha and gatra sthabdhata:[7]

Sandhi shotha in Amavata is brought about by accumulation of *kapha dosha and ama*. By *amapachana* property of *valuka sweda,* it does liquification of *ama.* At the same time, it also does *sroto vikasana by its ushna guna* resulting in increased circulation. Liquified ama is reabsorbed into circulation. Hence, there will be reduction of swelling in joints.[8]

Due to increased circulation, ama moves from sandhi into circulation leading to *sthabdata nasha* thereby joint movements come to normal.[9]

Vedanashamana:

As *amapachana* takes place, *margavarodha* also reduces, so movement of the *vata* comes to normal. *Ushna guna of valuka sweda* acts contrary to *sheeta guna of vata* which subsides *vata* to its normalcy. *Vata shamana* in turn results in reduction of pain.[10]

***Sroto shuddhi and laghavata* of body**:

Valuka sweda does the dilatation of *srotas* and production of *sweda*. So the channels of body will be cleared causing *sroto shuddhi* and lightness of the body. Because of above said important properties, *valuka sweda* is specially indicated in *Amavata.*[11]

CONCLUSION

Amavata being a *yapya vyadhi,* with the main role of ama , is seen to have a crippling effect on individual with pain, swelling, stiffness in joints and other systemic illness and reduced functionality of joints. The treatment demands and aims towards the *nirameekarana,* relief of symptoms and *shodhana* depending on patients. For the *samshodhana* to be carried out, the patient must be made fit for that by

deepana paachana before snehapana. But at the same time its duty of physician to look at and take care of his symptoms till the *deepana pachana* is completed, since the patient will be suffering from intolerable pain. So there is definitely the need of some treatment which keeps his pain and other symptoms in tolerable limits till the treatment is started and completed. Hence along with *deepana pachana*, *swedana and lepa* are the external therapies which even help in *deepana pachana* and even in bringing down the intensity of symptoms, hence giving a symptomatic relief till the *shodhan*a is started. In the course of the treatment it was seen that the patients who had intolerable pain and other symptoms in knee joint, by undergoing *deepana pachana and valuka sweda* were definitely able to get symptomatic relief and even had become fit for the further treatments. The conclusions drawn from the present clinical study are as follows: *Amavata* an Auto-immune Arthritis found globally wherein the involvement of knee joints leads to disability of the sufferers in day to day activities hampering the quality of life Apart from the main line of treatment there is absolute necessity of a locally acting *Bahirparimarjana Chikitsa* to reduce the signs of inflammation & to improve the range of movements Here a comparative study of 2 effective *Bahiparimarjana Chikitsa* along with *deepana pachana* being common in both groups was done & found to be effective. Both *Valuka sweda & Shatapushpadi Lepa* showed highly significant improvements in all parameters. In comparison, *Shatapushpadi Lepa* proved to be more effective in improvement of all the parameters. No complications were observed during the study

Acknowledgment- Nil

Conflicts Of Interest- Nil

Source of finance & support – Nil

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How to cite this article: Lakkundi S, Piyush Gupta P, Singh R "A Comparative Study of *Valuka Sweda* and *Shatapushpadi Lepa* in *Janu Sandhi Shula*, *Shotha* and *Stabdata* w.s.r *Amavata*" IRJAY. [online]2023;6(4);15-23. Available from: https://irjay.com
DOI link- https://doi.org/**10.47223/IRJAY.2023.6403**

Table1 TREATMENT PROTOCOL

	GROUP A *(Valuka sweda)*	GROUP B *(Shatapushpadilepa)*
PURVAKARMA	*Amapachana Vaishwanara churna-* Dose-10gms in divided threedoses with warmwater. Duration- 3 days	*Amapachana Vaishwanara churna-* Dose-10gms in divided threedoses with warm water. Duration- 3 days
PRADHANA KARMA	*Valukasweda* for 7 days	Application of *shatapushpadilepa* for 7 days
PASCHAT KARMA	Rest	Removal of lepa after dryingand cleaning part with warm water.

TABLE NO 2 Shows Grading of Pain parameter

No pain	0
Mild pain with slight difficulty in flexion and extension	1
Moderate pain with much difficulty in flexion and extension	2
Severe pain with restricted movements	3

TABLE NO 3 Shows Grading of <u>Swelling</u>

No swelling	0
Mild swelling	1
Moderate swelling	2
Severe swelling	3

TABLE NO 4 Shows Grading of <u>Tenderness</u>

No tenderness	0
Mild tenderness	1
Moderate tenderness	2
Severe tenderness	3

TABLE NO 5 Shows Grading of <u>Degree of Flexion</u>:

Degree of Flexion	Grading
$>135^0$	0
$90\text{-}135^0$	1
$45\text{-}90^0$	2
$0\text{-}45^0$	3

TABLE NO 6 Shows Grading of Local Temperature:

Temp. in degree Fahrenheit	Grading
95-96.8^0 F	0
96.9-98.6 ^{0} F	1
98.7- 100.4^0 F	2
100.5- 102.2^0 F	3

TABLE NO 7 STATISTICAL DATA OF RESULTS IN BOTH GROUPS GROUP A

PARAMETER	BT (MEAN)	AT (MEAN)	MEAN.DIFF	% RELIEF	SD	SE	T-VALUE	P-VALUE	REMARKS
PAIN	3	1	2	69.9%	1.41	0.35	5.714	<0.001	H.S
TENDERNESS	2.66	0.93	1.73	65.03%	1.12	0.28	6.17	<0.001	H.S
SWELLING	2.66	0.93	1.73	65.03%	1.12	0.28	6.17	<0.001	H.S
D.O.F	2.46	0.8	1.66	67.47%	1.046	0.27	6.14	<0.001	H.S
LOCAL TEMP	2.53	0.93	1.60	63.37%	0.97	0.25	6.40	<0.001	H.S

TABLE NO 8 STATISTICAL DATA OF RESULTS IN BOTH GROUPS GROUP B

PARAMETER	BT (MEAN)	AT (MEAN)	MEAN.DIF F	% RELIEF	SD	SE	T- VALUE	P- VALUE	REMARK S
PAIN	3	0.73	2.27	75.6%	1.69	0.43	5.27	<0.001	H.S
TENDERNESS	2.66	0.73	1.93	72.5%	1.33	0.34	5.67	<0.001	H.S
SWELLING	2.66	0.73	1.93	72.5%	1.33	0.34	5.67	<0.001	H.S
D.O.F	2.46	0.66	1.80	73.17 %	1.20	0.31	5.80	<0.001	H.S
LOCAL TEMP	2.53	0.80	1.73	68.37 %	1.12	0.28	6.17	<0.001	H.S

TABLE NO 9 RESULT BETWEEN THE GROUPS

PARAMETER	GROUP A	GROUP B	REMARKS
PAIN	69.9%	75.6%	N.S
SWELLING	65.03%	72.5%	N.S
TENDERNESS	65.03%	72.5%	N.S
DEGREE OF FLEXION	67.47%	73.17%	N.S
LOCAL TEMP	63.37%	68.37%	N.S

Table 10 Shows Results

PARAMETER	GROUP A	REMARKS
PAIN	69.9%	N.S
SWELLING	65.03%	N.S
TENDERNESS	65.03%	N.S
DEGREE OF FLEXION	67.47%	N.S
LOCAL TEMP	63.37%	N.S

GRAPH 1