

PHYSIOLOGY OF PAIN AND ITS MANAGEMENT IN AYURVEDA
W.S.R. TO SUCHIVEDHAN KARMA

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ABSTRACT

Pain is the most common symptom, it is universally accepted as a signal of disease that brings the patient to a physician's attention. It is a sensation where other inputs such as emotional distress or spiritual distress may evoke the same overall feeling as a physical injury.^[1] Any pain either of moderate or higher intensity is accompanied by anxiety. It disturbs the routine life of patient. Patient becomes worried or anxious to get relief from the pain. In textual references of Ayurveda, the symptom pain is closely related to *Shul* or *Vedna*. In this condition, the vitiated humour *Vata* is localized in different regions of body like *Asthi*, *Sandhi*, *Kati*, *Prushtha* and produces pain. When *Vata* gets

vitiated, it dries up the ligaments of the joints and constricts the *Snayu* present there and causes pain at that joint. The *Vedhan Karma* can be done by different instruments out of which *Suchi* is also mentioned by *Sushrut Samhita*. *Suchivedhan* can be considered as modified form of *Siravedha*.

KEYWORDS: Pain, *Suchivedhan Karma*.

INTRODUCTION

Ayurveda is "The Science of Life". It is a science dealing with physiological and pathological status of human body. *Ayurveda* is *Upaveda* of *Atharvaveda*. Originally there are four *Vedas*; *Rigveda*, *Yajurveda*, *Samaveda*, and *Atharvaveda*. These *Vedas* include topics like health, astrology, spiritual business, poetry and ethical living etc.

इह खलु आयुर्वेदं अष्टांगम् उपांगम् अथर्ववेदस्य ।

(सु. सू. १/६)

In *Ayurveda*, there are various methods used for treating different types of pain like shoulder pain, knee joint pain etc. These *Ayurvedic* methods are simple, safe, effective and economically least cost for the patient e.g. *Siravedha*, *Agnikarma*, *Basti*, *Snehana*, *Swedana*, and oral medication. It is very important to reduce pain associated with various disorders while treating the patient by *Ayurvedic* line of treatment. Patient having pain is always restless, that causes obstruction to his daily routine activities. Patient always expect a quick relief to his pain. So, it becomes mandatory to find out some effective methods of treatment to relief pain.

In the modern science, there are various remedies in the form of drugs or injections for relieving pain. These remedies are induced generally NSAIDs and Steroids.^[2] All these medications adversely affect Liver and Kidneys i.e. *Raktavaha* and *Mutravaha srotas*. They need to be taken whenever required and provide only temporary relief from pain. They produce hyperacidity and also peptic ulcer disorder, by irritating gastric mucosa. It also requires regular exercises of joints to prevent over tightening. So, for regular follow ups, patient has to go to physiotherapist, which is time consuming and too costly.

In *Sushrut Samhita*, eight types of *Shashtra Karmas* are explained. The *Vedhan Karma* can be done by different instruments out of which *Suchi* is also mentioned by *Sushrut Samhita*.

In *Ayurveda*, pain (*Vedna*) is due to *Vataprakopa*. *Acharya Charaka* has explained causes of *Vataprakopa* as *Dhatukshaya* and *Margaavrodha*.^[3] Out of *Tridosha*, *Vata* is dominating and controller of the other two *Doshas* i.e. *Pitta* and *Kapha*.^[4]

Suchivedhan can be considered as modified form of *Siravedha*. According to *Acharya Sushruta*, *Siravedha* is called as *Shalyachikitsaardha* means the half part of the *Shalya Chikitsa*.^[5] *Acharya Sushruta* has explained *Vedhan* of specific *Sira* in specific diseases.^[6] *Siravedhan* is done on the *Sira* that are clearly visible. But in case when *Sira* are not clearly visible, *Suchivedhan Karma* can be done.^[7] When *Siravedha* is performed, the most vitiated *Dosha* i.e. *Rakta* is released, similarly on *Suchivedhan* the most vitiated *Dosha* i.e. *Vata* is released.^[8]

Hence, *Suchivedhan* on the maximum tenderness points of joints may release the *Vataavrodha* or vitiated *Vata Dosha* and eventually pain will be reduced instantly. When pain

is reduced, the patient will surely try to make active movements. This instant relief from pain is of no cost and will be as miracle for the patient.

AIMS AND OBJECTIVES

AIM

1. To study physiology of pain in detail.
2. To assess the effect of *Suchivedhan Karma* in the management of Pain.
3. Effect of *Suchivedhan* in joint pain.

OBJECTIVES

1. To evaluate the efficacy of *Suchivedhan* in joint pain.
2. To achieve immediate relief of pain.
3. To evaluate the improvements in the movements of joint.
4. To avoid the adverse effects of modern medicine e.g. steroids and NSAIDs.
5. To reduce the cost of management.

REVIEW OF LITERATURE

PHYSIOLOGY OF PAIN

Pain is a subjective sensation. It occurs when tissues are being damaged and causing the person to remove the pain stimulus. Thus pain is a protective mechanism of the body.

Receptor organs for pain are redistributed throughout the body. The neuroanatomical basis of pain was recognized following identification of spinal nerve roots and the existence of medullary pathways specialized for pain. There is a multi-synaptic pathway system which relays in the reticular formation of the brainstem. Stimulation of these pathways causes perception of pain at the cortical and subcortical levels.^[9]

Stimuli for pain may be thermal, chemical, or electrical accompanied by a combination of other elements like fear, discomfort and autonomic changes.

PROCEDURE REVIEW

SUCHIVEDHANA

In *Sushruta Samhita*, “*Siravyadha Vidhi Adhyaya*” has been explained in which *Vyadhana* of specific *Siras* in specific diseases is mentioned. Actually this chapter is very much confusing. After going through it again and again, one can understand why *Sushruta* has used the word ‘*Vyadha*’.^[10]

The word 'Vyadha' has so many meanings, which can be as follows;

1. To bore a hole to drain
2. To let out entrapped *Vayu*.
3. To let out entrapped circulation in blood vessels
4. To let out fluid in *Jatodaka* and *Mutravriddhi*.
5. To let out pus in *Vridradhi*.

This 'Vyadha' must be done by hollow needle. If the blood vessel is large, the blood can be evacuated. But if the *Sira* is non-visible, it is to be pricked by needle till it bleeds or may not bleed. To understand *Viddha Karma*, we must have the following concepts in our mind. *Sira* always carry all *Doshas* i.e. *Vata*, *Pitta* and *Kapha*, along with *Rakta*.^[11] Physiological and mental functions go well when *Prakruta Vayu* is moving in its own direction. Vitiating *Vayu* moving in *Sira* produces different *Vata Vyadhi*. *Vedana* indicates deranged or vitiating *Vayu* and this is the ideal indication for *Viddha Karma*.^[12] *Siravedha* is broad term used for removal of blood. It could be of any type, Venesection, Leech, Horn, and Gourd, Scarification or even a prick.^[13] In essence, the principle in this procedure is to remove vitiating blood. Another indication for *Siravyadha* is the failure to cure the condition by *Snehana*, *Swedana*, *Lepas* which are mainly used to cure pain.^[14] *Raktamokshana* if performed in correct manner on proper indicated points results in relieving pain and reduction in severity. It also produces a state of well-being. When *Siravedha* is performed, the most vitiating *Dosha* i.e. *Rakta* is released, similarly on *Suchi-Veddha* the most vitiating *Dosha* is released.^[15] A simple puncture also bleeds which is not revealed.^[16]

Interpretation of these results is as follows;

1. It removes the obstruction of blood vessels and establish circulation.
2. It reduces the load of pathogens circulating in blood.
3. It lets out the most vitiating *Dosha* first.

Depth of Vyadha Karma: *Sushruta Samhita* has mentioned properly the level of depth of *Viddha Karma* according to the area where this procedure has to be performed. When it is performed on *Mamsal pradesha*, it is one *Yava*. In case of bone, the hole should be of *Ardha-Yava Matra*. On skin, it is *Ardha-yava Matra* or *Vrihi Matra*. The instrument should be used *Vrihimukhen Yantra* for *Vyadhana* in *Mamsal pradesha*. *Kutharika Yantra* is to be used for *Asthi-Vyadhana*.^[17]

But for *Vyadhan Karma* various instruments can be used as mentioned by *Acharya Sushruta*,^[18]

For *Suchivedhana* we use Insulin needle No. 26. This needle has 13mm length (which exactly matches with the length of *Vrihi*), 0.45mm breadth. So it should be pierced 2mm to 4mm for skin, 4mm to 6mm for *Mamsa* and 6-10 mm for *Snayu, Asthi* and *Sandhi*.^[19]

AYURVEDIC ACUPUNCTURE NEEDLE

DISPOSABLE NEEDLES



DISPOSABLE NEEDLE OF 26 GAUZE.



MATERIALS AND METHODS

Materials

Literary source

1. Classical text books
2. Articles from internet, journals and other published works.
3. Related source of data from internet

Clinical source

Different patients having different joint pain (like shoulder pain, knee joint pain etc.) back pain, neck pain with tenderness were selected by random sampling method from OPD of our Hospital.

INSTRUMENTS

1. **Disposable Needle-** The disposable needle selected for the research work is needle number 26.
2. **Nadi sweda yantra-** It is used for the *Swedana*.
3. **Spirit swab-** It is used for cleaning the local area before performing *Suchivedhana*.
4. **Dry gauge piece-** To clean the local area after the *Suchivedhana Karma*.

Methods

Study design- Clinical trial study in the comparative manner containing following two groups;

Group A- [Experimental group]- *Snehana* and *Swedana* and *Suchivedhana Karma*.

Group B-[Control group]- *Snehana* and *Swedana*.

Sample size- Total 10 patients, 5 patients for each group mentioned above

Sampling method- 10 patients having different joint pain were selected by random sampling procedure.

Inclusive Criteria

1. Patients of either sex.
2. Between age group 20-60 years.
3. Patients irrespective of caste, religion, economical status.
4. IPD and OPD patients of Government Ayurved Hospital, Osmanabad.
5. All patients having pain and restricted movements at joint region or musculoskeletal pain.

Exclusive Criteria

1. Patients of Age below 20 years and above 60 years are excluded.
2. Patients suffering from major trauma having dislocation or fracture.
3. Patients suffering from any major systemic disorders like HTN, IHD.
4. HIV, HBsAg reactive patients are also excluded.

CRITERIA FOR ASSESSMENT

Subjective Criteria:

Parameters were the clinical grading on signs and symptoms.

Mobility Gradation Chart

Grade 1- Normal movements with no pain

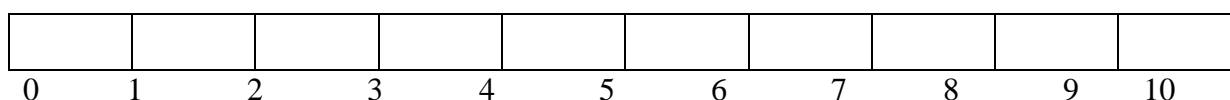
Grade 2- Restriction of movement with mild pain

Grade 3- Restrictions of movements with moderate pain

Grade 4- Restriction of movements with severe pain

Pain

Severity of pain as per VAS (Visual Analogue Scale)



Grading of pain according to VAS

Pain score	Grade
0	No pain
1-3	Mild pain
4-6	Moderate pain
7-10	Severe pain

INVESTIGATIONS

Hb%, BSL-R, BT, CT, HIV, HBsAg

Duration of treatment- 3 days

Frequency- 3 times, once per day

Follow up- 0 and 3rd day

The findings were recorded according to the follow-up chart.

Data recorded, maintained and analyzed.

OBSERVATION AND RESULTS

The study was conducted on 10 patients of either sex belonging to age between 20 and 60 years. The patients were randomly divided in two groups as follows.

Table: Procedure and number of patients in each group.

Group	No. of patients	Procedure
A (Experimental)	5	<i>Snehan Swedan and Suchivedhan</i>
B (Control)	5	<i>Snehan Swedan</i>

The experimental group was treated by performing *Snehan Swedan* and *Suchivedhan* and the control group was treated by *Snehan Swedan*. Both the groups were treated for 3 days. The follow up was taken on 0 and 3rd day. Pre procedural and post procedural data was well maintained. The study was analyzed systematically.

The following observations and results are obtained during the study.

Mobility Gradation

Group A.

OPD No.	Age	Sex	Mobility grade Before treatment	Mobility grade After treatment
9640	27	Male	Grade 4	Grade 2
5584	38	Male	Grade 3	Grade 1
2008	40	Male	Grade 4	Grade 1
8039	38	Male	Grade 4	Grade 1
7423	35	Female	Grade 4	Grade 1

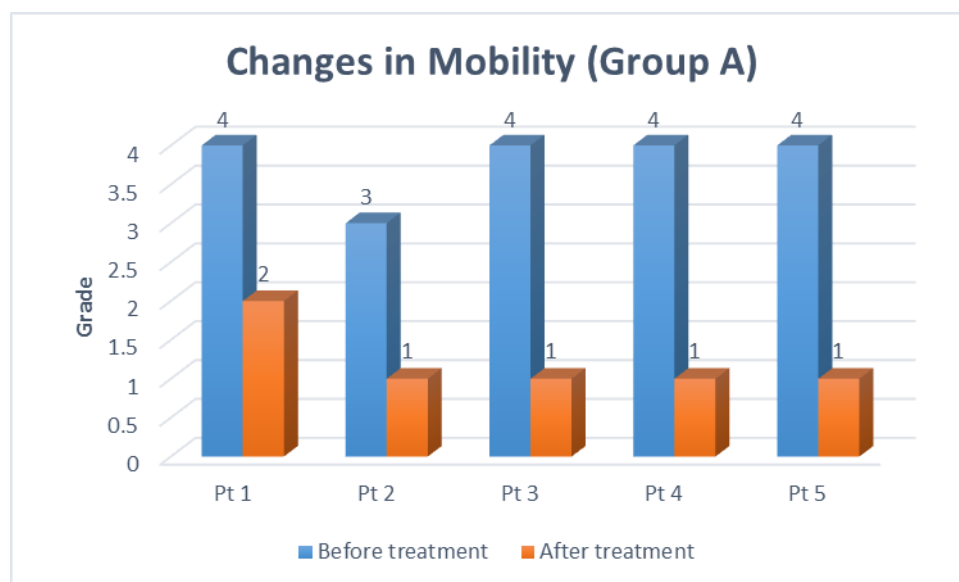


Figure: Changes in Mobility Group A.

Group B:

OPD No.	Age	Sex	Before treatment	After treatment
9641	43	Male	Grade 4	Grade 4
1354	38	Female	Grade 4	Grade 4
8040	27	Male	Grade 4	Grade 4
7424	30	Female	Grade 4	Grade 4
9642	41	Male	Grade 4	Grade 4

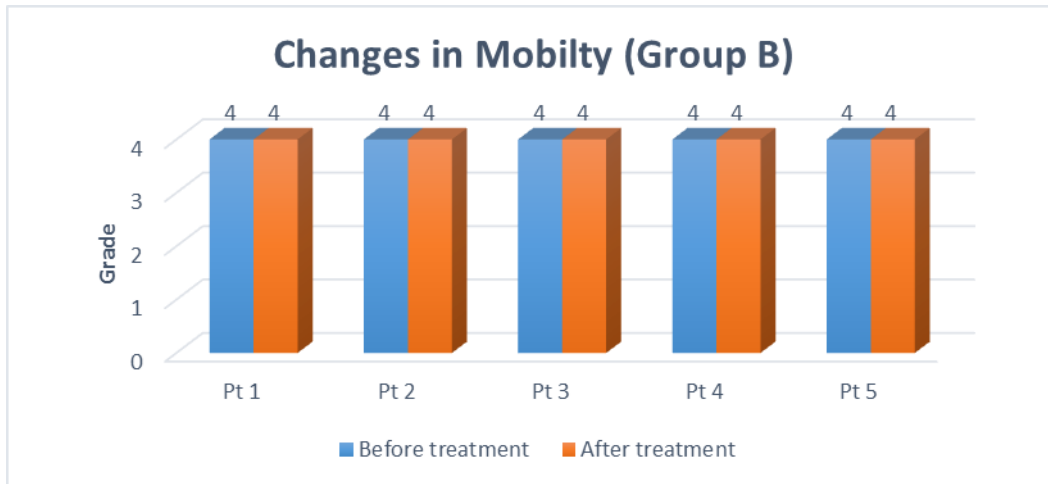


Figure: Changes in Mobility Group B.

Pain

Group A.

OPD No.	Age	Sex	Pain score Before treatment acc. To VAS	Pain score After treatment acc. To VAS
9640	27	Male	8	2
5584	38	Male	6	1
2008	40	Male	9	3
8039	38	Male	8	2
7423	35	Female	9	2

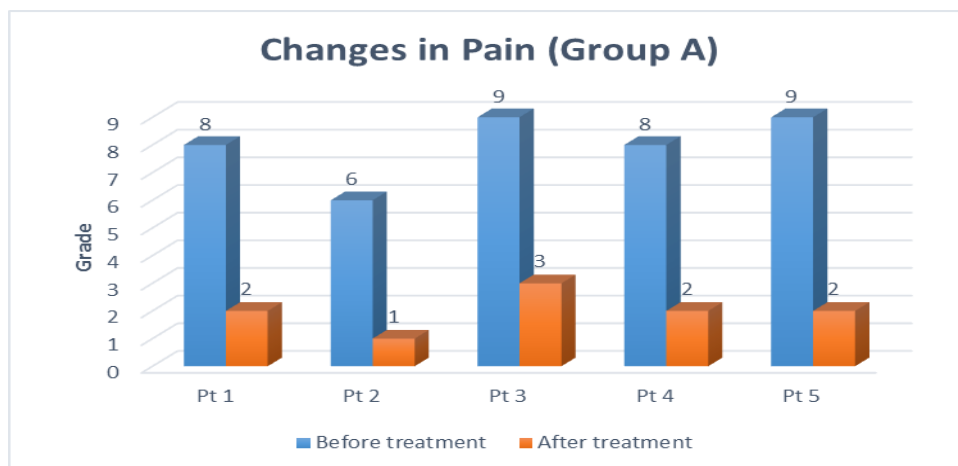
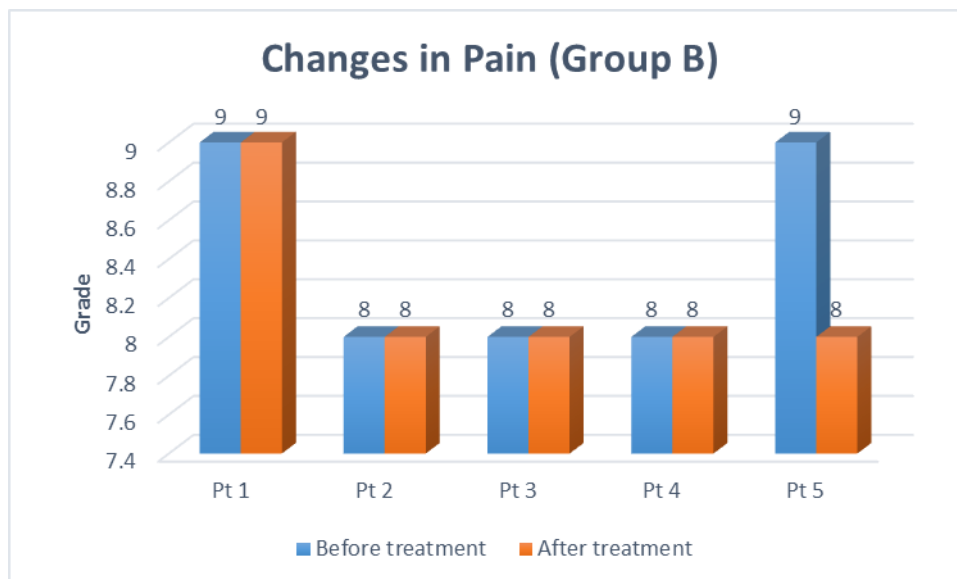


Figure: Changes in Pain Group A.

Group B.

OPD No.	Age	Sex	Before treatment	After treatment
9641	43	Male	9	9
1354	38	Female	8	8
8040	27	Male	8	8
7424	30	Female	8	8
9642	41	Male	9	8

**Figure: Changes in Pain Group B.****Statistical Analysis (Mann-Whitney's U Test)****1. Mobility****Table: Mann-Whitney's U Test: Comparison Group A & B.**

Group	N	Mean Diff	Mean Rank	U	P
A	5	2.600	8	0.000	0.0079
B	5	0.000	3		

As value of P is less than 0.05, significant difference was found between mean differences of Group A and Group B. Mean difference of Group A is more than that of Group B, hence it is concluded that Mobility is improved significantly in Group A than in Group B.

2. Pain**Table: Mann-Whitney's U Test: Comparison Group A & B.**

Group	N	Mean Diff	Mean Rank	U	P
A	5	6.000	8	0.000	0.0079
B	5	0.200	3		

As value of P is less than 0.05, significant difference was found between mean differences of Group A and Group A. Mean difference of Group A is more than that of Group B, hence it is concluded that Pain is decreased significantly in Group A than in Group B.

DISCUSSION

The present study entitled 'PHYSIOLOGY OF PAIN AND ITS MANAGEMENT IN AYURVEDA W.S.R. TO SUCHIVEDHAN KARMA' was done on total 10 patients in two groups, each group having 5 patients. Group A (experimental group) was treated with *Snehana Swedana* and *Suchivedhana*, whereas Group B (control group) was treated with *Snehana Swedana*.

Pain- The visual analogue scale for pain was significantly improved in experimental group at the end of the treatment, and it is not significantly improved in control group after only *Snehana Swedana*.

After *Suchivedhana* (along with *Snehana Swedana*) there was a significant improvement in pain measured by visual analogue scale. The *Suchivedhan* works on the pain receptors called as nociceptors. Hence, it blocks the pathway of pain. Due to which there was a significant result in the pain after *Suchivedhan karma*.

The control group was given *Snehana Swedana* for 3 days consequently. Here the classical treatment of *Vata Vyadhi* is utilized for the management of the pain condition. In all *Samhitas*, it has been well described and proved for many such types of pain conditions. It surely gives soothing effect at least immediately. The analgesics and physiotherapy being the foundation of the modern treatment, *Snehana Swedana* was considered best for the control group.

AYURVEDIC ASPECT

Vedhan and *Visravan* are two different *Karmas* mentioned by *Acharya Sushruta*. *Siravedha* is a wide term used for removal of blood. It could be of any type like venesection, leech, horn, and Gourd, Scarification or even a prick.^[20] If the blood vessel is large and clearly visible, the blood can be evacuated i.e. *Visravana* can be done. But if the *Sira* is not visible, it is to be pricked by needle i.e. only *Vedhan* can be done here. To understand *Suchivedhana*, we have to clear the concept that *Sira* always carry all *Doshas* i.e. *Vata*, *Pitta* and *Kapha* along with *Rakta*.^[21] According to *Sushruta*, when *Siravedha* is done, the most vitiated *dosha* is expelled

out first.^[22] The same mechanism can be applied for *Suchivedhan Karma*. In *Suchivedhan*, very low quantity of blood oozes out. Though the oozing blood is very minute, yet it may be sufficient to expel out the most vitiated *Doshas*. So, in joint pain, the vitiated *Dosha- Vata* may be released out after *Suchivedhan*, resulting in *Vednashanti* and relaxation of *Sandhibandhan*.

MODERN ASPECT

According to modern science, the probable mode of action of *Suchivedhan* can be understood as follows.

Pain is a protective mechanism of the body, which occurs anywhere in the body. It is a somatic sensation. Receptors for pain in the skin and all other tissues are free nerve endings. These are present in the superficial layer of skin and also at joint surfaces.

There are three types of stimuli that excite the pain receptors.

1. Mechanical
2. Thermal
3. Chemical

Transmission of pain signals to CNS is carried out by two main pathways.

1. Fast sharp pain pathway
2. Slow chronic pain pathway

Analgesia (pain suppression system in the brain)

Transmitters like enkephalin and serotonin are involved in analgesia system. Enkephalin cause both presynaptic and post synaptic inhibition of incoming type A and type C alpha pain fibers where they synapse in the dorsal horns. Hence, activation of analgesia system and inhibition of pain pathways can totally suppress many pain signals.

Pain receptors are also known as nociceptive receptors or nociceptors.

Damaging the nociceptive fibers can be a treatment for relieving the pain. The same mechanism is done in the *Suchivedhan Karma*.

Tender points are chosen for *Suchivedhan*. These points are the positions of the central fibers which are the most responsible for transmitting the pain impulse. Here, disturbance of the channel occurs which produce pain in the joint.

CONCLUSION

The short project entitled- “PHYSIOLOGY OF PAIN AND ITS MANAGEMENT IN AYURVEDA W.S.R. TO *SUCHIVEDHAN KARMA*” was undertaken for study. Following conclusions are drawn.

- ✓ It is the misunderstanding that *Ayurveda* is not having instant management of pain and *Ayurveda* works slowly as there is no instant pain relief method in *Ayurveda*. The patient of experimental group respond well towards the treatment by *Suchivedhan Karma*.
- ✓ *Snehan Swedan* alone is not much enough in severe pain and restricted movements of joints, as patients reported no significant relief after 3 days of the treatment. Whereas *Suchivedhan Karma* gives instant relief from pain.
- ✓ The *Suchivedhan* procedure works very fast as the relief was significant even after one to two days of the treatment. It proves that *Ayurveda* also has fast acting procedures.
- ✓ Side effects of prolonged use of NSAIDs and steroids can be avoided by using *Suchivedhan Karma*. It is cost-effective and gives instant relief.
- ✓ Hence it has been proved that *Suchivedhan* has significant effect in pain management. But it is also necessary to have further research works on large sample size and with more follow-ups.

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