



ISSN 2456-3110

Vol 4 • Issue 2

Mar-Apr 2019

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS



Charaka
Publications

Indexed

Review of *Malahara Kalpana* of *Rasa Tarangani*

Dr. Dubey Somil

Medical officer, Pt. Khushilal Sharma Government Ayurveda College and Institute, Bhopal, Madhya Pradesh, INDIA.

ABSTRACT

The word *Malahara* or *Malhama* is derived from unani system of medicine. *Yogarathnakara* mentioned this first by the name of *Malahara Kalpana*. It derives its name as it removes *Mala* (residue etc.) from *Vrana* (wounds), *Vidradhi* (abscess) etc. This is similar to ointments in modern pharmaceuticals. *Malahara Kalpana* is the ointment preparation which has *Siktha Taila* (bees wax and oil mixture) or *Ghrita*, as the basic constituent. The other ingredients may include herbal, metal, or mineral contents depending upon the usage. *Malahara* has a property like *Snehana* (oelation), cleansing, *Ropana* (healing), *Lekhana* (scaraping), and *Varnya* (beautifying), depending on the drugs used in the preparation. *Rasa Tarangani* a *Rasa Shastra* treatise of 20th century by *Acharya Sadananda Sharma* has enumerated various types of *Malahara Kalpana* taking mainly *Siktha Taila* as a base. Though this *Kalpana* holds firm roots in treating diseases the mention and explanation of this particular topic is scattered in this treatise. Hence the present article is an attempt to elucidate and unfold the *Malahara Kalpana* of *Rasatarangani*.

Key words: *Malahara Kalpana*, *Siktha Taila*, *Rasa Tarangani*.

INTRODUCTION

Medicines are broadly classified into two categories one *Antaparimarjhana* i.e. for internal usage such as *Churna* (powders), *Vati* (tablet), *Kwatha* (decoction), etc. and the other called *Bahiparimarjhana* for external usage such as *Malahara*, *Lepa* (creams and ointments), *Varti* (suppositories). *Malahara Kalpana* is quite similar to cream, ointments used in modern pharmaceutical science. *Malahara* has two chief ingredients one is the *Aadheya Dravya* i.e. the medicine and the other is the *Upadhan Dravya* i.e. the *Dravya* which converts the medicine into *Malahara* such as *Shatadhauta Ghrita*, *Siktha Taila* (bees wax

and oil), *Siktha* (bees wax), sesame seed oil.^[1] This formulation is easy to apply and easy to store having good shelf life period. *Rasa Tarangani* has enumerated various types of *Malahara Kalpana* in his treatise, here he has used mainly *Siktha Taila* (bees wax) as base, and other is *Ghrita*, *Navneeta* (butter/*Shatadhauta Ghrita*).

MATERIALS AND METHODS

As described earlier *Malahara Kalpana* comprises of mainly two components one is the base while other is the *Dravyas* providing or enhancing medicinal property of *Malahara Kalpana*. *Rasa Tarangani* has described *Siktha Taila* as when *Siktha* (bees wax) is combined with *Tila Taila* (sesame seed oil) in an appropriate ratio and after it attains *Navneeta* (butter) like consistency it is called *Siktha Taila*.^[2]

Method of preparation of *Siktha Taila*

1 part *Siktha Taila*, 6 parts *Tila Taila* is taken. *Tila Taila* is subjected to heat in a pan over gas stove, once it gets heated *Siktha* (bees wax) is added to it. After the wax gets mixed properly in oil, the pan is taken out of gas stove and again this mixture is mixed with spoon or pestle until a uniform consistency is obtained.

Address for correspondence:

Dr. Dubey Somil

Medical officer, Pt. Khushilal Sharma Government Ayurveda College and Institute, Bhopal, Madhya Pradesh, INDIA.

E-mail: somildubey11@gmail.com

Submission Date: 26/02/2019

Accepted Date: 12/04/2019

Access this article online

Quick Response Code



Website: www.jaims.in

DOI: 10.21760/jaims.4.2.15

Again the author has clarified that above ratio of bees wax and *Taila* is for winter season,^[3] if *Siktha Taila* is prepared in summer then it has to be 1:5 respectively.^{[4],[5]}

For preparing any *Malahara* the drug prescribed are added to above *Siktha Taila* when it is in liquefied stage and subjected to constant stirring till a homogenous mixture is obtained.

Various *Malahara Kalpana* described by *Rasa tarangani* are tabulated as follows.

Table 1: Showing Malahara Kalpana of Rasa Tarangani

SN	Name of Malahara	Ingredients	Indications
1.	<i>Rasa Pushpa Malahara</i> ^[6]	<i>Rasa Pushpa</i> - 4 <i>Ratti</i> (500 mg) <i>Navneeta</i> , washed 100 times with water (butter) - 1 <i>Tola</i> (12 gm)	<i>Phiranga</i> (Syphilitic ulcer)
2.	<i>Rasa Pushpadhya Malahara</i> ^[7]	<i>Siktha Taila</i> - 1 <i>Tola</i> (12 gm) <i>Rasa Pushpa</i> - 4 <i>Ratti</i> (500 mg)	<i>Phiranga</i> (Syphilitic ulcer), <i>Vicharchika</i> (eczema), Nail injury or bite by carnivorous animals. ^[8]
3.	<i>Kajjalikodhya Malahara</i> ^[9]	<i>Siktha Taila</i> - 48 <i>Tola</i> (576 gm) <i>Kajjali</i> (Black sulphide of mercury) - 2 <i>Tola</i> (24 gm) Purified <i>Mruddarshrunga</i> (Lead oxide) - 4 <i>Tola</i> (48 gm) <i>Kampilaka</i> (<i>Mallotus philippensis</i>) - 8 <i>Tola</i> (96 gm)	Heals non-healing ulcers that are difficult to be healed by various other types of <i>Malahara</i> .

		Purified <i>Tuttha</i> (<i>Copper sulphate</i>) - 3 <i>Masha</i> (3 gm)	
4.	<i>Dadru Vidravana Malahara</i> ^[10]	<i>Siktha Taila</i> - 12 <i>Tola</i> (144 gm) Purified <i>Gandhaka</i> (Sulphur) - 1 <i>Tola</i> (12 gm) Purified <i>Tankana</i> (Borax) - half <i>Tola</i> (6 gm) <i>Chakramarda</i> seeds (<i>Cassia tora</i>) - half <i>Tola</i> (6 gm) <i>Laksha Churna</i> (<i>Laccifer lacca</i>) - half <i>Tola</i> (6 gm)	Relives <i>Dadru</i> (tinea infection) within seven days
5.	<i>Gandhakaadhyha Malahara</i> ^[11]	<i>Siktha Taila</i> - 6 <i>Tola</i> (72 gm) Purified <i>Gandhaka</i> - half <i>Tola</i> (6 gm) Purified <i>Sindhura</i> (Lead sulphide) - half <i>Tola</i> (6 gm) Purified <i>Tankana</i> - 2 <i>Masha</i> (2 gm) <i>Karpooora</i> (camphor) - 2 <i>Masha</i> (2 gm)	Relives chronic nature of <i>Paama</i> (Scabies)
6.	<i>Hinguladhya Malahara</i> ^[12]	<i>Siktha Taila</i> - 12 <i>Tola</i> (144 gm) Purified <i>Sindhura</i> - half <i>Tola</i> (6 gm) Purifies <i>Hingula</i> (Cinnabar) - half <i>Tola</i> (6 gm)	<i>Phiranga</i> (Syphilitic ulcer)
7.	<i>Hingula Amrita Malahara</i> ^[13]	<i>Siktha Taila</i> - 12 <i>Tola</i> (144 gm) Purified <i>Hingula</i> - 6 <i>Masha</i> (6 gm) Purified <i>Mruddarshrunga</i> - 2 <i>Masha</i> (2 gm)	Heals and purifies non-healing type of wound. Also useful for <i>Nadi Vrana</i> (sinus)

		Purified <i>Tankana</i> - 2 <i>Masha</i> (2 gm) <i>Karpoora</i> - 2 <i>Masha</i> (2 gm) <i>Rasa Karpoora</i> - 2 <i>Masha</i> (2 gm) Purified <i>Sphatika</i> (alum) - 2 <i>Masha</i> (2 gm) Purified <i>Sindhura</i> - 2 <i>Masha</i> (2 gm)	tracts) and Fistula tracks.			- half <i>Tola</i> (6 gm) <i>Kshara</i> of <i>Ashwatha</i> (<i>Ficus religiosa</i>) tree bark - 2 <i>Masha</i> (2 gm)	
8.	<i>Talokadhya Malahara</i> ^[14]	<i>Siktha Taila</i> - 30 <i>Tola</i> (360 gm) Purified <i>Hartala</i> (orpiment) - 2 <i>Tola</i> (24 gm) <i>Kajjali</i> - 1 <i>Tola</i> (12 gm) <i>Hareetaki Churna</i> (<i>Terminalia chebula</i>) - 1 <i>Tola</i> (12 gm) <i>Khadirashara</i> (<i>Acacia catechu</i>) - 1 <i>Tola</i> (12 gm) Purified <i>Gairika</i> (red ochre) - 1 <i>Tola</i> (12 gm) Purified <i>Girisindoora</i> (HgO) - 1 <i>Tola</i> (12 gm) Purified <i>Manahshilla</i> (Realgar) - Half <i>Tola</i> (12 gm)	<i>Vrana</i> of various etiology, <i>Vicharchika</i> (eczema), <i>Dadru</i> (tinea infection), <i>Paama</i> (Scabies), <i>Vishphotaka</i> (erysipelas), and especially effective in <i>Nadi Vrana</i> (sinus track).	10.	<i>Tankana Amla Malahara</i> ^[16]	<i>Siktha Taila</i> - 9 <i>Tola</i> (108 gm) <i>Tankana Amla</i> - 1 <i>Tola</i> (12 gm)	<i>Vrana Shodhana</i> , <i>Agnidagdha Vrana</i> (burn) and <i>Bhutaghana</i> (anti-microbial).
9.	<i>Tankan Amrita Malahara</i> ^[15]	<i>Siktha Taila</i> - 12 <i>Tola</i> (144 gm) Purified <i>Tankana</i> - 2 <i>Tola</i> (24 gm) <i>Sarjikshara</i> (Potassium nitrate) - half <i>Tola</i> (6 gm) Purified <i>Kasisa</i> (Ferrous sulphate)	<i>Dusta Vrana</i> (non-healing ulcer)	11.	<i>Yasada Amrita Malahara</i> ^[17]	<i>Siktha Taila</i> - 3 <i>Karsha</i> (36 gm) <i>Agni Jarit Yasada</i> (Zinc calx) - 1 <i>Tola</i> (12 gm)	<i>Vrana Ropana</i> (healing) <i>Vicharchika</i> (eczema), and <i>Agnidagdha Vrana</i> (burn) ^[18]
				12.	<i>Tuttha Amrita Malahara</i> ^[19]	<i>Siktha Taila</i> - 10 <i>Tola</i> (120 gm) Purified <i>Tuttha</i> - 20 <i>Ratti</i> (2.5 gm)	Cures chronic <i>Paama</i> (scabies) ^[20]
				13.	<i>Tutthadhayo Malahara</i> ^[21]	Cow's <i>Ghrta</i> - 2 <i>Tola</i> (24 gm) <i>Raala Churna</i> (<i>Shorea robusta</i>) - 1/8 <i>Tola</i> (1.5 gm) Purified <i>Tuttha</i> - 1/8 <i>Tola</i> (1.5 gm) <i>Kapardika Bhasma</i> (cowries shell) - 1/8 <i>Tola</i> (1.5 gm) Purified <i>Tankana</i> - 1/8 <i>Tola</i> (1.5 gm)	<i>Vrana Shodhaka</i> and expulses excess of slough from wound.
				14.	<i>Sindhooradhy a Malahara</i> (I) ^[22]	<i>Siktha Taila</i> - 3 <i>Karsha</i> (36 gm) Purified <i>Tankana</i> - half <i>Tola</i> (6 gm) Purified <i>Sindhoora</i> - half <i>Tola</i> (6 gm)	Removes excess slough from <i>Vrana</i> , <i>Bhutaghna</i> (anti-microbial), purifies, and heals

			wounds. ^[23]
15.	<i>Sindhooradhy a Malahara (II)</i> ^[24]	<i>Siktha Taila</i> - 3 Karsha (36 gm) <i>Raala Churna</i> - half Tola (6 gm)	Same as <i>Sindhooradhy a Malahara I</i>
16.	<i>Mruddarshruna Malahara</i> ^[25]	<i>Siktha Taila</i> - 1 Pala (48 gm) Purified <i>Mruddarshruna</i> - 1 Tola (12 gm)	<i>Twachya</i> (beautifying), <i>Bhagna Sandhanajna</i> (heals wound due to open fracture), <i>Paama-Kandu Nashaka</i> (itching due to scabies), cures <i>Vipadika</i> (palmo-plantar psoriasis), purifies and heals wounds, for various anal diseases. ^[26]
17.	<i>Mruddarshruna Malahara II</i> ^[27]	<i>Aatsi Taila</i> (Flax seed oil) - 1 Pala (48 gm) Purified <i>Mruddarshruna</i> - 1 Tola (12 gm)	<i>Twachya</i> (beautifying), and heals all type of wounds. ^[28]
18.	<i>Gairikadhya Malahara</i> ^[29]	<i>Siktha Taila</i> - 6 Tola (72 gm) Purified <i>Swarna Gairika</i> - 1 Tola (12 gm) <i>Haridra Churna</i> (<i>Curcuma longa</i>) - 1 Tola (12 gm) Purified <i>Sindoora</i> - 1 Masha (12 gm)	<i>Kandu</i> (Itching) and burning sensation and heals various types of wound.

DISCUSSION

Malahara Kalpana is a type of *Bahiparimarjhana Kalpana*. Here bees wax acts as base for *Malahara* and also imparts therapeutic property. *Tila Taila* is said to be beneficial for hairs and skin.^[30] As a combination *Siktha Taila* imparts *Snehana* (oleation), and protective properties to skin and *Vrana* (wound).^[31] *Siktha Taila* when incorporated with other *Dravyas* attains better therapeutic value. The ratio of *Siktha Taila*, *Siktha* and other base varies according to the ingredient used in the formulation. If the ingredient found to be *Tikshna* (potent) the quantity of base is found to be more. In *Rasa Pushpadhya Malahara* the ratio of *Rasa Pushpa* and *Siktha Taila* is 1:24 that shows the potency of *Rasa Pushpa*, so here amount of base is more.^[32] In *Yasada Amrita Malahara* ratio of *Yasada* and *Siktha Taila* is 1:3 as *Yasada* is *Sheeta Virya* in nature.^[33] Among other bases used in making *Malahara Kalpana* in *Rasa Tarangani* are *Navneeta* (butter/*Shatadhauta Ghrita*), *Go Ghrita*, *Aatsi Taila* (flax seed oil). *Navneeta* (*Shatadhauta Ghrita*) is used for external application in *Daha* (burning sensation), *Vrana* (wounds), *Visarpa* (erysipelas), and various skin disorders.^[34] *Go Ghrita* is *Vrana Ropaka* (wound healing property), *Visarpa Nashaka* (cures erysipelas), and cures diseases related to *Rakta* (haematological diseases).^[35] *Aatsi* oil pacifies *Vata* and is beneficial for skin.^[36]

CONCLUSION

Malahara Kalpana is *Bahirparimajhana* type of *Ausadha Kalpana* mainly adopted from unani system of medicine. The very first description of *Malahara Kalpana* in Ayurveda is seen in *Yogaratanakara*. *Rasa Tarangani* a Ayurveda treatise of 20th century has enumerated various *Malahara Kalpana* by using different base and ingredients having *Vrana Shodhana* and *Ropana* properties (wound cleaning and healing). It has its own therapeutic advantage like easy pharmaceutical procedure, ease of mode of application and higher shelf life period.^[37] Undoubtedly, this still remains the topic of research. Exploring such dosage form and many more which are quite untouched and useful in treatment shall be

penned and compiled so that these could be brought to light and expand the horizon of the science.

REFERENCES

1. Raspushpadya Malhar - A Least Explored Formulation of Parad, World Journal of Pharmaceutical Reserach, Vol 7, Issue 14, 2018. Dr. Gayatri Gaonkar.
2. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 2nd Taranga, Sloka 34, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 17.
3. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 4th Taranga, Sloka 59-61, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 114.
4. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 4th Taranga, Sloka 62-63, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 115.
5. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 4th Taranga, Sloka 64, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 115.
6. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 4th Taranga, Sloka 52-53, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 113.
7. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 4th Taranga, Sloka 54-55, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 113.
8. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 4th Taranga, Sloka 56-58, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 114.
9. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 6th Taranga, Sloka 129-134, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 129.
10. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 8th Taranga, Sloka 59-62, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 186.
11. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 8th Taranga, Sloka 63-65, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 186.
12. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 9th Taranga, Sloka 25-26, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 203.
13. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 9th Taranga, Sloka 27-31, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 204.
14. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 11th Taranga, Sloka 78-82, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 256-257.
15. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 13th Taranga, Sloka 96-99, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 321-322.
16. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 13th Taranga, Sloka 112-114, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 324.
17. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 19th Taranga, Sloka 146-147, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 483.
18. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 19th Taranga, Sloka 148, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 483-484.
19. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 97-98-, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 539.
20. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 99, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 539.
21. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 100-104, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 539.

22. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 156-157, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 548-549.
23. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 158, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P-549.
24. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 159, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P-549.
25. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 173-174, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P-552.
26. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 174-176, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P-552-553.
27. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 177-179, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P-553.
28. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 21st Taranga, Sloka 180, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P-553.
29. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 22nd Taranga, Sloka 130-132, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P-598-599.
30. Bhavaprakasha Nighantu of Acharya Bhavaprakasha, hindi commentary, edited by Prof. K.C. Chunekar, Taila varga, sloka 2-7, Varanasi, Chaukhambha bharti academy, Reprint, 2013, P-763.
31. Malahara Kalpana – An Ancient And Modern Pharmaceutical Approach, IAMJ: April, 2017, J Poonam Bhojak Et al.
32. Critical review on ratio of ingredients in malahara *Kalpana* (ayurvedic ointments), Journal of Ayurveda and Holistic Medicine, November, 2013, Vol 1, Issue 8, Vinyasa T E Et al.
33. Sadananda Sharma, Rasatarangani, hindi commentary, edited by Pandit Kashinatha Shastri, 19th Taranga, Sloka 120, Delhi; Motilal Banarasidas; 11th edition, Reprint, 2012. P- 479.
34. Bhavaprakasha Nighantu of Acharya Bhavaprakasha, hindi commentary, edited by Prof. K.C. Chunekar, Navneeta varga, sloka 1-2, Varanasi, Chaukhambha bharti academy, Reprint, 2013, P-757.
35. Bhavaprakasha Nighantu of Acharya Bhavaprakasha, hindi commentary, edited by Prof. K.C. Chunekar, Ghrita varga, sloka 4-6, Varanasi, Chaukhambha bharti academy, Reprint, 2013, P-758.
36. Bhavaprakasha Nighantu of Acharya Bhavaprakasha, hindi commentary, edited by Prof. K.C. Chunekar, Taila varga, sloka 17-19, Varanasi, Chaukhambha bharti academy, Reprint, 2013, P-765.
37. <http://ayush.gov.in>. Gazette notification GSR No. 789(E) dated 12th Augus, 2016 for revising shelf life of ASU drugs.

How to cite this article: Dr. Dubey Somil. Review of Malahara Kalpana of Rasa Tarangani. J Ayurveda Integr Med Sci 2019;2:79-84.

<http://dx.doi.org/10.21760/jaims.4.2.15>

Source of Support: Nil, **Conflict of Interest:** None declared.
