

## Role of Hemagarbha Pottali Rasayana Lehana in post COVID-19 lung fibrosis: A case study

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### Abstract

The COVID -19 infection mainly presents with respiratory symptoms including a flu like illness with fever cough and asthenia. SARS-CoV-2 can cause severe lung injury. In the high risk population like the elderly or those with multiple comorbidities. The virus has a higher prevalence of interstitial pneumonia, ARDS and multi organ failure. SARS-CoV-2 uses Angiotensin 2 converting enzyme (ACE2) as a cell receptor in humans, causing interstitial lung damage followed by parenchymal lesions. We report a patient who developed dyspnea, cough, and fever, secondary to pulmonary fibrosis after successful treatment of COVID - 19.

Since 6 months patient was taking treatment for post COVID fibrosis (ILD – UIP pattern) with traction bronchiectasis with severe PAH, Addition of Hemagarbha pottali Rasayana showed promising results as it acts on Pranvaha strotas. It helped to reduce the symptoms of patients like breathlessness, cough, fever and also improved O2 saturation and need of O2 supply.

**Observation:** There was significant reduction of symptoms and also improved O2 saturation and need of O2 supply. Clinically there was significant reduction in crepts also VAS scale was applied for evaluation of all above symptoms. It was observed that VAS scale score was improved after the treatment.

**Conclusion:** Hemagarbha Pottali Rasayana is effective in post COVID Lung Fibrosis as an adjuvant treatment along with concomitant medications.

**Keywords:** Post COVID- lung Fibrosis; Coronavirus; *Hemagarbha Pottali Rasayana*; *Rasayan Chikitsa*; *Ayurveda*

### 1. Introduction

Coronavirus disease 2019 (COVID-19) is caused by a novel coronavirus, known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The global pandemic began in Wuhan, China, in December 2019, and has since then spread worldwide.<sup>[1]</sup> Various mechanisms of lung injury in COVID-19 have been described, with both viral and immune-mediated mechanisms being implicated.<sup>[2]</sup> Pathogenesis of post COVID-19 Syndrome is the receptor for the virus SARS-CoV-2 is a protein called ACE2 receptor. Expression of ACE2 reveals the multifaceted nature of COVID-19 infection.<sup>[3]</sup> Higher the ACE2 expression (or level) is, the higher the risk .<sup>[4]</sup> In recent study, patients with comorbidities showed higher ACE2 expression as compared to control; again, underlying disease may have more imbalanced RAS homeostasis, lower immunity and greater susceptibility to SARS-CoV-2. <sup>5</sup> The risk factors for the development of lung fibrosis in COVID-19 is advanced age and this finding is same as in MERS and SARS-CoV.<sup>[6]. [7]. [8]</sup> Second risk factor is increased

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disease severity which includes comorbidities such as hypertension, diabetes, and coronary artery disease.<sup>9</sup>and Lab findings like lymphopenia, leukocytosis, and elevated lactate dehydrogenase (LDH).<sup>[10]</sup> Serum LDH level has been used as a marker of disease severity following acute lung injury. It is an indicator of pulmonary tissue destruction and correlates with the risk of mortality. Third risk factor is prolonged ICU stay and duration of mechanical ventilation. While disease severity is closely related to the length of ICU stay, mechanical ventilation poses an additional risk of ventilator-induced lung injury (VILI). Abnormalities of pressure or volume settings underlie this injury leading to a release of proinflammatory modulators, worsening acute lung injury, and increased mortality or pulmonary fibrosis in survivors.<sup>[11]</sup>

According to Ayurveda concepts, there will be *Dhatu-Kshaya & Agnimandya Avastha* Post COVID-19 infection. Hence, *Dhatuposhana* and administration of *Rasayana* drugs like *Suvarna* (Gold), *Tamra* (Copper) for a least 45 days and to combat the residual effects of the virus on the body – *Vishaghna Chikitsa* with *Tamra* is suggested after clinical recovery.

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## 2. Case Report

A 63 years Female patient

C/o Breathlessness

Cough

Fever

Vomiting (3-4 episodes per day)

Giddiness

Loss of appetite since 8 days.

### 2.1. Ashtavidha Pariksha

*Nadi* (Pulse) – 120/min.                      *Mala* (Stool) - *Samyak*

*Mutra* (Urine) - *Samyak*                      *Jivha* (Tongue) – *Niram*

*Shabda* – *Ksheena*                              *Sparsha* – *Ushna*

*Druk* (Eyes) – *Prakrit*                        *Akruti* – *Madhyam*

### 2.2. Systemic Examination

Respiratory system: Bilateral crepts ++

CVS - S1 S2, Tachycardia

CNS - Conscious, Oriented

P/A - Soft, Nontender RR – 34/min, Spo2 – 90%, BSL Random – 138 mg/dl

K/C/O Hypothyroidism since 18 years on regular treatment Tab. Thyroxin 25µcg OD

H/O COVID -19 Positive in March 2021 was admitted for 19 days.

H/O Admission for same complaints on 30/08/2021 to 05/09/2021

Diagnosis: Post COVID fibrosis (Interstitial Lung Disease – UIP Pattern) with severe PAH

Previous Medications: Tab. Lasilactone 20/50 OD

Tab. Ivabrad 5 mg OD

Tab. Clopitab CV 10/75 OD

Tab. Penegra 25 mg OD

### 2.3. Management

- Hemagarbha Pottali Lehana 125 mg Thrice a day with Anupana Madhu(Honey)
- Cap. Doxy 100 mg BD for 7 days
- Tab. Lasilactone 20/50 OD
- Tab. Ivabrad 5 mg OD
- Tab. Clopitab CV 10/75 OD
- Tab. Penegra 25 mg OD
- Nebulization with Duolin and Budecort 8 hourly
- O2 supply 1 liter

On discharge patient was shifted on tablet 3,4,5,6 and also Hemagarbha Pottali Lehana for 7 days.

**Table 1** Assessment of the patient before treatment, mid treatment, after treatment

Symptoms	Before Treatment Day 0	Mid Treatment Day 8	After Treatment Day 15
Breathlessness	9	6	3
Cough	7	4	3
Giddiness	7	5	3
Loss of appetite	9	9	7
Crepts	9	7	3
RR	34/min	26/min	20/min
SpO2	83 @ RA Room air	86 @ RA Room air	91 @ RA Room air
O2/Liter	1 liter		

O2 Stopped on 5<sup>th</sup> day.

### 2.4. Statistical Analysis

% of relief was calculated by applying VAS scale before and after treatment.

$$100 \times \frac{IPL - IPI}{IPI}$$

Where,

IPI – score on initial assessment (day 0)

IPL – score on last day assessment (day 15)

**Table 2** Percentage of Relief of symptoms

Symptoms	Percentage of Relief
Sakashta Shwasa (Breathlessness)	66.66
Sakapha Kasa (Cough)	57.40
Bhrama (Giddiness)	57.40
Anannabhilasha (Loss of appetite)	57.40
Crepitations	66.66

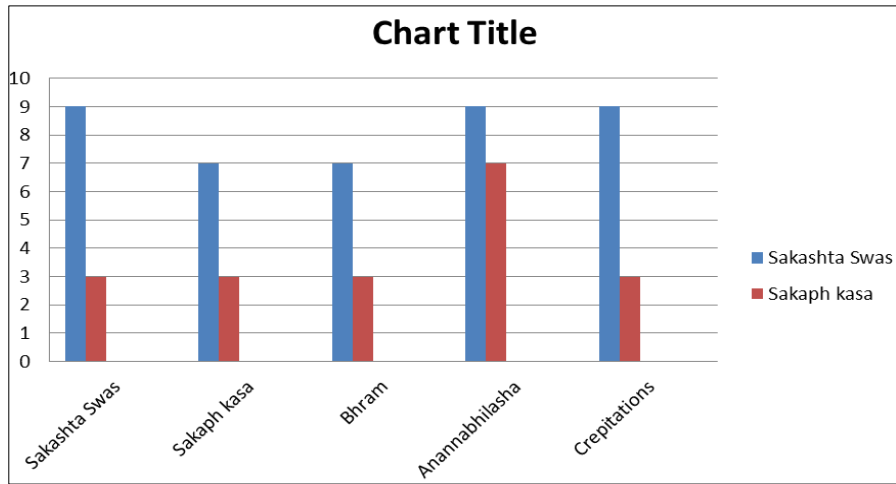


Figure 1 Graphical presentation of relief of symptoms

### 3. Discussion

#### 3.1. Probable *Samprapti* (Pathogenesis) of Post COVID-19 Fibrosis

COVID -19 positive, long stay in hospital (19 days), Age 63 years

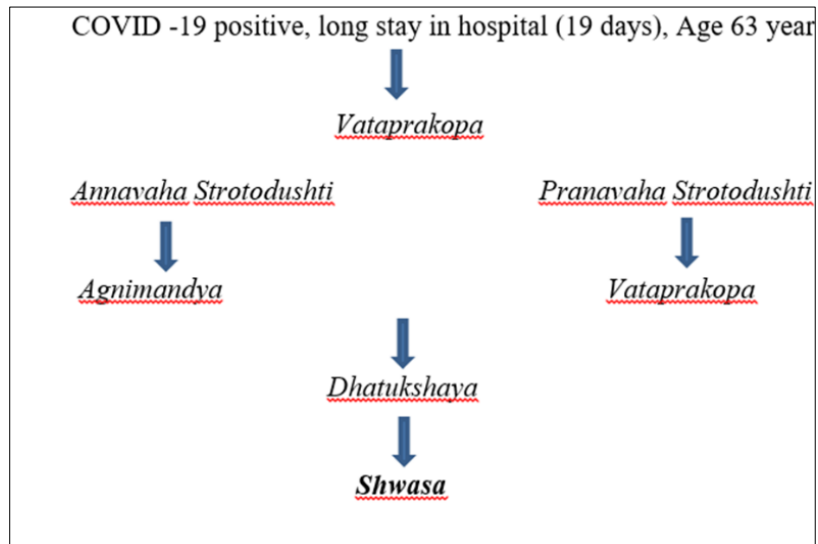


Figure 2 Samprapti of disease

### 3.2. Probable mode of action of *Hemagarbha Pottali Lehana* in Post COVID-19 lung fibrosis

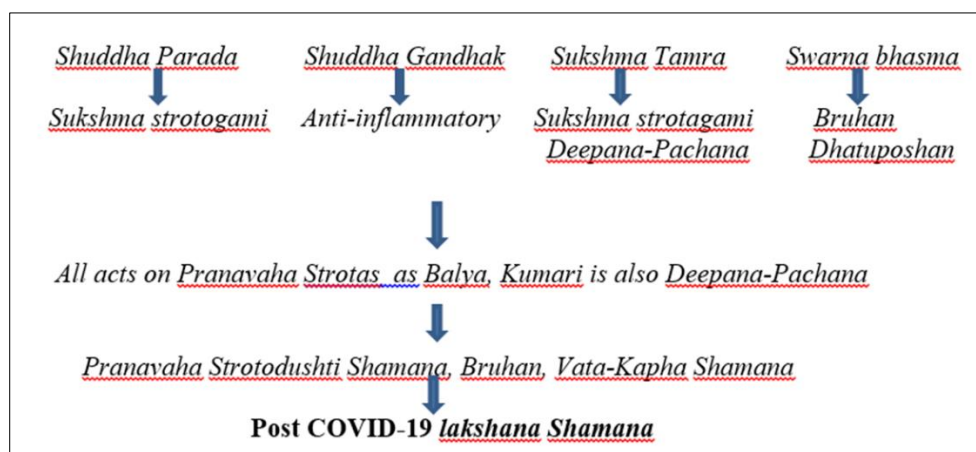


Figure 3 Mode of action of drug

### 3.3. Ingredients of *Hemagarbha Pottali* <sup>12</sup>

- *Shuddha Parada* – Mercury – 40 gram
- *Shuddha Gandhak* – Sulphur – 20 gram
- *Swarna Bhasma* – Bhasma Gold – 20 gram
- *Tamra Bhasma* – Bhasma Copper – 30 gram
- Juice extract of *Kumari* – Aloe vera – quantity sufficient for grinding for seven days.
  - It balances *Vata* and *Kapha* Dosha also *Kumari* is useful for balance of *Pitta Dosha*.<sup>[13]</sup>
  - Due to microcellular penetration of *Parada* and kinetic effect of *Parada* the drug *Hemagarbha Pottali Rasayana* can reach microcellular structure and can open the channels thus reducing blockage and inflammation.<sup>[14]</sup>
  - Drug will reach *Sukshma strotas*, due to its *Yogavahi guna* (kinetic energy) also the channel get open due to its *Kashaya-Tikta Rasa* and *Ushna Veerya*.
  - *Gandhak* is anti-inflammatory and anti-histaminic in nature. It will cause reduction in secretion of IgE which is responsible for immune responses thus by reducing IgE it will help for normal passage of air.<sup>[15]</sup>
  - *Parada* having higher molecular weight but due to its microcellular penetration it can penetrate up to microcells and hence will produce the effect.<sup>[15]</sup>
  - *Swarna Bhasma* has *Balya, Dhatuposhana* property and also it can reach *sukshma strotas* by its small molecular size.<sup>[15]</sup>
  - *Tamra Bhasma* is *Ushna Veerya* and it acts on *Pranavaha Strotas*. It will also open the channels to create good air entry.<sup>[15]</sup>

The promising results in signs and symptoms are observed. Here the medication was administered in acute exacerbation stage. Its administration on regular basis may play a key Role in reducing the frequency of acute exacerbation attacks, requirement of hospitalization, requirement of O<sub>2</sub> supply. It may also produce betterment in Pulmonary functions by maintain optimum oxygen saturation for longer duration, improve quality of life of patient.

## 4. Conclusion

*Hemagarbhapottali Rasayana* is effective in *Vegavastha* and *Avegavastha* of post COVID-19 Lung Fibrosis in 125 mg per day *muhurmuhu* doses as an adjuvant. It has beneficial effect in reducing symptoms like Breathlessness, cough, fever, reducing signs like increase in Respiratory Rate and crepitations also.

### Further Scope

These findings were noted in a single case study. But to prove its efficacy further studies can be carried out on large sample size, for longer duration.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The authors declare that there was no conflict of interest regarding the publication of manuscript.

### *Statement of informed consent*

Informed consent was obtained from the individual participant included in the study.

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