



## RASA Aushadhis: A stream of light amidst the darkness of COVID-19 pandemic

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### ABSTRACT

Today the world is facing a global health crisis due to the emergence of a novel corona virus SARS CoV-2. Despite ongoing multiple researches and established treatment paradigms, Covid-19 pandemic remains a significant clinical burden because there is no panacea to cure it. In the classical texts of *Ayurveda*, pandemic is termed as *Janapadodhvansa* or *Maraka*. By correlating the *Nidan* and *Lakshana* of Covid-19 disease it can be provisionally understood from the *Ayurvedic* perspective as *Vata Kapha* dominant *Sannipataj Jvara* of *Agantuj* origin with *Pittanubandha*. There is a wide range of *Rasa Aushadhis* described in *Ayurvedic Samhitas* which can be employed for the treatment of Covid-19 disease. This article focuses on the utility of *Rasa Aushadhis* and their role in therapeutic management of Corona virus disease w.s.r to ARDS.

**Keywords:** Covid-19, ARDS, *Janapadodhvansa*, *Sannipataj Jvara*, *Rasa Aushadhis*

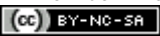
### INTRODUCTION

Coronavirus disease 2019 (Covid-19) is a contagious disease caused by Severe Acute Respiratory Syndrome Corona Virus 2 (SARS CoV-2). This virus first identified in Wuhan, China in December 2019 [1] spread like wildfire across the globe in merely a period of four months. The WHO declared the outbreak a public health emergency of international concern on 30 January 2020 and a pandemic on 11 March 2020 [1]. Mild to moderate symptoms of Covid-19 include fever,

sore throat, dry cough, loss of taste and smell, fatigue, nausea, vomiting, diarrhoea, chills, dizziness [2]. Severe Covid-19 most commonly manifests as viral pneumonia induced acute respiratory distress syndrome (ARDS) [3]. There is a contrasting role of interferon Y in mediating the host immune response to SARS CoV-2 [3]. Thus, certain host factors confer an increased risk of developing disease severity and mortality. It's almost one and a half year since the Covid-19 pandemic began but the scientists are still to discover a medicine to counter the wrathful virus

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though several vaccines have been rolled out. In view of the present situation there is a pressing demand to explore the treasure of *Ayurveda* and bring out effective drug formulations for the treatment of Covid-19.

#### AYURVEDA PERSPECTIVE OF COVID-19:

Classical *Ayurveda* texts such as *Caraka Samhita (Vimanshana ch 3)* [4] and *Sushruta Samhita (Sutrasthana Chapter 6 versus 19, 20)* [5] contain elucidation of pandemics and considered them as *Janapadodhvansa* and *Maraka* respectively. *Acharya Bhel* has named it *Janmar* in *Bhel Samhita* chapter 13 *Janvibhaktiyadhyaya* [6]. *Janapada* means a group of people or community and *dhvansa* means devastation therefore the term *Janapadodhvansa* is the condition with massive devastation or Annihilation of people. There are four factors that have been described as essential for every living being i.e. *Vayu* (air), *Jala* (water), *Desh* (land) and *Kaala* (season). Vitiating of these four factors is the cause for *Janapadodhvansa* [7]. Appropriate use of *Rasayana* has been described as the line of treatment during *Janapadodhvansa*. There are numerous *Rasa Aushadhis* which possess the properties of *Rasayana*. Furthermore, the *Ayurveda* treaties explain two types of *Roga* namely *Nija* (endogenous) and *Agantuja* (exogenous).

*Nija Vyadhi* is caused by vitiation of any one or two or all the three *doshas (Vatta, Pitta, Kapha)*. *Agantuja Vyadhi* initially caused by some external factor like *Abhigata* (injury), *Abhishanga (Bhootabhishanga* i.e. infection due to microorganisms) *Abhichara* (spell), *Abhishapa* (curse) later on causes *Dosha Vaishamyas*. Covid-19 is also a disease of *Agantu* origin because initially caused by an external cause (viral invasion) later on it involves host immune response (*Nija*). Thus considering the *Agantu* and *Janapadodhvansa* nature of the disease Covid-19 can be considered as a type of *Sannipataj Jwara* with fever, fatigue, dry cough, sore throat, nasal congestion, runny nose, body aches, myalgia, diarrhoea as the main symptoms.

#### RASA SHASTRA – A BRIEF INTRODUCTION

*Rasa Shastra* is a pharmaceutical branch of Indian system of medicine which mainly deals with metals, minerals, products of animal origin, toxic herbs and their use in therapeutics. The history of *Rasa Shastra* or the *Ayurveda* alchemy can be traced back to pre vedic period. There are historical evidences of the use of drugs of metallic and mineral origin in *Vedic Kala* (1500-600 BC) and *Samhita Kala* (600 BC-300AD). However medieval period marks the period of extensive progress and flourishing of *Rasa Shastra* due to the efforts of a Buddhist saint *Nagarjuna* (8<sup>th</sup>

century) who is regarded as the father of the *Rasa Shastra*. *Rudra* or *Lord Shiva* is glorified as the *Prathma Bhishak* in the classics of *Rasa Shastra*.

#### RASA AUSHADHIS AND THEIR TYPES:

According to *Rasaratna Samucchya* chapter 28/1 it is stated that *Rasa Aushadhis* (herbo-mineral formulations) are highly potent form of medicines which provide immediate relief and restore health despite being used in minute quantity and are palatable as well.

The *Rasa Aushadhis* are formulations which contain any of the *Ras Dravyas* namely *Parada* (Hg), *Maharasa*, *Uparasa*, *Sadharanarasa*, incinerated or killed metals and poisonous tubers, *Dhatu*, *Ratna*, *Uparatna*, *Sudha*, *Sikta*, *Kshara varga*. *Rasa Aushadhis* are classified as *Khalviya*, *Parpati*, *Kupipakwa* and *Pottali Rasayana*.

Enormous amount of *Rasa Aushadhis* are available in the treatment of *Sannipataj Jwara* as mentioned in *Ayurveda* classics.

Many of these *Rasa Aushadhis* are Potent *Rasayanas*, Immunomodulators, Antioxidants and have antimicrobial, anti-inflammatory and anti-Pyretic effects.

#### ROLE OF HERBO-MINERAL FORMULATIONS IN COVID-19:

##### In mild cases:

1. *Sanjeevani Vati* [8,9] According to *Sharangdhar Samhita* it is indicated to be used in *Sannipataj Jwara* (4 tab twice daily with an *Anupana* of *Ardrak Swaras*).
2. *Laxmivilas Rasa* [10,11,12] It is indicated in *Rajyakshma Chikitsa* in *Yogratnakar*. It contains *Swarna Bhasma*, *Rajat Bhasma*, *Abhrak Bhasma*, *Tamra Bhasma*, as key ingredients. It is also mentioned in *Rasendra Sar Sangraha* in *Kasa Chikita*.
3. *Mritunjaya Rasa* [13,14] According to *Rasendra Sar Sangraha* it is indicated in *Sannipataj Jwara*, *Jirna Jwara* and *Tiwra Jwara* (30-60 mg TDS or four times a day with an *Anupana* of *Ardrak Swaras*).
4. *Ananda Bhairava Rasa* [15,16] It is also indicated in *Tridoshaja Jwara* (125 mg-375 mg with *Ardrak Swaras*)

##### In moderate to severe cases:

1. *Trailokya Chintamani Rasa* is mentioned in *Jwara Chikitsa Prakarna* in *Rasendra Sar Sangraha* [17]. It is a classical herbomineral formulation which is *Ojo Vardhak* and *Rasayana* and hence acts as cardiac stimulant [18]. Its key ingredients are *Swarna Bhasma*, *Rajat Bhasma*, *Abhrak Bhasma*, *Lauh*

*Bhasma*, *Prawal Bhasma*, *Mukta Bhasma*, *Ras Sindoor*. *Trailokya Chintamani Rasa* is *Tridosha Nashak* and its use has been indicated in *Vata Roga*, *Kasa*, *Kshaya*, *Shwasa*, *Rajyakshma* and *Jwara*. It is extremely effective in (60-250 mg per day) the treatment of *Kaphavatolvana Sannipata*, *Shwasnak Jwara* and acts as a Cardio pulmonary and CNS stimulant [19] by preventing attenuation of *Nadi* and *Hridya Gati*.

2. *Sameer Pannaga Rasa* is kind of *Kupipakwa Rasayana* which is Arsenical compound formulation first Mentioned in *Rasa Chandanshu* Classic. It contains *Parada*, *Gandhaka*, *Somala*, *Hartala* and *Manashila* as integral components. *Sameer Pannaga Rasa* is indicated in various *Vata Kaphaja* ailments especially *Shwasa Roga*, neurological disorders, *Sannipataja Jwara*, *Kasa*, *Shwasnak Jwara* (pneumonia) [20]. There are several case studies which demonstrate that *Sameer Pannaga Rasa* improved Neuro behavioural deficits following acute ischaemic stroke by attenuating neuro inflammatory response [21]. Studies revealed that patients infected with SARS CoV-2 develop arterial thrombosis including stroke, MI and peripheral arterial thrombosis [22]. *Sameer Pannaga Rasa* has been successfully used in treatment of Covid-19 [23].
3. *Tribhuvan Kirti Rasa* [24]: If fever is dominant then 1 tab TDS or four times a day can be given (each tab 125 mg) with an *Anupana* of *Ardrak Swaras* and *Madhu* [25].
4. If there is difficulty in breathing alongwith other symptoms of pneumonia then *Shwas Kuthar Rasa* (125 mg-250 mg twice daily) or *Shwas Kas Chintamani Rasa* (125 mg-250 mg twice daily) with *Baheda Churna* 500 mg and honey can be given [26].
5. *Siddha Makardhwaj* can also be used in management of moderate to severe cases [27]. It can be used in *Sannipataj Jwara* (250 mg) mixed with *Brahmi Swaras* and honey 1 gm each [28].
6. *Laghu Vasant Malti Rasa* (250 mg-500 mg) can be used mixed with *Pippali Churna* and honey. *Sanjeevani Vati*, *Laxmivilasa Rasa*, *Mritunjaya Rasa*, *Tribhuvana Kirti Rasa* not only improve the condition of Covid-19 patient but also turned the rapid antigen test negative within six days of treatment according to a case report public published in the journal of AIIA [29].

#### ROLE OF BHASMAS IN COVID-19:

Studies reveal that metal and mineral nanoparticles can inhibit replication of SARS CoV-2 [30]. The

gold and silver nanoparticles are significant virucidal agents to neutralise the infectious viral particles [30]. Zinc nanoparticles can target the RNA dependent RNA polymerase [30]. Also zinc has been extensively used as immuno modulator.

Several *Ayurvedic Bhasma* preparations are being used for Covid-19 treatment, *Siddha Makardhwaja* and *Swarna Bhasma* are known to be effective through administration with black pepper powder and ghee for treatment of moderate to severe Covid 19 patients [31]. *Yashada Bhasma* exhibits T-cell mediated immune response modulation. Also *Swarna Bhasma*, *Rajata Bhasma*, *Tamara Bhasma*, *Yashadha Bhasma* have inflammation inhibition activity [32] and thus are effective against Covid-19. *Abhrak Bhasma* is indicated to be used in *Hridya Roga*, *Kasa*, *Shwasa*, *Kshaya*, *Peenus* and *Fuffus Roga*. It can be administered (2-3 *Ratti*) with honey and *Tulsi Swaras* [33]. *Godanti Bhasma* is indicated in *Sannipataj Roga*, *Kasa* and *Shwasa* (3-4 *Ratti* with honey) [34]. Antipyretic effect of *Godanti Bhasma* has been proved through various studies [35]. *Tamra Bhasma* is effective in the treatment of *Kasa*, *Shwasa*(65-250mg) [36].

#### MANAGEMENT OF ARDS WITH RASA AUSHADHIS:

ARDS can be understood as *Shwasa Pradhana Vata*, *Kapholbana*, *Sannipata*. In this condition if *Vata Dosha* is dominant then *Rasa Sindoor* with *Anupaana* of *Pippali Churna* (1-3gm.) can be given [37]. If *Kapha Dosha* is dominant then *Sameer Pannaga Rasa* (60 mg-125 mg) can be given [38]. If it is *Vata Kapha Pradhan* then *Malla Sindoor* 60 mg + *Shringa Bhasma* 60 mg + *Ardrak Swaras* can be given [39].

*Pottali Rasayana* can also be very effective in the treatment of Covid-19. It is especially useful in *Kasa*, *Shwasa*, *Kshaya*, *Vata Kapha* disorders and *Sannipatika Jwara* [40]. *Hema Garbha Pottali Rasa* [41] and *Ratna Garbha Pottali Rasa* [42] mentioned in *Yogratnakar* can also be used.

#### IMMUNOMODULATORY EFFECTS OF RASA DRAVYAS:

The main objective of *Ayurveda* is *Prayojnam Chasya Swasthasya Swasthya Rakshanam*

*Aturasya Vikara Prashamanam Ch*

(*Ch. Su.30/26*)

This involves both preventive and therapeutic treatment of a disease. In case of Covid-19 the supreme treasure of *Rasayana Dravyas* which according to *Ayurveda* are regarded as immunomodulators can be used as a preventive

treatment. Some of these include *Shilajeet* (R.T 22/85), *Hartaal* (R.T 11/52-54), *Manashila* (R.T 11/116), *Gandhak* (R.R.S 3/16), *Hingula* (R.R.S 3/140), *Manikya* (R.T 23/57-58). Immunomodulatory effect of *Ras Dravyas* like *Swarna Bhasma* [43], *Mukta Bhasma* [44], *Abhrak Bhasma* [45] have been proved by various studies.

## DISCUSSION

Not much is known about Covid-19 because it is caused by a novel Coronavirus though researchers are testing a variety of possible treatments, currently no cure is available to combat the virus. Since the commencement of first wave of Covid - 19 till date many drugs initially introduced as the drug of choice in this disease later turned out to be futile and caused several side effects. Irrational use of steroids may also act to suppress the body's immune response contributing to increased incidence of Mucormycosis [46]. According to *Sushruta Samhita Sutrasthana* chapter 35/27 *Ya Hyudeernam Shamyati Naanyam Vyadhim Kroti Ch. Sa Kriya Na Tu Ya Vyadhim Haratyanyam Udeeryet* ( Su. Su. 35/27)

*Ayurveda* considers a treatment to be the best and comprehensive when it subsides or pacifies the disease for which it is being administered but at the same time does not cause yet another disease. In this regard our main motive should be the maximum utilisation of the treasure trove of knowledge available in the classical texts of

*Ayurveda*. According to *Caraka Samhita Sutrasthana* chapter 18/44-46 it is mentioned that a skilled physician should not feel humiliated if he cannot name a newly emerged disease because the diseases may vary in terms of *Visheshta* of *Sthana* and *Samuthana* but *Dosha* vitiation is the ultimate cause of all diseases. Therefore one should aim at stabilising the imbalanced *Doshas* by analysing the *Prakriti Adhishthan* and *Samutthan* of a disease and then implementing the standard line of treatment accordingly. Same approach is advocated here by using the present available knowledge about Covid-19 and analysing it under the light of *Ayurveda*.

In this review it has been discussed that *Rasa Aushadhis* are highly potent drug formulations which are being used successfully to treat mild, moderate and moderately severe cases of Covid-19.

## CONCLUSION

In the prevailing times of emergency across the globe the tried and tested knowledge of *Ayurveda* can salvage the drowning hopes of health system in both preventing and managing the cases of Covid-19. There is analogy between Covid-19 and *Vata Kapholbana Sannipataj Jwara*. Further considering the *Agantu* and *Janapadodhvasa* nature of the disease it can be managed using huge treasure of *Rasa Aushadhis* described in the *Rasa Shastra*. These *Rasa Aushadhis* due to their immunomodulatory and therapeutic effect can be used both in prevention and treatment of Covid-19. This management strategy will definitely help in managing the pandemic with the limited resources and cost-effective way in large population.

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