ABSTRACT

Agnikarma, an ancient para surgical modality is lauded for its multifaceted results. Foremost written record of the utility of heat therapy in squashing ailments was found in Ancient Ayurvedic treatises. An alarming downfall in practice of this modality has been noted in Buddhism period, but of late, it is gaining popularity. Ayurvedic Postgraduate institutions are conducting researches on various indications of Agnikarma cited by Sushruta. 160 research works are being reported across India among various institutions targeted mainly on musculoskeletal ailments. There is enormous scope for researchers on Agnikarma and a number of indications are yet to be tested through clinical studies.

KEYWORDS

Agnikarma, Heat therapy, Cauterization
INTRODUCTION

Agnikarma, a para surgical modality advocated in Ancient Ayurvedic texts, is advancing popularity. Agnikarma, correlated to Moxibution of contemporary science is one of age-old modality offering aid to the musculoskeletal disorders. The form of transfer of heat either through direct or indirect mode with the help of certain materials or herbs to produce a therapeutical burn of dry or moist form is considered as Agnikarma. An ample number of diseases indicated to be treated by Agnikarma from simple Headache to a grave malignant condition and are said to be cured by proper implementation of the procedure giving due consideration to the principles and guidelines cited\textsuperscript{1,2,3,4}. Research activities have gained a momentum since few decades in India, this article details about the studies conducted on Agnikarma from the inception of the Postgraduate Studies in the Ayurvedic curriculum. Around 160 research works are conducted on Agnikarma till 2017 from inception of PG studies across Ayurvedic Institutes in India, which was carried out mainly on various musculoskeletal diseases. The information gathered from the titles of the researches is being assessed, as the entire thesis was not accessible for comprehensive review of the works.

MATERIALS & METHODS

- Titles of the thesis are procured from ‘Researches in Ayurveda’- A classified directory of PG & PhD research works carried out at various institutions throughout India, compiled by Prof. M.S.Baghel\textsuperscript{5}.
- By personal communication with certain institution / faculty members.

Method: Personal communication.

Observations & Discussion:

Across the India, a good number of research works are being carried out on Agnikarma, which is gaining popularity. It is one of age old treatment modality which was cornered few decades back, but at recent times its popularity is appreciable. In India, 160 research works are reported from various Ayurvedic Institutions.

Limitations:

The main limitation of this article is, the only data which can be gathered by the titles of study are being analyzed. Many of the titles of the studies yield scarce information on details of study. Research Methodology adopted in all these studies could not be retrieved.
Table No.1 shows number of research works across India, in which bulk of research works are done Govt. Ayurvedic Medical College, Bangalore.

### Table 1

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>College</th>
<th>No. of works</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Govt. Ayurvedic Medical College, Bangalore, Karnataka</td>
<td>22</td>
</tr>
<tr>
<td>2.</td>
<td>Institute For Postgraduate Teaching &amp; Research In Ayurveda Gujarat Ayurved University, Jammagar, Gujarat</td>
<td>21</td>
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<tr>
<td>3.</td>
<td>K V G Ayurveda Medical College &amp; Hospital, Sullia, Karnataka</td>
<td>16</td>
</tr>
<tr>
<td>4.</td>
<td>Ayurved Mahavidyalaya, Nasik, Maharashtra</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Govt. Ayurvedic College, Trivendrum, Kerala</td>
<td>09</td>
</tr>
<tr>
<td>6.</td>
<td>Alva’S Ayurvedic Medical College, Moodbidri, Karnataka</td>
<td>09</td>
</tr>
<tr>
<td>7.</td>
<td>National Institute Of Ayurveda, Jaipur, Rajasthan</td>
<td>10</td>
</tr>
<tr>
<td>8.</td>
<td>Rajiv Gandhi Govt. P G Institute of Ayurveda, Paprola Himanchal University, Shimla, Himachal Pradesh</td>
<td>06</td>
</tr>
<tr>
<td>9.</td>
<td>Faculty Of Ayurveda Institute of Medical Sciences, Varanasi, Uttar Pradesh</td>
<td>06</td>
</tr>
<tr>
<td>10.</td>
<td>Shri Jagadguru Gurusiddehswar Co - Operative Hospital and Research Institute (Shri J G C H Society), Ghapatrabha, Karnataka</td>
<td>05</td>
</tr>
<tr>
<td>11.</td>
<td>S N K Jashbhetty Ayurvedic Medical College, Bidar, Karnataka</td>
<td>04</td>
</tr>
<tr>
<td>12.</td>
<td>S D M College Of Ayurveda, Hassan, Karnataka</td>
<td>03</td>
</tr>
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<td>13.</td>
<td>Ayurved Mahavidyalaya, Hubli, Karnataka</td>
<td>03</td>
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<td>14.</td>
<td>S D M College Of Ayurveda, Udupi, Karnataka</td>
<td>04</td>
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<tr>
<td>15.</td>
<td>R K Toshaniwal Ayurveda Mahavidyalaya, Akola, Maharashtra</td>
<td>03</td>
</tr>
<tr>
<td>16.</td>
<td>Munival Institute Of Ayurveda Medical Sciences, Manipal, Karnataka</td>
<td>03</td>
</tr>
<tr>
<td>17.</td>
<td>Bharti Vidyapeeth’s University, College of Ayurved, Pune, Maharashtra</td>
<td>03</td>
</tr>
<tr>
<td>18.</td>
<td>Govt. Ayurveda Mahavidyalaya, Nanded, Maharashtra</td>
<td>02</td>
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<tr>
<td>19.</td>
<td>T M A E’S Ayurvedic Medical College, Hospet, Karnataka</td>
<td>02</td>
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<td>20.</td>
<td>Ashwini Ayurvedic Medical College, Davanagere, Karnataka</td>
<td>02</td>
</tr>
<tr>
<td>21.</td>
<td>Bhagwan Mahaveer Jain Ayurvedic Medical College, Gajendragad, Karnataka</td>
<td>02</td>
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<tr>
<td>22.</td>
<td>Sri Jagadguru Gavisiddehswar Ayurvedic Medical College, Koppat, Karnataka</td>
<td>02</td>
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<tr>
<td>23.</td>
<td>Shri Narayan Prasad Awathy Government Ayurved College, Raipur, Chattisgarh</td>
<td>02</td>
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<tr>
<td>24.</td>
<td>Shri Ayurveda Mahavidyalaya, Nagpur, Maharashtra</td>
<td>01</td>
</tr>
<tr>
<td>25.</td>
<td>Gopabandhu Ayurveda Mahavidyalaya Utkal University, Bhubaneshwar</td>
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<td>26.</td>
<td>Shri Shivayogeshwar Rural Ayurvedic Medical College &amp; Hospital, Inchal, Karnataka</td>
<td>01</td>
</tr>
<tr>
<td>27.</td>
<td>Rajiv Gandhi Ayurvedic Medical College, Ron, Karnataka</td>
<td>01</td>
</tr>
<tr>
<td>28.</td>
<td>Government Ayurveda College, Tripunithura, Kerala</td>
<td>01</td>
</tr>
<tr>
<td>29.</td>
<td>Rajasthan Ayurved University, Jodhpur, Rajasthan</td>
<td>01</td>
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<tr>
<td>30.</td>
<td>Yashwant Ayurvedic College,Post Graduate Training &amp;Research Center,Kodoli,Tal.Panhala,Dist.Kolhapur, Maharashtra</td>
<td>01</td>
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<tr>
<td>31.</td>
<td>Smt. Kamaladevi Gauridutt Mittal Puanrvasu Ayurved Mahavidyalaya, Mumbai, Maharashtra</td>
<td>01</td>
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<tr>
<td>32.</td>
<td>Hon. Shri. Annasaheb Dange Ayurved Medical College, Ashta, Sangli, Maharashtra</td>
<td>01</td>
</tr>
<tr>
<td>33.</td>
<td>Loknete Rajarambapu Patil Ayurvedic Medical College &amp; Hospital, Islampur, Sangli, Maharashtra</td>
<td>01</td>
</tr>
<tr>
<td>34.</td>
<td>R. A. Poddar Medical College (Ayu), Worli, Mumbai, Maharashtra</td>
<td>01</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>160</td>
</tr>
</tbody>
</table>

Agnikarma, a key para surgical procedure laid down by Ancient Indian System of Medicine, hasn’t been utilised much for serving the needy. The reason could be non applicability of this modality on various other systemic illnesses and dominance of Ksharasutra therapy in Ayurvedic surgical Practice. Sushruta has
elaborated a detailed, organized methodology of this modality. A number of disorders are said to be curable by Agnikarma. Supremacy of Agnikarma is being stressed by Sushruta among other surgical and para surgical procedures.

Screening of titles of these research works indicate, majority of works were targeted on Disorders related to musculoskeletal problem. The first research work was conducted on 1968 by SD Varshney at Banaras Hindu University, Varanasi. Based on the data gathered by the titles of the research works, it appears, 96 comparative, 60 observational, two literary and one survey study are being done. Among the research titles one study fails to clarify about the type of the study.

Table 2 Types of Research studies

<table>
<thead>
<tr>
<th>Types of Research Study</th>
<th>Number of Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparative Study</td>
<td>96</td>
</tr>
<tr>
<td>Observational Study</td>
<td>60</td>
</tr>
<tr>
<td>Literary</td>
<td>2</td>
</tr>
<tr>
<td>Survey</td>
<td>1</td>
</tr>
<tr>
<td>Not Clear</td>
<td>1</td>
</tr>
</tbody>
</table>

Gridhrasi [Sciatica] tops the table with 31 research studies followed by Sandhigata Vata [26 research works]. Two studies were related to conceptual, detailing about the literary information on Agnikarma. The indications cited by Sushruta are not entirely been tested. Disease wise specific sites are identified in the text and it’s noteworthy that, works assessing the rationality of the site of Agnikarma with that of disease are not been reported.

Table 3 Disease wise distribution of thesis works on Agnikarma:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amavata [Rheumatoid arthritis]</td>
<td>1</td>
</tr>
<tr>
<td>Aprapta Phalakosa [Hernia]</td>
<td>1</td>
</tr>
<tr>
<td>Ardhavahvedaka</td>
<td>2</td>
</tr>
<tr>
<td>Arshas [Haemorrhoids]</td>
<td>2</td>
</tr>
<tr>
<td>Avabahaka [Frozen Shoulder]</td>
<td>4</td>
</tr>
<tr>
<td>Bhagandara [Fistula in Ano]</td>
<td>2</td>
</tr>
<tr>
<td>Cancer</td>
<td>2</td>
</tr>
<tr>
<td>Carpel Tunnel Syndrome</td>
<td>1</td>
</tr>
<tr>
<td>Cervical Paraspinal Spasm</td>
<td>1</td>
</tr>
<tr>
<td>Garbhashaya Greevamukhagata Vrana (Cervical erosion)</td>
<td>6</td>
</tr>
<tr>
<td>Chalazion</td>
<td>1</td>
</tr>
<tr>
<td>Charmadala Kushta</td>
<td>1</td>
</tr>
<tr>
<td>Charmakeela [Wart]</td>
<td>7</td>
</tr>
<tr>
<td>Gridhrasi [Sciatica]</td>
<td>33</td>
</tr>
<tr>
<td>Iliotibial band friction syndrome</td>
<td>1</td>
</tr>
<tr>
<td>Kadara [Corn]</td>
<td>14</td>
</tr>
<tr>
<td>Kaphaja Shirashoohula</td>
<td>1</td>
</tr>
<tr>
<td>Karnini Yoni yuypad</td>
<td>1</td>
</tr>
<tr>
<td>Kati graham</td>
<td>1</td>
</tr>
<tr>
<td>Kati shooola – [Low buckache w.s.r. to Lumbar Spondylosis]</td>
<td>5</td>
</tr>
<tr>
<td>Laganam</td>
<td>1</td>
</tr>
<tr>
<td>Manyastambha</td>
<td>3</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>1</td>
</tr>
<tr>
<td>Pakshaghata [Paraplegia]</td>
<td>1</td>
</tr>
<tr>
<td>Parikartika [Fissure in Ano]</td>
<td>2</td>
</tr>
<tr>
<td>Sandhi gata Vata</td>
<td>28</td>
</tr>
<tr>
<td>Vata</td>
<td>1</td>
</tr>
<tr>
<td>Sandhi shoola [Arthralgia]</td>
<td>1</td>
</tr>
<tr>
<td>Snyayugata Vata [Tennis elbow]</td>
<td>10</td>
</tr>
<tr>
<td>Vataja Shirashoohula</td>
<td>2</td>
</tr>
<tr>
<td>Vatakanatika [Plantar fasciitis]</td>
<td>14</td>
</tr>
<tr>
<td>Vicharchika [Psoriasis]</td>
<td>1</td>
</tr>
<tr>
<td>Vishwachi – Cervical Spondylosis</td>
<td>1</td>
</tr>
<tr>
<td>Pain management</td>
<td>2</td>
</tr>
<tr>
<td>Retrocalcaneal bursitis</td>
<td>1</td>
</tr>
<tr>
<td>Not mentioned</td>
<td>05</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
</tr>
</tbody>
</table>

Almost all works are seems to be aimed at painful ailments specific to musculoskeletal ailments. Pakshaghata
[Paraplegia/Hemiplegia] was treated by Agnikarma in one of the study. Two studies are on cancer, but, not specifying the type of neoplasm.

Few Shalakya disorders were also studied by adopting this para surgical procedure. Few studies were also reported on Gynaecological conditions.

Although Agnikarma is indicated in various medicinal and surgical conditions, yet it’s being more tested on musculoskeletal problems. No study has attempted to standardize the procedure nor all the materials cited in the treatise for agnikarma is evaluated. This review revealed the need for the studies to be conducted on other indications too. The multifaceted results of Agnikarma must get wider recognition and a push is needed to enhance more research activities in this line.

**Untouched areas of research in Agnikarma:**

- Simplification and standardisation of the procedure is technological advancement of the materials used in the procedure.
- Technological modification of *dahana upakarana* [Materials used for Agnikarma]
- Evaluation of Ayurvedic claim of non recurrence of illness by Agnikarma.

- Utility of *Agnikarma* in ophthalmological ailments
- Utility of *Agnikarma* in dermatological disorders

A good number of Ayurvedic practitioners laud the benefits of Agnikarma in preventing certain bone replacement surgeries like Hip replacement or knee replacement surgery. Evidence based study in large sample has to be done. Early stage Hernia is said to be corrected through *Agnikarma* by employing semicircular shaped rod like instrument [Ardhendu Shalaka] on near the superficial inguinal ring to occlude the contents to herniate.

**CONCLUSION**

The review denotes *Agnikarma* is researched for various musculoskeletal conditions and only a meagre number of researches are carried out on other indications specified by *Sushruta*. The procedure is being used mainly for analgesic actions, is truly alarming, and as curative and non recurrence action of the procedure is least tested. This study also stresses the need for the research studies to be carried out on unexplored ailments cited to be treated by *Agnikarma* and also validate the effects of *Agnikarma* by scientific reasoning.
REFERENCES

5. Baghel MS, Researches in Ayurveda; Mridhu Publications, Jamnagar. 2005
15. Suresh v Amberker, Role of Agni karma in the Management of Ardhava Bhedhaka - A Clinical Study. 2005
19. Mahilange Rameshwar, Role Of Agnikarma And Masha Tailam In The Management Of With Special Reference To Frozen Shoulder. 2015
32. Chimate Hemlata K. A Comparative Clinical Study Of Agnikarma With Medicated Varti And Swarna Shalaka In The Management Of Garbhashaya Griva


34. To study the role of Agnikarma in Preventing recurrence of Lagan after surgical incision and curette with special reference to chalazion. 2009-10.


37. To Study The Effect Of Agnikarma In The Management Of Charmakeela With Special Reference to Wart . 2015.


40. Anup. P. A Comparative Clinical Study On Efficacy Of Chitraka Kshara And Agnikarma With Louha Shalaka In Charmakeela With Special Reference To Warts 1998.


51. To study the clinical efficacy of Agnikarma location in the management of Gridhrasi w.s.r to Sciatica. 2009-10.


54. Yogitha Bali M R. Efficacy of Agnikarma over the Padakanistakam(Little Toe) & Katibasthi in Gridhrasi- A Comparative Study

55. Kalpitha E. A Comparative Clinical Study To Evaluate The Efficacy Of Agnikarma And Siravyadha In Gridhrasi(Sciatica). 2014.


63. Shajeev M M. A Comparative Study On Efficacy Of Agnikarma With Tamra And Loha Salaka In Gridhrasi. 2013.

64. Deepthi S. A Clinical Evaluation Of Efficacy Of Agnikarma And Raasna Guggulu In Gridhrasi – A Comparative Study.


67. G.Jitamanya. Efficacy Of Siravyadha As Against Agnikarma In Gridrasi.

68. Ananda Kumar.M.Wodeyar. A Comparative Clinical Study To Evaluate The Effect Of Agnikarma And Matrabasti
In The Management Of Gridhrasi With Special Reference Sciatica. 2015.
70. Sachin Devidas Rathod. A Comparative Clinical Study Of Agnikarma And Siravyadha In Gridhrasi
71. Ashwini N Hallada. Clinico Comparative Study Of Agnikarma In Gridrasi As Per Guidelines Of Chakradatta And Charaka( Little Toe And Ankle Joint).
74. Sushila Devi. A clinical study to evaluate the effect of Agnikarma in management of Gridhrasi.
75. Santosa SR. A comparative study of the efficacy of Basti Karma and Agni Karma on Gridhrasi [Sciatica]
77. Swapnil D.Saindane. A Clinical Study On The Role Of Agnikarma In The Management Of Ilio tibial Band Friction Syndrome. 2014.
80. study on the efficacy of Agnikarmas in Kadara. 1990.
83. S Usha Rani. A clinical study on Kadara and its management with special reference to Agni karma.
84. Gunjawate Navnath Anandrap. The Clinical Study on the management of Kadara (Corn) with Chedan and Agni Karma. 2006.
85. Manoj Kumar Singh. A critical analysis of Agnikarma w.s.r to management of Kadara. 2012.
88. Govindola Ramesh. Clinico Comparative Study Of Chedan paschat Agnikarma And Kshara Karma In Preventing The Recurrence Of Kadar With Special Reference To Corn. 2009.
89. Rajesh Kumar Yadav. Role Of Agnikarma After Shastra Karma In The Management Of Kadara With Special Reference To Corn. 2015.


94. Vikram Balu. Shamaaushadi With Agnikarma On Kati Graha With Special Reference To Low Back Ache. 2015.


100. Harisankar T N. Clinical study to evaluate the efficacy of Agnikarma in the management of Laganam. 2006.


106. Aparna A. A Clinical Study On Role Of Agnikarma With Special Reference To Cauterization In The Management Of Chronic Fissure In Ano. 2015.
111. Umesh Segal K B. Role of Agnikarma and Ajmodadi Vati in the management of Sandhigata Vata w.s.r. to Cervical Spondylosis. 2007.
125. Chithra Chandran. A Comparative Clinical Study On Efficacy Of Agnikarma By Rajatha Shalaka And Upanaha By Kottamchukkadhi Choorna In Janusandhigatavata.
127. Swetha K S. A Comparative Clinical Study On The Efficacy Of Agnikarma And Upanaha Sweda In Sandhigata Vata With Special Reference To Janu Sandhi. 2015.
130. Anish Viswanadhan. A Comparative Clinical Study In The Management Of Jaanu Sandhigata Vata With Special Reference To Osteoarthritis Of Knee With Agnikarma And Kolakulathadi Upanaham.
132. Shubhangi Gathe. A Comparative Study Of Conductive And Direct Method Of Agnikarma With Tamra Shalaka In Sandhigatuva With Special Reference To Osteoarthritis Of Knee Joint. 2015.
140. Durgaprasad A.V. A Comparative Clinical Study On Efficacy Of Agnikarma And Upanaha Sweda In The Management Of Snayugatha Vata With Special Reference To Golfer’s Elbow
141. Sandeep V S. A Clinical Comparative Study Of Agnikarma With Loha Soochi & Panchaloha Shalaka In The Management Snayugatha Vata With Special Reference To Tennis Elbow. 2015.
143. Vaisakh M R. A Comparative Study of Agnikarma with Tapta Guda Paka and Panchadhathu Shalaka In Tennis Elbow.
146. Upadhyay Pravinkumar Dayasagar. To Study The Role Of Agnikarma On Kurparsandhishool With Special Reference To Tennis – Elbow. 2014.
147. Champavathi P. A Comparative Study To Evaluate The Efficacy Of Vyadhana Karma And Agnikarma In Vataja Shirashoola.
149. Study Of The Efficacy Of Agnikarma By Mruttika Shalaka On Vatakantaka With Special Reference To Plantar Fascitis. 2015.
152. Vedapriya.V. To Evaluate The Efficacy Of Tamra Suchi Agnikarma In The Management Of Vatakantaka With Special Reference To Plantar Fasciitis. 2014.
154. Deepak D. The Role of Agnikarma in Vathakantaka w.s.r. To Achilles Tendinitis and Plantar Fascitis.
156. Dharmendra Narain Singh. To Evaluate The Efficacy Of Agnikarma With Swarna & Rajat Shalaka In The Management Of Vatakantaka.
161. Preetha. M. Randomized controlled trial to assess the efficacy of Agnikarma in Vathakantaka (Painful Heel).
170. Rachanatmak Study Of Agnikarma Sthana At Shankhpradesh With Respect To Modern Anatomy. 2014.