International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Management of Subacromial-Subdeltoid Bursitis Through *Panchakarma*: A Case Study

Dr. Jatinder Verma[1], Dr. Gopesh Mangal[2]

[1]Ayurvedic Medical Officer, Panchakarma Specialist, Ayush Wing, Civil Hospital, Ambala Cantt, 133001, Haryana, India.
[2]Professor & HOD, PG Department of Panchakarma, National Institute of Ayurveda(DU), Jaipur, 302002, Rajasthan, India.

Abstract

Background: Subacromial-subdeltoid bursitis refers to the inflammation of the subacromial-subdeltoid bursa and is a common cause of shoulder pain. It is quite common and one of the main causes of shoulder pain. Incidence increases with age. It is frequently seen in people with overhead activities.

Objectives: Depending on the type of shoulder bursitis, treatment may include activity modification, immobilization with a splint, icing, injections, aspiration of the bursa (removing fluid with a syringe), antibiotics or anti-inflammatory pain medication. Injections of steroids into the bursa are used but can be associated with unwanted side effects. In *Ayurveda*, *Panchakarma* therapies like *Upnaha Sweda* (poultice) is used to treat abscess, bursitis, arthritis, varicosity, inflammation, frozen shoulder, muscle stiffness. Present case study was based on the treatment of subacromial-subdeltoid bursitis with *Upnaha Sweda* (poultice).

Materials and Methods: This case study of a 60 year-old male patient of subacromial-subdeltoid bursitis includes treatment through *Upnaha Sweda* (poultice) which showed significant relief in pain, swelling, tenderness, stiffness and range of motion.

Results: Patient was treated at OPD level with oral medication and *Upnaha Sweda* and advised *Pathya* and *Apathya* (Do and Don'ts) with regular follow ups.

Conclusion: During the treatment all the signs and symptoms reduced to a very high extent. *Upnaha Sweda* (poultice) is an important *Panchakarma* procedure to treat subacromial-subdeltoid bursitis in *Ayurveda*.

Keywords: Subacromial-subdeltoid bursitis, *Upnaha Sweda*, Poultice, *Panchakarma*

1. Introduction

Shoulder bursae refer to sacs surrounding the shoulder joint that are filled with synovial fluid. As with bursae in general, they facilitate movement and reduce friction at tendon-tendon and tendon-bone interfaces. The subacromial-subdeltoid bursa is proximally located deep to the overlying deltoid muscle and coracoacromial arch and superficial to the rotator cuff tendons and the rotator interval. Distally it can be seen between the deltoid muscle and the humeral shaft [1,2]. Subacromial-subdeltoid bursitis refers to the inflammation of the subacromial-subdeltoid bursa and is a common cause of shoulder pain. It is quite common and one of the main causes of shoulder pain [1-4]. The pathological correlate of subacromial-subdeltoid bursitis is an inflammatory change of the bursa consistent with an increased

amount of fluid and collagen formation e.g. as a result of excessive friction. Like other sorts of inflammatory conditions, subacromial-subdeltoid bursitis can be subdivided into "acute", "chronic" and "recurrent". The fluid can become hemorrhagic. In chronic bursitis, the wall becomes thicker due to the formation of collagen and might even calcify [2] and in a rare case scenario, rice bodies might be found [5]. In case of an associated full-thickness rotator cuff tear, there will be a communication to the glenohumeral joint. Incidence increases with age. It is frequently seen in people with overhead activities. Risk factors include baseball pitcher, spear thrower, tennis, factory workers, manual laborers and unstable os acromiale. Common etiological factors are excessive friction due to repetitive stress, overuse activity and/or subacromial impingement, acute trauma, rotator cuff injury, crystal deposition disease, rheumatoid arthritis, infection, tenosynovial giant cell tumor (rare). Patients with subacromial-subdeltoid bursitis usually complain of localized pain and tenderness in the anterolateral part of the shoulder just underneath the acromion and acromioclavicular joint with decreased range of motion. Chronic subacromial-subdeltoid bursitis can result in rotator cuff injury. It can lead to lost workdays and, in some cases, even disability. Bursitis can often be diagnosed by clinical examination; by visual inspection it is possible to notice some redness and warmth, local tenderness or stiffness in the joint with some swelling when the inflammation is worse. Diagnostic techniques include X-ray testing which can sometimes detect calcifications in the bursa when bursitis has been chronic or recurrent. MRI scanning (magnetic resonance imaging) can also define bursitis.[6] Depending on the type of shoulder bursitis, treatment may include activity modification, immobilization with a splint, icing, injections, aspiration of the bursa (removing fluid with a syringe), antibiotics or anti-inflammatory pain medication.[7,8] Present case study include treatment through *Panchakarma* (*Upanaha Sweda*). The term '*Upnaha'* is derived from *Upnahana*, which means bandage in Sanskrit. It is the process of applying a warm herbal paste to the affected body parts, followed by bandaging. The word '*Sweda'* means sweat; the therapy to induce perspiration is called *Swedana*. By inducing sweating, the procedure helps to alleviate pain and inflammation from the body and thus reduces stiffness and increases mobility. Indications of *Upnaha Sweda* are abscess, bursitis, arthritis, varicosity, inflammation, frozen shoulder and muscle stiffness.

2. Patient information

A 60 year old man, painter by profession visited *Panchakarma* O.P.D of AYUSH Wing, civil hospital Ambala Cantt, Haryana on 23-01-2024 presented with complaints of pain and stiffness in the right shoulder since 2 years. He had difficulty in moving right hand and hardly holds or slings a bag on right shoulder. Being a painter by profession, he was unable to do work and was facing difficulty while painting on walls. He was experiencing a throbbing pain while raising his right hand while painting above the level of head. Pain was radiating down the right arm. He had painful sleep and feeling weakness in the affected arm. The pain and stiffness aggravated while doing work since 6 months. This causes discomfort all the time in doing his daily work and his condition was worsen day by day. He was advised for *Panchakarma* and visited OPD at AYUSH Wing.

3. Clinical findings

On examination, there was pain, stiffness, local tenderness, warmth in the right shoulder. There is reduced range of motion in the shoulder particularly when moving the arm overhead. Pain worsens when the shoulder is abducted or flexed between 80º and 120º. There was decreased elevation, internal

rotation and abduction. There was a painful catch when lowering the arm from full abduction at midrange. The patient's blood pressure was 140/80 mm Hg and 80 beats per minute on right hand. Her cardiac rhythm was regular. The rest of the vital signs were normal. Patient was well build and his other clinical findings were normal. There is no relevant history of chronic diseases like diabetes, rheumatoid arthritis, trauma etc. As he is a painter by profession and doing this job from the last 20 years found to be the main cause. He was advised for X-ray right shoulder joint on first visit and MRI later on his second visit. MRI findings reveal mild subacromial-subdeltoid bursitis.

4. Timeline

Table 1: Timeline

23/01/2024	1st visit in OPD, examination done, Advised for X-ray, prescribed oral medicines
27/01/2024	2nd visit, medicines repeated and advised for MRI
06/02/2024	3rd visit, medicines repeated, Advised for *Upnaha Sweda* for 14 days
07/02/2024 to 22/02/2024	*Upnaha Sweda* for 14 days
04/03/2024	1st follow-up
20/03/2024	2nd follow-up
22/04/2024	3rd follow-up

5. Diagnosis and differential diagnosis

Bursitis is frequently caused by another medical condition. Patients who suffer from subacromial-subdeltoid bursitis, are likely to suffer from subacromial impingement, adhesive capsulitis, rotator cuff tendinopathy, Supraspinatus Tendinopathy or bicipital tendinopathy

6. Treatment protocol

On the day of 1st visit internal medication was given using *Yograj Guggulu* (1 tds), *Lakshadi Guggulu* (1 tds), *Ashwagandha Churna* (3gm bd), *Bala Churna* (2gm bd) and *Ashwagandharista* (15ml tds). He was advised *Aahara* and *Vihara* as advised in *Ayurveda* classics. *Upnaha Sweda* (poultice) was done for 14 days. [Table 2]

Table 2: Treatment protocol

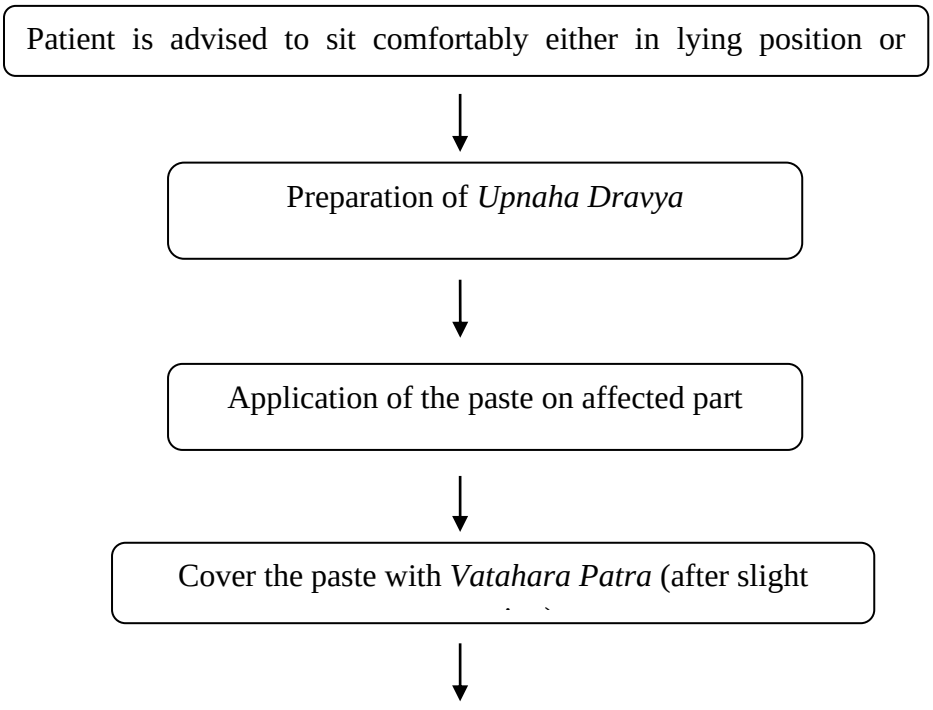
Oral Medications	***Panchakarma* Procedure**	***Pathya-Apathya* (Do and Don'ts)**
Yograj Guggulu [1tds], *Ashwagandha Churna* [3gm tds], *Bala Churna* [2gm tds], *Ashwagandharista* [15ml tds]	*Upnaha Sweda* (poultice) for 14 days 07/02/2024 to 22/02/2024	*Aahara* and *Vihara* as advised in *Ayurveda* classics.

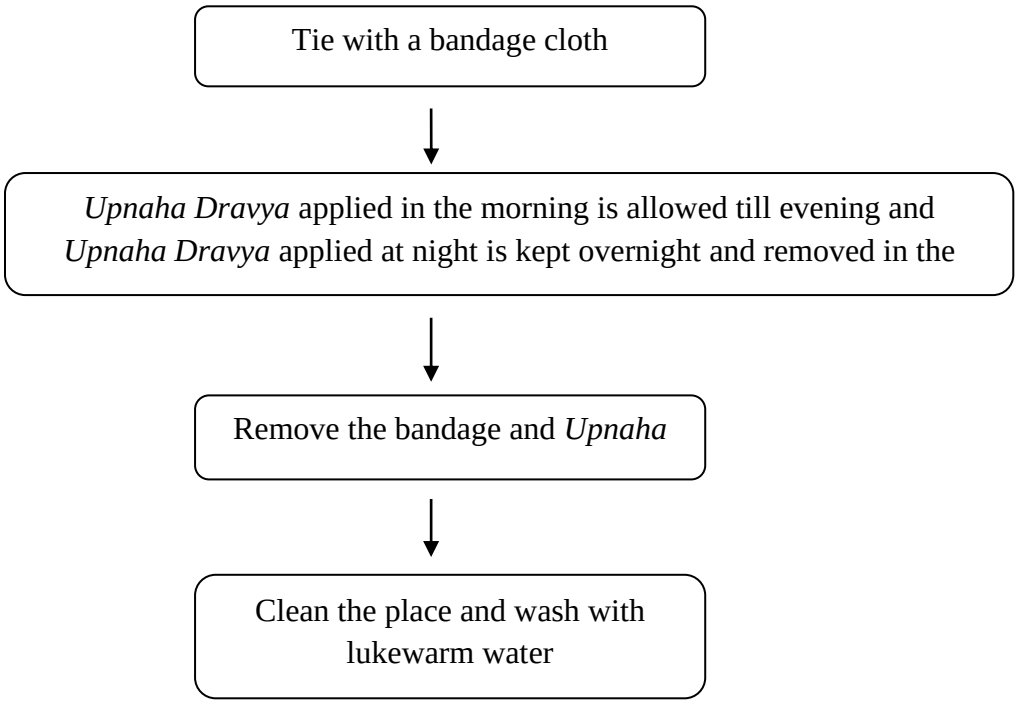
7. Treatment

The patient is advised for oral medicines with *Upnaha Sweda* [Table.2]. With the internal medicine prescribed as above, fourteen sittings of *Upnaha Sweda* [Fig. 1] were done under aseptic condition. *Upnaha Sweda* [9, 10,11,12,13] is a type of *Ekanga Sweda*. The word *Upnaha* means poultice (to tie or

bandage). It is a unique procedure of applying paste of herbs to affected parts of the body followed by bandaging. It is of two types; *Sagni* and *Niragni* which means, it can be done with or without heating the medicine. Bandaging can be done or can make according to the site like knee, elbow, spine, shoulder joint, hand, legs etc. It is usually done in the night so that it can be there for about 12 hours. *Upnaha Sweda* done during day is removed at night and if done during night, it is removed in the morning. Indications are *Shula* (Pain), *Amavata* (Rheumatoid Arthritis, Bursitis, *Avabhauka* (Frozen shoulder), Ankylosis, *Vatakantaka*, Tennis elbow, Varicosity. Selected *Churna*, *Saindhava*, *Sneha*/ *Taila*, *Amla Dravya* (*Takra*/ *Dadhi*/ *Kanji*/ *Dhanyamla*) are added in order to make a paste. Then it must be heated in case of *Sagni Upnaha* up to 39^0C-41^0C or applied as such in case of *Niragni Upnaha*. Skin sensitivity should be tested before tying. In this case *Nagaradi Churna*, *Kottamchukadi Churna*, *Vacha Churna*, *Shatavaha*, *Devdaru*, *Dhanyamla* in equal amount were used. Leaves of *Eranda* (to cover the area) were used. Patient is examined whether he is fit for *Upnaha* or not on the basis of *Prakriti*, *Bala* etc., *Asthavidha* and *Dashvidha Pariksha*. Vitals of the patient are recorded. Severity of the disease is assessed on the basis of *Dosha* involvement and *Pancha-Nidana*. Patient is informed about the procedure in detail with possible complications. Written consent of patient is taken before the procedure. The selected site of application part is to cleaned or washed with lukewarm water. *Abhyanga* is done on the affected part with lukewarm selected oil if needed. It can be avoided for first 2/3 procedures. The prepared *Upnaha Dravya* is pasted on the affected part thickly about 1-2 cm thickness uniformly with the help of spatula. The paste is then covered with *Vatahara Patra* like *Eranda Patra* after slight warming. Then it is tied with a thick cotton cloth/ leather/ other. Bandage can be tight or loose. According to region, suitable bandaging technique is adopted. *Upnaha* can be done daily on on alternate days and preferably at night. *Upnaha Dravya* applied in the morning is allowed till evening and *Upnaha Dravya* applied at night is kept overnight and removed in the morning (maximum 12 hours). It is usually done according to the condition of affected part/ patient. *Upnaha Dravya* is removed from the part and washed with lukewarm water. (Flow chart) [14]

Flow Chart





8. Outcome measures and follow up

The outcome measures collected before, during and after *Upnaha Sweda* on the basis of;

- Visual Analogue Scale
- Shoulder Disability Questionnaire (SDQ)

Before treatment, pain worsens when the shoulder is abducted or flexed between 80º and 120º. During treatment mild relief in pain, tenderness, stiffness is seen. Though there was no change in pain during abduction of arm. Mild improvement was found during the treatment but significant improvement was found after the treatment in the symptoms of pain during abduction of arm and tenderness, stiffness. Before treatment VAS was 7-8 (severe pain, hurts whole lot) which was reduced to 5-6 (moderate) during the treatment (7^{th} day) and 2-3 (mild, tolerable) after treatment (14^{th} day). SDQ parameters improved after the treatment. The shoulder abduction motion range increases (mild pain on abduction above 120º) and the effectiveness of *Upnaha Sweda* were seen on follow ups after the treatment. [Table 3]

Table3. Outcome measures

Assessment parameter	**Before treatment Day 0**	**During treatment Day 7**	**After treatment Day 14**
Visual Analogue Scale (VAS)	7-8	5-6	2-3
Shoulder Disability Questionnaire (SDQ) (16 questions)	NA=1, Yes=13, No=2	NA=1, Yes=8, No=7	Na=1, Yes=0, No=15

9. Discussion

The internal medicines given were primarily aimed at *Shothahagna* (anti-inflammatory) medicines. *Yogaraj Guggulu* is a traditional formula designed to reduce excess aggravated *Vata* in the body, pre-

dominantly useful for accumulated *Vata* in the joints and muscles, which may be indicated by cracking joints or tics, spasms or tremors. It contains a synergistic blend of detoxifying herbs, including *Triphala*, *Chitraka* and *Vidanga* that work in conjunction with *Guggulu* to remove excess *Vata* from the joints as well as the nerves and muscles. *Ashwagandha* (*Withania somnifera)* is being studied for the treatment of many diseases associated with inflammation in the body, such as cardiovascular, pulmonary, and auto-immune diseases and diabetes, cancers, and neurodegenerative diseases. Preclinical studies have demonstrated the ability of this plant to regulate mitochondrial function and apoptosis and reduce inflammation by inhibiting inflammatory markers such as cytokines (including IL-6 and TNF-a), nitric oxide, and reactive oxygen species.[15] *Ashwagandha* is also being investigated for its efficacy in rheumatoid diseases. In a study conducted in an animal model, changes in the concentrations of a number of serum proteins, such as α2 glycoprotein, acute phase protein α1 and prealbumin, were demonstrated, along with a significant reduction in inflammation[16] in rats when *Ashwagandha* root powder was given orally. In a study using the HaCaT human keratinocyte cell line, an aqueous solution from *Ashwagandha* root was found to inhibit the NF-κB and MAPK (mitogen-activated protein kinase) pathways by decreasing the expression of pro-inflammatory cytokines, including interleukin (IL)-8, IL-6, tumour necrosis factor (TNF-α), IL-1β, and IL-12, and increasing the expression of anti-inflammatory cytokines. Based on these results, it can be concluded that the anti-inflammatory effects of *Ashwagandha* could potentially be used in the prevention of inflammation[17].

In India, *Sida cordifolia* or '*Bala'* is considered to be one of the most valuable drugs in *Ayurvedic* medicine and has been widely used since ancient times. The roots, leaves, and stems are utilized as traditional medicines in chronic dysentery, gonorrhea, and asthma, piles, to induce/promote aphrodisia, and as a remedy for neurodegenerative diseases, including Parkinson's disease. The roots of *Bala* are administered as a curative agent for nervous disorders such as facial paralysis and hemiplegia, as well as in urinary disorders. The root bark is exploited as stomachic, demulcent, tonic, astringent, bitter, diuretic, aromatic, and as antiviral agent. The pharmacological examination showed that seeds cause elevation of blood pressure in anesthetized animals. In Brazil, *S. cordifolia* is generally recognized as 'malva branca' or 'malva branca sedosa' and is used in Brazilian folk medicine for the treatment of inflammation of oral mucosa, asthmatic bronchitis, nasal congestion, blenorrhea, stomatitis, asthma and rheumatism, and as analgesic. It is also reportedly indicated in Brazilian traditional medicine as antirheumatic, antipyretic laxative, diuretic, anti-inflammatory, analgesic and hypoglycaemic, antiviral, antimicrobial, and as aphrodisiac. In China, *S. cordifolia* is considered as a herbal equivalent of Ephedra, while in Kenya it is utilized for dental hygiene. [18] *Upnaha Sweda* offers several benefits to the human body. It increases flexibility, i.e., *Gatravinama*, relaxes the muscles and relieves joint stiffness, reduces crepitus of joint, nourishes the body tissues, alleviates swelling and pain, improves blood circulation, reduce joint inflammation.

10. Conclusion

Upnaha Sweda in patients suffering from subacromial-subdeltoid bursitis potentially offers a significant clinical improvement. The case showed remarkable changes in the symptoms of pain, tenderness, swelling, pain during abduction of arm, it can be concluded that in such conditions of subacromial-subdeltoid bursitis *Upnaha* Sweda will be a choice of treatment.

Patient consent

Patient consent was taken before conducting leech therapy.

Financial support and sponsorship
Nil

Conflicts of interest
There are no conflicts of interest.

References

1. Hirji Z, Hunjun J, Choudur H. Imaging of the Bursae. J Clin Imaging Sci. 2011;1:22. doi:10.4103/2156-7514.80374 – [Pubmed]
2. Van Holsbeeck M & Strouse P. Sonography of the Shoulder: Evaluation of the Subacromial-Subdeltoid Bursa. AJR Am J Roentgenol. 1993;160(3):561-4. doi:10.2214/ajr.160.3.8430553 –[Pubmed]
3. Olin H. Subacromial Bursitis; Clinical and Roentgen Observations. Radiology. 1946;47(6):593-6. doi:10.1148/47.6.593 – [Pubmed]
4. Draghi F, Scudeller L, Draghi A, Bortolotto C. Prevalence of Subacromial-Subdeltoid Bursitis in Shoulder Pain: An Ultrasonographic Study. J Ultrasound. 2015;18(2):151-8. doi:10.1007/s40477-015-0167-0 – [Pubmed]
5. Kvalvaag E, Anvar M, Karlberg A et al. Shoulder MRI Features with Clinical Correlations in Subacromial Pain Syndrome: A Cross-Sectional and Prognostic Study. BMC Musculoskelet Disord. 2017;18(1):469. doi:10.1186/s12891-017-1827-3 – [Pubmed]
6. Medicine net Shoulder bursitis Available:https://www.medicinenet.com/shoulder_bursitis/article.htm.
7. Radiopedia Shoulder Bursae Available;https://radiopaedia.org/articles/shoulder-bursae .
8. John Hopkins Shoulder Bursitis Available:https://www.hopkinsmedicine.org/health/conditions-and-diseases/shoulder-bursitis.
9. Charaka Samhita, Vol 1, Sutrasthana 14/35-38, Vaidya Harishchandra Kushwaha, Chaukhambha Orientalia, Varanasi, Reprint edition 2016, p226.
10. Sushruta Samhita, Vol 2, Chikitsasthana 32/12, Dr Kewal Krishan Thakral,Chowkhamba Orientalia, Varanasi, Reprint edition 2017, p495-496.
11. Sushruta Samhita, Vol 2, Chikitsasthana 4/14-17, Dr Kewal Krishan Thakral, Chowkhamba Orientalia, Varanasi, Reprint edition 2017, p237.
12. Ashtanga Samgrah, Vol. 1, Sutrasthana 26/3-5, Kaviraj Atridev Gupta, Chowkhamba Krishandas Academy, Varanasi, p192-193.
13. Ashtanga Hridya, Sutrasthana 17/2-5, Kaviraj Atridev Gupta, Chaukhambha Prakashan, Varanasi, Reprint edition 2016, p151.
14. Practical Guide to Panchakarma Procedures, Dr Gopesh Mangal, Dr Gunjan Garg, Dr Jatinder Verma, Chaukhambha Orientalia, Varanasi/Bangalore, first edition 2023, p173.
15. Dar N.J., Hamid A., Ahmad M. Pharmacologic overview of Withania somnifera, the Indian Ginseng. Cell. Mol. Life Sci. 2015;72:4445–4460. doi: 10.1007/s00018-015-2012-1. [DOI] [PMC free article] [PubMed] [Google Scholar]
16. Rasool M., Varalakshmi P. Immunomodulatory role of Withania somnifera root powder on experimental induced inflammation: An in vivo and in vitro study. Vascul. Pharmacol. 2006;44:406–410. doi: 10.1016/j.vph.2006.01.015. [DOI] [PubMed] [Google Scholar]

17. Sikandan A., Shinomiya T., Nagahara Y. Ashwagandha root extract exerts anti-inflammatory effects in HaCaT cells by inhibiting the MAPK/NF-κB pathways and by regulating cytokines. Int. J. Mol. Med. 2018;42:425–434. doi: 10.3892/ijmm.2018.3608. [DOI] [PubMed] [Google Scholar]
18. Ahmed Galal, Vijayasankar Raman and Ikhlas A. Khan, Sida cordifolia, a Traditional Herb in Modern Perspective – A Review, Current Traditional Medicine, 2015, 1, 5-17.

Fig. 1: ***Upnaha Sweda***

a. b.

c. d.

e.