

REVIEW OF RECENT RESEARCHES ON VATI KALPANA

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Abstract: In Ayurvedic therapeutics, bhashajya chikitsa is given prime importance and is placed secondly in the padachatushtaya. Vati kalpana is one among the important secondary preparation in Ayurvedic pharmaceuticals and are largely produced in world of Ayurvedic and modern field and is a solid dosage form. Ayurvedic classics considers it as an outcome of kalka kalpana. It has been widely accepted in the present clinical practise because of its accuracy in dosage, longer shelf life and palatability. Even though there are a neumerous formulations of vati kalpana are described in Ayurvedic classics a few are been phytochemically physiochemically nad clinically validated. The analysis of chemical markers of Ayurvedic and other poly herbal formulations are always been a concern and there should be eminent studies to be conducted to validate their acceptance so as to bring efficacy of various formulations to light to the development of science and mankind.

Key words: Vati Kalpana, Standardization, Guggulu Kalpana.

INTRODUCTION

Vati Kalpana is one among the important secondary preparation in Ayurvedic pharmaceuticals. This is largely produced in the world of Ayurvedic and Modern field and this is a solid dosage form. Classics of Ayurveda considered it as an outcome of *kalka Kalpana* and Acharya Vagbhata mentions as "*kalkaat bhedaat*". Later on, Acharya Sarangadhara has mentioned a specific chapter for preparing *vati* by specific techniques *Vati* may be of herbal, herbo-mineral or mineral drugs. Vatis are made in the shape of flat circular mas and hence it is similar to tablet and some scholars compared vati with pills also.

Standardization and analysis of the chemical marker of the Ayurvedic and other poly herbal formulation has always been a concern. Vati kalpana is widely accepted in present clinical practice because of its accuracy in dosage, longer shelf life & palatability. So, there should be eminent studies to be conducted to validate their acceptance. For that physico chemical analysis, pre-clinical and clinical studies should be done

AIM AND OBJECTIVES: To compile the recent researches of Vati Kalpana done during the period 2000 – 2018.

METHODOLOGY

1. Review of various peer reviewed journal on researches done on vati kslpana during the period 2010 – 2018
2. Review of dissertations submitted in Government Ayurveda College, Trivandrum on Vati kalpana during the period 2010 – 2018

Ttable No.1 Analytical studies on vati kalpana during the period 2010 – 2018

No	Authors	Title
1	Sandhya Parameswaran & Nandan D Mandar	Standardization of an ayurvedic formulation Sanjeevanivati [2010]
2.	Weerasekera K.R., Wijayasiriwardhena C, Dhammarathana I, Tissera MHA, Ariyawansha HAS	Establishment quality and purity of "Chandraprabhavati" using sensory characteristics, physiochemical parameters, qualitative screening and TLC fingerprinting. [2014]
3	Khanvilkar, VineetaKulkarni, Kirti Kadam, Vilasrao	Standardization of KankayanVati: An Ayurvedic Polyherbal Formulation. [2014]
4	K R Gopala Simha, V Lakshmi Narayana, SVLN Prasad, Shahjahan Khanum	Standardization of yogarajaguggulu—an Ayurvedic polyherbal formulation [2008]
5	Princy Agarwal1, Rajat Vaishnav and Mahendra Singh Ranawat	Evaluation of Quality Parameters of Three Different Marketed Brands of YogarajGugguluVati: A Polyherbal Formulation [2018]
6	SuleHareshwar, Belge Raman, Deshpande Sarang, Gadkari Kishor	Pharmaceutical and analytical validation of yogaraj guggul tablet – a polyherbal ayurvedic formulation [2017]

7	A K Meena, Ayushy Sachan, Ramanjeet Kaur, Bhavana Pal, M. M. Rao, Brijendra Singh and Santosh Kumar Mishra	Quality Assessment of Different Variants of YogarajGuggulu [2010]
8	Arjun Singh, Sarada Ota, Narayan Srikanth, Ruknuddin Galib, Sreedhar Bojja and Kartar Sing Dhiman	Application of Spectroscopic and Chromatographic Methods for Chemical Characterization of an Ayurvedic Herbo-Mineral Preparation: MahaYograjGuggulu [2018]
9	N. Sumantran, Asavari A. Kulkarni Abhay Harsulkar, Asmita Wele Soumya J. Koppikar Rucha Chandwaskar Vishakha Gaire Madhuri Dalvi, Ulhas V. Wagh	Hyaluronidase and collagenase inhibitory activities of the herbal formulation Triphalaguggulu[2007]
10	Shreeram.S,Savarikar, Maneesha M. Barbhind, Umakant K. Halde, Alpana P. Kulkarni	Pharmaceutical and analytical evaluation of triphalaguggulkalpa tablets
11	Patel Vikas, Gupta S.N, Patel Manish, Kalsariya Bharat	Physicochemical & phytochemical evaluation of gokshuradiguggulu - an ayurvedic herbal formulation [2017]
12	Nisargi Ramachandra S, Dave Alankruta R, Harisha C. R, Shukla V. J.	Pharmacognostical and phytochemical evaluation of gokshuradiguggulu - an ayurvedic polyherbal formulation [2015]
13	Pathak A. V, Kawtikwar P. S, Sakarkar D. M.	Pharmacognostical and Physico-Chemical Standardization of TriphalaGugguluVati: An official Ayurvedic Formulation [2011]
14	Vd. Pooja Vihariya, Dr. Shilpa Donga, Harisha C.R. and Shukla V.J.	A pharmacognostical and phyto-chemical assay of kanchanaraguggulu – a promising medicine for beejakoshagranthi (ovarian cyst) [2017]
15	Rakesh A ,Remya A , Divya Ravindran	Evaluation of the antitumor activity of ayurvedic formulation kanchanaraguggulu on n-methyl-n-nitrosourea (nmu) induced mammary tumor in sprague-dawl [2016]
16	Ila Tanna, S. M. S. Samarakoon, H. M. Chandola and V. J. Shukla	Physico-chemical analysis of a Herbo-mineral compound Mehamudgaravati – A pilot study [2011]
17	Shreeram SSavarikar, ManeeshaM.Barbhind, Umakant K. HaldeAlpana P. Kulkarni	Pharmaceutical and analytical evaluation of triphalaguggulkalpa tablets [2011]
18	Amrita Mishra,Arun K Mishra,Ashoke K Ghoshand Shivesh Jha	Standardization of a Traditional Polyherbo-Mineral Formulation-Brahmi Vati [2013]
19	P. Pattanayak, P. Mohapatra, R. K. Jena S. K. Panda	Standardization of Sulaharan Yoga: An Ayurvedic Tablet Formulation
20	Umapati C. Baragi, Pramod C. Baragi, Mahesh K. Vyas, Vinay J. Shukla	Standardization and quality control parameters of DashangaKwathaghana tablet: An Ayurvedic formulation
21	Dr.Sheelpriya R. Walde and Dr. R. Rachana Devendra	Microbial evaluation of a marketed herbo-mineral Formulation tribhuvankirti rasa [2017]
22	Dr. Manoj Kumar	Physico Chemical Analysisof Vettarmarangutika and evaluation of its antipyretic & analgesic activity.
23	Dr. Varsha N*, Dr.Jeevesh K.B.	Evaluation of Physio-chemicaland Antipyretic activity of Ananda Bhairava Rasa [2015]
24	Pallavi Raia, and Sadhana J. Rajputb	Preparation and physicochemical characterization of ingredients of Indian traditional medicine, Mahamrutyunjaya Rasa [2017]
24	Pallavi Y C , Nagaraja T N	Standardization of laghusutashekhara rasa – an analytical

		Study [2016]
26	Ota S, Singh A, Srikanth N, Sreedhar B, Ruknuddin G, Dhiman K	Chemical Characterization of an Ayurvedic Herbo-Mineral Formulation - Vasantakusumākara Rasa: A Potential Tool for Quality Assurance. [2017]
27	Gopi Krishna Maddikera Ranjith. B. M Lavanya. S. A Parikshitha Navada	Pharmaceuticoanalytical study of shrirambanarasa [2019]
28	Chandra Sekharyuvaraj Jagpad Pradeep prajapathi	Standard Manufacturing Procedure of Hridayarava Rasa – A Herbo-Mineral Formulation [2018]
29	S.D.Pawale, R.M.Suryawanshi R. Ingole	Pharmaceutico analytical study of "durjalajeta rasa" [2015]
30	Vikas Saroch, R. S. Hiremath	Preparation and physico-chemical analysis of apasmarari rasa – an ayurvedic formulation [2014]
31	M, Vijayaraj	Preparation, Physico-chemical analysis of „Suryavarta Rasa“ and evaluation of its anti-histaminic activity” – An experimental study [2016]
32	A Singh, Ota Sarada, Narayanam Srikanth, Sreedhar Bojja	Chemical characterization of an Ayurvedic herbo-mineral preparation-Arogyavardhani Vati: A potential tool for quality assurance [2014]
33	Lanjewar Ranjana, Belge Raman, Deshpande Sarang, Pable Tarun	Preparation and evaluation of herbo-mineral drug: arogyavardhinivati (tablet) [2017]
34	Padhar Bharatkumar C, Dave Alankruta R, Harisha CR., Shukla VJ	Preliminary pharmacognostical and phytochemical evaluation of arogyavardhini compound- an emerging formulated medicine for metabolic syndrome [2017]
35	Yuga Raj Sapkota, Prashant Bedarkar, Galib, V.J. Shukla, P.K. Prajapati	An impact of Mardana- A comparative study on Arogyavardhini Rasa [2016]
36	Yuga Raj Sapkota, Prashant Bedarkar, V.J. Shukla, P.K Prajapati	Quality Control Parameters of Arogyavardhini Rasa prepared by classical method [2017]
37	Watkar Deepali P, Dive Mukund, Jamnekar Pallavi, Deshpande Sarang, Pable Tarun	Pharmaceutical standardization and preliminary physico-chemical profile of shankhavati (tablet) [2018]
38	Nutan M Dudhal, Manish Kondawar, Kiran A Wadkar, Sachin G Lokapure	Standardization of marketed ayurvedic formulation: Lavangadivati [2018]
39	Nutan M Dudhal, Dr. Kiran A Wadkar, Dr. Manish S Kondawar, Sachin G Lokapure and Tukaram N Mane	Standardization of marketed ayurvedic formulation: Lavangadivati [2016]
40	Sunita Shailajan, Sasikumar Menon, Manasi Yeragi, Vishakha Kelkar	Pharmacognostic evaluation of an ayurvedic formulation Eladi Gutika [2011]
41	Dr. Bharat Chhaganbhai Padhar [2015]	Pharmacognostical and phytochemical evaluation of tryoshnadigugguluvati: an ayurvedic polyherbal formulation
42	Drashti Desai and Rupa Sen Gupta	Standardization of Jeera Vati: An ayurvedic Polyherbal formulation [2016]
43	Vinay J Madhuri Rai Shukla, Tukaram Sambhaji Dudhamal	Pharmacognostical and phytochemical evaluation of trayodashangagugguluvati: an ayurvedic polyherbal formulation [2018]
44	H. Namana, Ganti Basavaraj Y. and Kadibagil R. Vina	Comparative analytical study of abhaguggulu [2018]
45	Kruti Vyas, Channappa Rudrappa Harisha, Vinay J Shukla, Galib Ruknuddin	Pharmacognostical and preliminary physicochemical profiles of Navaka Guggulu [2016]

46	Parashar Shalini, Prajapati P.K, Harisha C.R, Pandya D.H	Quality control parameters of vatariguggulu- an ayurvedic formulation [2016]
47	Jayanti Samanta, Monojit Debnath, Pallab K. Haldar, J. N. Pande1, AmaleshSamanta, Moulisha Biswas1	Preparation and standardization of nishalouhamvati- a randomly prescribed classical yoga [2015]
48	Sunitha G, Gazala Hussain	Pharmaceutical and analytical study of vishabilwadigitika[2017]
49	Jayaprakash.Y. Ratiyavar	A comparative pharmaceutico-analytical study of fresh & dry form of drug w.s.rguduchighanavati&kutajaghanavati [2012]
50	Palak Soni Maitreyi Zaveri, Sonal S Patel	Formulation and standardization of ayurvedic preparation of samshamnivati [2013]
51	Arun K, Tapas BT, Shivakumar, Sunil Kumar KN	Standardization of haridradivati of ayurvedic formulary of india (afi) [2013]
52	Ganesh Muguli, Vishakante D Gowda, Vishnu Dutta, Atul N Jadhav, Bibhilesh B Mendhe, Rangesh Paramesh, UV Babu1	A contemporary approach on design, development, and evaluation of Ayurvedic formulation - TriphalaGuggulu [2015]

Table No.2 Pre-clinical and clinical studies on vati kalpana during the period 2010 – 2018 STUDIES

No	Author	Title
1.	Alka Babbar Kapoor	Study of clinival efficacy on sanjeevanivati (S. S)&lasunadivati () in management of diarrhoea predominant IBS: a pilot study
2.	Kshama guptha, rasadmamidi	Ayurvedic Management of Acute Food Induced Anaphylactic Reaction - A Case Report (with sanjeevanivati and haridraghandam) [2017]
3	Mangesh Pawar1, Naina Vishwakarma2	To study the efficacy of sanjeevanivati in krimiraga with special Reference to intestinal helminthiases. [2016]
4	Vivek Sarma	A clinical study of efficacy of Vyoshadigitika and Pippalayadichurnaavapidanasya in the management of Pratishtyaya [2012]
5	Manish M. Wanjari, Sujata Mishra, Yadu Nandan Dey, Deepti Sharma, Sudesh N. Gaidhani, and Ankush D. Jadhav	Antidiabetic activity of Chandraprabhavati – A classical Ayurvedic formulation[2016]
6	Weerasekera.K.R.,Dhammarathana, I., Tissera A.H.M., Ariyawansha H.A.S. and Ratnasooriya, W.D	Anti-inflammatory activity of an ayurvedic herbo-mineral formulation: chandraprabhavati [2015]
7	Vidya Narayan, Vandana Baranwal	Efficacy of chandraprabhavati in polycystic ovarian disease [2016]
8	A. U. Wijenayake, C. L. Abayasekara, H. M. T. G. A. Pitawala and B. M. R. Bandara A. U.	Antimicrobial potential of two traditional herbometallic drugs against certain pathogenic microbial species [2015]
9	Shivaleela, Kashinath Hadimur, R. S. Sarashetti and K. A. Patil	Evaluation of analgesic activity of bruhatHinguleshwara rasa [2011]
10	Sana S Datta, GalibR Prajapati	Effect of Vasant Kusumakar RasinDiabetic Nephropathy inSTZ induced NIDDM in rats [2016]
11	Gandhi S, Srinivasan BP, Akarte AS.	An experimental assessment of toxic potential of nanoparticle preparation of heavy metals in streptozotocin induced diabetes.

		[2017]
12	Vikram Goshan, Ravi Mundugaru*, Narayana Prakash, Sudhakar Bhat, Ravishankar Basavaiah	Evaluation of neuro-protective activity of Brihatvata Chinthamani Rasa [2017]
13	Vishnu Prasad Gautam, Mukesh Dubey, Ranjip Kumar Dass, Govind Prasad Gupta, Sanjay Goswami	A clinical study to evaluate the efficacy of Chandrakala ras on madhumeha [2015]
14	Swapnil Yashwant Chaudhari, Galib Ruknuddin, Pradeep Prajapati, Jayram Hazra	Antihyperlipidemic activity of Hridayarna Rasa (an Ayurvedic herbo-metalomineral formulation) in Charles Foster albino rats [2018]
15	Saxena G.K, Dikshit Manisha	Clinical trial of hridayarna rasa in hritsoola [2015]
16	Verma Astha A.K. Singh	A clinical & comparative study of vatgajankushras and sallaki Tablet in the management of gridhrasi with special referencetosciatica [2016]
18	Shisode Nileema Raju	To study the effect of kutajaghana in atisarvegavastha (acute diarrhea) [2015]
19	Vikas Nariyal Omraj Sharma Kamini Dhiman	A combined efficacy of kaishoreguggulu and punarnavadiguggulu in the management of vatarakta (gout): a case series [2017]
20	Dr. Manisha Yadav and Prof. Dr. Sunil Kumar Joshi	A case study: "efficacy of abhaguggulu in the management of asthiBhagna" [2018]
21	Hemanta Kumar Panigrahi	The effect of abhaguggulu in the clinical management of fractures [1997]
22	Kshipra Rajoria, Sarvesh Kumar Singh, R.S. Sharma and S.N. Sharma	Clinical study on LakshaGuggulu, Snehana, Swedana & Traction in Osteoarthritis (Knee joint)

Table No.3 Researches conducted at government ayurveda college, Trivandrum [2000 – 2018]

No	Title	Author
1	A study on the effect of scheduled yoga therapy and navakaguggulu in hyperlipidemia	Sanesh. P. B [Swasthavritta – 2014]
2	A comparative clinical trial to evaluate the efficacy of 3 samples of vilwadigulika prepared in different media in dushivisha with signs and symptoms of kitibhakusta	Deepthi S R [Agada tantra – 2010]
3	The study on the efficacy of saphthasamagulika on dushivishajanyavicharchika	Asish Paul Thomas [Agada tantra – 2014]
4	Antivenum activity of mrithasanjeevanigulika against Daboia russellivenum by invivo and invitro methods	Sherin K [Agada tantra – 2015]
5	Effect of vilwadigulika and drakshadi Kashaya in non-alcoholic fatty liver diseases	Rakesh R B [Agada tantra – 2018]
6	Effect of vishadigulika and brihatyadi Kashaya in mutras mari	Remya R K [Agada tanta – 2018]
7	Physicochemical evaluation of swasandamguluka from different sources	Rahmath Beegum A [Rasasastra & Bhaishajya Kalpana – 2018]

8	A clinical trial to assess the combined effect of kanchanaraguggulu and trayanthyadiakashayam in uterine fibrosis	Manjusha Murali [Prasuthi tantra &Streeroga – 2012]
9	Clinical trial to evaluate the efficacy of madhuthailika yoga vasthi and simhanathaguggulu and brihatsaindhavadithailam in the management of rheumatoid arthritis	Aji K S [Panchakarma - 2012]
10	Combined effect of vatariguggulu and rasnadasamoolakwatha in rheumatoid arthritis	Aswathy R S [Kayachikitsa – 2017]
11	Effect of laksha arjuna guggulu in osteoporosis	Sreelakshmi R [Kayachikitsa – 2016]
12	The effect of kaidaryadigulika in diarrhoea dominant irritable bowel syndrome	Laveena T P [Kayachikitsa – 2018]
13	Effectiveness of amruthadiguggulu along with life style modifications in dyslipidaemia	Anju Satheesh [Kayachikitsa – 2015]
14	A comparative study of rasamruths and laghusuthasekhara rasa in the management of amlapitta	Vidya G [Rasasastra&Bhaishajya Kalpana – 2010]
15	A comparative clinical trial to evaluate the efficacy of three samples of vilwadigulika prepared in different media in dushivisha with signs and symptoms of kitibhakusta	Deepthi S R [Agada tanta – 2010]
16	Physicochemical analysis of vettumarangulika	Richa Raj [Rasastra&Bhaishajya Kalpana - 2016]

Ttable No.1 Review Papers on vati kalpana during the period 2010 – 2018

No	Author	Title
1	Purnendu Panda, S.K.Meher, Banamali Das, G.C.Bhuina	Tablet & tableting in Ayurveda (vati kalpana) –a review [2016]
2	Mukesh Ananta Chaudhari	Review of vati kalpana w.s.r.to sarangadharoktha vati kalpana [2017]
3	Tejaswi Nade	Sanjeevani vati and its efficacy in samprapthi vighatana [2015]
4	S. Gairala, Vikas Guptha, Parveen Bansal, M. Maithani, C Murali Krishna	Pharmacological activities of poly-herbal formulation: sanjeevani vati [2011]
5	Parul Rani, KhemchandSharma , Anil Kumar	Probable Mode of Action of SanjivaniVati - A Critical Review [2018]
6	AK Tripathi, SD Pandey, JLN Sastry, SasibhushanVedula.	Observations on Clinical Safety of Chandraprabha Vati - An Ayurvedic Metallo-Herbo Mineral Formulation [2016]
7	hagyalakshmi B R, GalibR Prajapati P K	Critical Review of Shwasakuthara Rasa – A Herbomineral Formulation Review Article [2015]
8	S.C. Shukla, E. Chakraborty, Geeta Tewari And S.R. Das	Arogya vardhiibati and anandbhairavaras, two Amoebicidal ayurvedic drugs [2014]
9	Archana Nanasaheb Dhole, Archana Chunilal Pithadiy	Hridayarnava rasa – a modern view [2015]
10	Santosh Pal, A Ramamurthy, BidhanMahajon	ArogyavardhiniVati: A theoretical analysis [2013]

RESULTS & DISCUSSION

In this study, 100 research papers in peer reviewed journals and dissertation in Govt. Ayurveda College, Trivandrum during the period 2000 – 2018 were reviewed. Among them 52 are analytical studies, 22 pre-clinical and clinical studies, 10 are review papers and the rest of the studies are conducted at Govt. Ayurveda College, Trivandrum. Almost all the guggulu preparations are analysed for their physico-chemical parameters and all are within the limit of API parameters. Acharya Sarangadhara explains a separate chapter for vati Kalpana and a review paper is available for SarangadharokthaVati Kalpana. Analytical studies include standardization, establishment of quality and purity, market sample analysis and physico chemical and phytochemical analysis.

CONCLUSION

Even though there are numerous formulations of vati Kalpana are described in our Ayurvedic classics a few are phytochemically, physico-chemically, pharmacologically and clinically validated. A lot of researches are yet to conduct for the same.

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