



CASE REPORT

ROLE OF KARPURADI ARKA AS A NEW DOSAGE FORM IN THE MANAGEMENT OF TAMAK SHWASA WSR TO BRONCHIAL ASTHMA: A CASE STUDY

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ABSTRACT

Karpuradi Arka is a liquid dosage form, which is combination of *Karpuraarka*, *Ajwayanarka*, and *Dagadfularka* in equal proportion. It is a folklore medicine mainly indicated in bronchial asthma and congestion in respiratory tract (nasal congestion). It acts by clearing airway passage combating *kapha* and *vata*. *Karpuradi Arka* is volatile in nature and having odor of camphor. It must be used with dilution in distilled water. This *arka* is used in the form of nebulization. A female patient came to the *Kayachikitsa* OPD of Khemdas Ayurveda Hospital, Ishwarpura. Patient had chief complaints of breathlessness at rest, chest tightness, discomfort at lying position, chest congestion, cough with expectoration etc. Breathlessness at rest subsided within 5-10 minutes after nebulization with *Karpuradi Arka*. After that patient was admitted in IPD and treated with various *Ayurvedic* formulations as per need. *Karpuradi Arka* breaks down the local pathology of *Tamak Shwasa* combating *kaphavrodhitvayu* in respiratory airway as well as relieves bronchospasm allowing the entry of *pranavayu* and exhalation of *pravruddhaudanavayu*. *Karpuradi Arka* is add-on treatment for the management of *Tamak Shwasa* as a new dosage form along with classical *kalpas*.

Keywords: New dosage form, bronchial asthma, *Tamak Shwasa*, *Karpuradi Arka*.

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INTRODUCTION

Arka is a liquid dosage form obtained by distillation of certain liquids or drugs soaked in water using the *Arkayantra* (a type of steam distillation apparatus) or any convenient modern distillation apparatus. It is a suspension of the distillate in water having slight turbidity and color according to the nature of the drugs used and odor of the predominant drug [1]. In the field of *Ayurvedic* Pharmaceutics, extraction technique i.e. the method by which, volatile oil and active principles of the drug are collected is called as *Arkakalpana*. The compound prepared through this procedure is called as *Arka*[2]. *Arka* is clear and transparent aqueous extracted medicinal herbs liquid. *Arka* can be used in the form of repulse to fill in nebulizer for nebulization.

Tamakashwasa (Bronchial asthma) can be compared with bronchial asthma [3]. Bronchial Asthma is a chronic inflammatory disorder of respiratory system, specifically airways causing hyper responsiveness of airways that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing mostly at night or in the early morning. Episodes of asthma are mostly associated with variable airflow obstruction that is often reversible either spontaneously or with treatment [4]. The burden of asthma has been increase drastically

in the healthcare. The prevalence and mortality rate from asthma have shown upward graph, irrespective of quality medications are easily available for asthma. Increase in the prevalence of Asthma is rather global in nature but there does difference exist between the epidemiology, clinical manifestation and the management practices in India and western countries [5]. *Tamakashwasa-Vegavastha* (Status asthmaticus) is a respiratory disease characterized by *Pratilomamyadavayu* (Prolonged expiration), *Gurghuraka* (Wheezing), *Ativa Tivra Vegam Ch Shwasa Prapedakam* (Dyspnoea-injurious to Life) [6].

To evaluate the efficacy of *Karpuradi Arka* in the management of *Tamakashwasa* (Bronchial Asthma) the method by which a drug is administered can have a significant effect on its efficacy. New drug delivery systems have been developed or are being developed to conquer the limitation of the conventional drug delivery systems to meet the requirement of the healthcare profession. To prove the fast action of *Karpuradi Arka* in acute condition of *Tamakashwasa* (Bronchial asthma)

Karpuradi Arka is a folklore medicine used for inhalation through nebulizer as bronchodilator. It acts by clearing the airways by alleviating Vata-Kapha and breaking *samprapti* of *Tamak Shwasa* [7].

Ingredients of Karpuradi Arka

SN	Name of Ingredients	Botanical name	Ingredients (%)	Part use
1	Karpur (Camphora)	Cinnamomum Camphora	1	Whole part
2	Ajmoda (Ajowan Caraway)	Trachyspermum ammi	1	Seed
3	Dagadful (Black stone flower)	Didymocarpus Pedicellatus	1	Sarvanga

Case report

A 60 years female patient came in OPD with the chief complaints of Dyspnoea at rest -since morning (SPO2-90%), cough with expectoration from 7 days, throat Congestion from 7 days, Fever (on/off) -2 days, *Ghabarahat* (on/off), Chest tightness (on/off) and Mild chest pain during or after coughing

Past History of Illness

Patient was a known case of Bronchial Asthma since 2 years but on irregular medication. Patient was taking *Ayurvedic* medication for the same since 1 month. No history of any surgical or other major illness. No family history of asthma and not having any kind of addiction.

The patients finding in *Astavidha Pariksha* (General examination) *arenadigati* was 115/min with *krushaaakriti* having weight of 45 kg. Bowel habit was irregular with *sakastamalpravrutti*. Patient's

mutrapravrutti was normal with *niramjivha* and *ksheenashabda*. *Drika* was prakrita with *ushnasparsha* having body temperature of 100⁰F.

No any abnormal findings were detected in CVS and CNS. Coarse wheezing sound was noted all over the chest in respiratory system examination.

Nidan Panchaka:

In *prashnapariksha*, patient had given the history about intake of curd, cold water before 15 days and chronic constipation with flatulence (on/off) as a *Nidana*. Also patient was passive smoker since last 10 years. During *purvarupavastha* patient had a symptoms of cough, throat congestion etc. Disease progresses in *ruvavastha* (Symptoms) with symptoms of cough with expectoration f/b dyspnoea, Chest tightness, *Ghabrahath*, mild Chest pain after cough.

Table 1: Vikrutitah Parikshana

Dosha	<i>Vata, Kapha</i>	Dushya	<i>Rasa</i>
Agni	<i>Mandagni</i>	Srotasa	<i>Pranavah, Anna, Udaka</i>
Adhishthan	<i>Urahpradesh, Pranavahsrotas</i>	Udbhavsthana	<i>Aamashaya</i>
Vyaktisthana	<i>Urahpradesh</i>	Rogmarga	<i>Aabhyantara</i>
Vyadhi	<i>Tamakashwasa</i>		

Table 2: Investigations

Lab Test		Before T/T
CBC	TLC (cumm)	10900
	Neutrophils	79
	Lymphocytes	15
ESR	mm/hr	84

- X-ray chest-PA: NAD
- Others: WNL
- ECG : WNL

Treatment given:

Patient was come in Khemdas Ayurveda Hospital with above mentioned symptoms. Actually it was an

emergency condition, so patient had given prop up position and immediately started nebulisation with *Karpuradi Arka* diluted in 10 parts of distilled water (1:10). Within 10 minutes of nebulisation patient got symptomatic relief. Patient was stable at that time.

Table 3: Showing recovery in vitals of patient, after giving nebulization by *Karpuradi Arka*.

Date	Before Nebulisation			After Nebulisation		
	PR	RR	SPO2	PR	RR	SPO2
18/04/2017	115	26	90	100	20	94
19/04/2017	84	22	92	82	20	95
20/04/2017	78	19	95	80	18	98
21/04/2017	86	20	95	80	20	98

PR: Pulse rate

RR: Respiratory rate

SPO2: Peripheral capillary oxygen saturation

Table 4: Hematological parameters

Lab Test		Day 1	Day 5	On Discharge
CBC	TLC (cumm)	10900	7300	-
	Neutrophils	79	63	-
	Lymphocytes	15	24	-
ESR	Mm/hr	84	37	21

Raw drugs of *Karpuradi Arka* was procured from Local market of Nagpur city and it was authenticated and prepared at Teaching pharmacy using distillation apparatus, *Rasashastra* and *BhaishajyaKalpana*, PIAR, Ishwarpura .

A diagnosed patient of *Tamak Shwasa* was taken from Khemdas Ayurved Hospital, *Kayachikitasa* OPD, Teaching Hospital of PIAR, Ishwarpura

Discussion: *Tamak Shwasa* is called *Tamaka* as attack of the disease precipitate during night and during its *vegavastha*, patient feels entering into the darkness. Main causative factors responsible for *TamakaShwasa* are *Dhuma* (smoke), *Raja* (dust), *Ativyayama* (excessive exercise/work), *Sheetasthananivasa* (residing in cold areas), *Guru bhojana* (heavy diet) and *Sheetabhojana* (cold food/drinks). These factors lead to the vitiation of *Vata* which in turn vitiates *Kapha* leading to vitiation of *Rasa* and impeding the function of

Pranavatasrotasa (Respiratory system). According to *Ayurvedic* literature, *vata* is captured by the *Aavrana* of *kapha* in this disease [8]. *TamakaShwasa* is respiratory disease. It is having two phases i.e. *vegavastha* and *avegavastha*. During *vegavastha* (emergency condition), there is requirement of fast acting and easily administrable dosage forms to control emergency condition. *Arkakalpana* is most suitable for administration of drug at respiratory tract. Hence *Arkakalpana* can be given through nebulization which is very convenient and patient friendly method. Pressurized air passes through the tube and turns the liquid medicine into a mist. During an asthma attack or a respiratory infection, the mist may be easier to inhale. Nebulizers are commonly used for the treatment of [asthma](#), [cystic fibrosis](#), [COPD](#) and other [respiratory diseases](#) or disorders^[9]. *Karpuradi Arka* is folklore medicine practiced in Nagpur district of Maharashtra as an

inhalation in patient of bronchial asthma. It is prepared by mixing crystals of *karpurarka*, *dagadfularka* and *ajvayanarka* which is procured from local market of Nagpur. But while using it for nebulization, that *arka* must be diluted in distilled water in the ratio of 1:10. Nebulization is safe, fast acting and easy method of administration of drug in emergency condition.

A patient came to the *Kayachikitsa* OPD of Khemdas Ayurveda Hospital, Ishwarpura. Patient has chief complaints of breathlessness at rest, chest tightness, discomfort at lying position, chest congestion, cough with expectoration etc. Breathlessness at rest subsided within 5-10 minutes after nebulization with *Karpuradi Arka*. After that patient was admitted in IPD and treated with various *Ayurvedic* formulations as per need. *Karpuradi Arka* breaks down the local pathology of *Tamak Shwasa* combating *kaphavrodhitvayu* in respiratory airway as well as relieves bronchospasm allowing the entry of *pranavayu* and exhalation of *pravruddhaudanavayu*. *Karpuradi Arka* is add-on treatment for the management of *Tamak Shwasa* as a new dosage form along with classical *kalpas*(formulations). *Karpuradi Arka* is liquid dosage form which is prepared by extracted crystals of medicinal herbs. It is a novel drug providing controlled delivery of drug, transporting of drugs intact to the site of action avoiding the non diseased tissue. *Arka* is easy to administer, safe, cost effective and reliable. *Karpuradi Arka* is a folklore medicine used for inhalation through nebulizer as bronchodilator. It clears the air passage by alleviating *Vata-KaphaDosha*. Help in *kaphachhedana* which further expelled out through the air passage. This entire procedure helps to normalize the inspiration of *Pranavayu* and

exhalation of *pravruddha UdanaVayu*. In this way, it breaks down the *samprapti* (pathogenesis) of *Tamak Shwasa* occurring in *Pranavasrotasa* and gave symptomatic relief in chest tightness, breathlessness, *ghabarahat* and throat congestion.

Conclusion:

Tamakshwasa is a disease of *Pranavahsrotasa* which is curable with the use of fast acting drugs like *Karpuradi Arka* along with meticulous use of *granthoktakalpas*(formulations mentioned in classical text). *Karpuradi Arka* is a folklore novel drug, providing controlled delivery of drug, transporting the drugs intact to the site of action avoiding the non-diseased tissue. It is easy to administer, safe, cost effective and reliable. *Karpuradi Arka* is add-on treatment for the management of *Tamak Shwasa* as a new dosage form along with classical *kalpas*.

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Cite this article as: Nisha Jagannath Munishwar, Rakesh Bramhankar. Role of Karpuradi Arka as a new dosage form in the management of Tamak Shwasa W.S.R. to Bronchial Asthma: a case study. *J of Ayurveda and Hol Med (JAHM)*.2019; 7(4): 74-79

Source of support: Nil

Conflict of interest: None Declared