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Vardhamana Pippali Rasayana in Post Covid Bronchitis- A Case Study

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ABSTRACT

Introduction:

After acute COVID-19 illness, recovered patients may continue to report a wide variety of signs and symptoms like fatigue, body ache, cough, sore throat, difficulty in breathing, etc. A 43 years old male patient reported to OPD of ITRA Hospital, Jamnagar on 16th July 2021. He had tested positive for COVID 19 infection on 6th May 2021. Since then he had been suffering from sore throat, recurrent upper respiratory tract infection, coughing with whitish expectorant, dyspnea, myalgia, and memory impairment. He had tried various types of treatment but could not get relief. Due to multiple system involvement, such cases need a holistic approach for follow-up care and the well-being of post COVID recovering patients.

Materials & Methods:

This case was treated with *Vardhamana Pippali Rasayana* with milk for 28 day. Total 1000 *Pippali* given to the patient during course.

Result :

The patient got relief in all the symptoms. In X-RAY reports, the patient had bronchitis changes before treatment. Patient had also improved his quality of life. After completing the treatment patient had a normal X-ray.

Conclusion :

In Post Covid Syndrome, there is vitiation of *Vata* and *Kapha Dosha*. *Pippali* has an antibiotic, antiviral, immunomodulatory effect and is one of the best *Rasayana* (Rejuvenate) for *Pranavaha Srotas* (respiratory system), hence treating with higher doses of *Pippali* for a longer period provided significant relief in the case of post covid syndrome.

Key Words *Post Covid Syndrome, Vardhamana Pippali Rasayana, Bronchitis*

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INTRODUCTION

COVID – 19 disease caused by SARS-CoV-2 Coronavirus is relatively a new disease, with fresh information being known on a dynamic basis about the natural history of the disease, especially in terms of post-recovery events. SARS-CoV- 2 has resulted in a global pandemic

and an unprecedented public health crisis. It has infected more than 410,565,868 people worldwide till 14 February 2022¹. Clinical features of COVID 19 vary from a mild asymptomatic state to a severe state with respiratory dysfunction, thrombotic complications, and multi organ failure². After

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acute COVID-19 illness, recovered patients may continue to report a wide variety of signs and symptoms including fatigue, body ache, cough, sore throat, difficulty in breathing, etc. A large degree of uncertainty remains regarding disease progression; however, individuals with pre-existing chronic cardiac, respiratory, and metabolic diseases are at risk of developing a greater disease³. Recent literature suggests the emergence of a novel syndrome known as ‘long COVID/post-COVID- 19 syndrome’, a term used to describe a diverse set of symptoms that persist after a diagnosed COVID-19 infection⁴. National Institute for Health and Care Excellence (NICE) guidelines effectively define and clarify the terminology that can be used to describe the condition. ‘Post-COVID- 19 syndrome’ is defined as the persistence of symptoms beyond 12 weeks from the date of onset. These are not explained by an alternative diagnosis. Ongoing symptomatic COVID-19 is defined as signs and symptoms that persist between 4 and 12 weeks from the onset of the infection. The term ‘long COVID’ includes both ongoing symptomatic COVID-19 (4–12 weeks) and post COVID- 19 syndrome (>12 weeks)⁵.

In this case, patient had persistent bronchitis after the COVID-19 infection and had recurrent upper respiratory tract infection which was temporary relieved by modern medicine. This patient was treated with *Vardhamaan Pippali Rasayana* in *Ksheerpaka* form for 28 days. *Vardhamana Pippali Rasayana* is the formulation in which total one thousand *Pippali* are administered in 28

days. *Pippali* has been reported to possess immunomodulatory, antioxidant, and antimicrobial activity also. Further, the use of *Pippali* as a bioavailability enhancer has immensely increased its importance in the field of Ayurveda and modern science. The *Rasayana* use in the form of *Vardhamana Pippali* is immunity promoting and is indicated in fever, chronic coughing, spleen enlargement, sustains age, and promotes intellect⁶.

CASE PRESENTATION

A previously healthy 43-year-old male was diagnosed with COVID-19 in May 2021. He initially presented with fever, cough, myalgia, anosmia, and dyspnea symptoms and tested positive for COVID 19 infection. He was hospitalized for 15 days of which he was kept on oxygen for 10 days. Even after taking complete treatment for COVID 19, he continued to experience persistent symptoms of sore throat, sneezing, coughing, fatigue, malaise, and myalgia. He also experienced back pain, chest tightness, and persistent dyspnea and had anxiety after COVID 19 infection. The symptoms appeared to fluctuate unpredictably over the weeks with no aggravating or alleviating factors identified. Other than COVID 19, he had no significant another medical history. No significant drug history was found.

Over the subsequent few weeks, he was unable to do his daily activity and was unable to resume his professional work. Furthermore, the patient

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experienced a number of multifaceted cognitive symptoms including a reduction in concentration, poor memory, 'non-specific head buzzing', worsening anxiety, and brain fog. Musculoskeletal symptoms included myalgia, arthralgia, generalized body ache, and flatulence in the abdomen.

INVESTIGATIONS

He underwent a number of investigations, including blood tests, ECG, and chest X-rays. Blood tests showed normal full blood count (haemoglobin 14.2 gm %, white cell count 10240 /cu mm, platelets 294×10⁹/L), liver function test (alanine aminotransferase 23 U/L, alkaline phosphatase 17 U/L), ESR 40 mm/hr., s. lipid profile was slightly elevated (Cholesterol 189 mg/dL, S. Triglyceride 217 mg/dL, S.LDL Cholesterol 109.2 mg/ dL, S.VLDL- Cholesterol 43.4 mg/dL). S. uric acid was also slightly increased 7.61mg/dL. S. calcium level was mildly decreased by 9.58 mg/dL. Urine analysis showed no abnormality in routine and microscopic examination. ECG was within the normal limit. X-ray showed changes of bronchitis in the lung field.

TREATMENT

Patient was given *Mridu Virechana* with 40 ml *Erandasneha* with lukewarm milk on 1st day of the treatment. After that *Pippali Churna* was given in *Vardhamana Matra* for 28 days. Total 250 gm *Pippali* (1000 *Pippali*) *Churna* was

given to the patient for 4 weeks in the increasing dose as mentioned in the Table no. 1.

Table 1 *Vardhamana Pippali Rasayana* (1 *Pippali* = 250mg)

| Day | Total <i>Pippali</i> | Total dose of <i>Pippali</i> / day in gm | Quantity of milk |
|-----------|----------------------|--|------------------|
| 1 | 5 | 1.25 gm | 10 ml |
| 2 | 10 | 2.5gm | 20 ml |
| 3 | 15 | 3.75gm | 30 ml |
| 4 | 20 | 5 gm | 40 ml |
| 5 | 25 | 6.25 gm | 50 ml |
| 6 | 30 | 7.5gm | 60 ml |
| 7 | 35 | 8.75 gm | 70 ml |
| 8 | 40 | 10 gm | 80 ml |
| 9 | 45 | 11.25gm | 90 ml |
| 10 | 50 | 12.5gm | 100 ml |
| 11 | 50 | 12.5gm | 100 ml |
| 12 | 50 | 12.5gm | 100 ml |
| 13 | 50 | 12.5gm | 100 ml |
| 14 | 50 | 12.5gm | 100 ml |
| 15 | 50 | 12.5gm | 100 ml |
| 16 | 50 | 12.5gm | 100 ml |
| 17 | 50 | 12.5gm | 100 ml |
| 18 | 50 | 12.5gm | 100 ml |
| 19 | 50 | 12.5gm | 100 ml |
| 20 | 50 | 12.5gm | 100 ml |
| 21 | 45 | 11.25 gm | 90 ml |
| 22 | 40 | 10 gm | 80 ml |
| 23 | 35 | 8.75 gm | 70 ml |
| 24 | 30 | 7.5gm | 60 ml |
| 25 | 25 | 6.25gm | 50 ml |
| 26 | 20 | 5 gm | 40 ml |
| 27 | 15 | 3.75 gm | 30 ml |
| 28 | 10 | 2.5 gm | 20 ml |
| 29 | 5 | 1.25 gm | 10 ml |
| TOT AL | 1000 | 250 gm | |

In the table, no 1 dose of *Pippali* and quantity of milk has been mentioned to make *Pippali Ksheerpaka* as per *Ksheerpaka Vidhi*⁷. During the treatment, if the patient was unable to take *Ksheerpaka* in gross quantity he was asked to take *Pippali Ksheerpaka* in a divided dose.

The patient was advised to take milk and rice during the four weeks of intervention or to take light meals without spice and was asked to avoid excessive salt, sour, and fermented food articles during the full course.

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OUTCOME AND FOLLOW-UP

The patient in this case study presented with a variety of symptoms. After completing the course of four weeks, he got relief in the symptoms like fatigue, generalized weakness, coughing, sneezing, myalgia, arthralgia, and dyspnea.

There were changes of bronchitis chest X-ray before treatment but after completing the course, no such changes of bronchitis were found. The difference in Biochemical and Hematological investigation of BT and AT is shown in Tables 2 & 3.

Table 2 Difference in hematological investigation before and after treatment (BT- before treatment & AT- after treatment)

| Investigations | B.T. | A.T. | Unit | Investigations | B.T. | A.T. | Unit |
|----------------|----------|--------|-----------|----------------|------|--------|----------|
| Hb. % | 14.2 | 15.2 | Gms% | D.L.C. | N % | 56.8 | 68.6 % |
| T.L.C. | 10240 | 6290 | /cu mm | | L % | 36.1 | 25.1 % |
| Total R.B.C. | 4.41 (L) | 4.74 | mill/c.mm | | E % | 0.6(L) | 0.5(L) % |
| E.S.R. | 40(H) | 20(H) | mm/hr | | M % | 6.3(H) | 5.6 % |
| A.E.C. | 61.44 | 31.45 | /UI | | B % | 0.2 | 0.2 % |
| Platelet | 294000 | 276000 | /cu mm | | | | |

Table 3 Difference in hematological investigation BT & AT

| Investigations | B.T. | A.T. | Unit |
|---------------------|------------|------|-------|
| R.B.S. | 115 | 122 | mg/dL |
| Serum Cholesterol | 189 | 159 | mg/dL |
| Serum Triglycerides | 217(H) | 157 | mg/dL |
| HDL Cholesterol | 36.4 | 34.4 | mg/dL |
| LDL | 109.2(H) | 93.2 | mg/dL |
| VLDL | 43.4(H) | 31.4 | mg/dL |
| Blood Urea | 14 | 34 | mg/dL |
| Serum Creatinine | 1.01 | 1.22 | mg/dL |
| Serum uric acid | 7.61 | 7.05 | mg/dL |
| Aminotransferase | ALT (SGPT) | 23 | IU/L |
| | AST (SGOT) | 17 | IU/L |

There was a significant difference seen in ESR as compared to before treatment reports. Also, there was a decrease in serum triglyceride and LDL, and VLDL (Table -3). After completing the

treatment chest X-ray report was also normal. Significant changes in Post-COVID Functional Scale were also found as depicted in Table No. 04

Table 4 Post-COVID Functional Scale⁸

| PCFS | Score | BT | AT | FU |
|---|-------|----|----|----|
| I have no limitations in my everyday life and no symptoms, pain, depression or anxiety related to the infection. | 0 | | 0 | 0 |
| I have negligible limitations in my everyday life as I can perform all usual duties/ activities, although I still have persistent symptoms, pain, depression or anxiety. | 1 | | | |
| I suffer from limitations in my everyday life as I occasionally need to avoid or reduce usual duties/activities or need to spread these over time due to symptoms, pain, depression or anxiety. I am, however, able to perform all activities without any assistance. | 2 | | | |
| I suffer from limitations in my everyday life as I am not able to perform all usual duties/ activities due to symptoms, pain, depression or anxiety. I am, however, able to take care of myself without any assistance. | 3 | 3 | | |
| I suffer from severe limitations in my everyday life: I am not able to take care of myself and therefore I am dependent on nursing care and/or assistance from another person due to symptoms, pain, depression or anxiety. | 4 | | | |

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Timeline

| Sr. no | Complains | Treatment given | Days | Purpose |
|--------|--|--|--|---|
| 1. | a. Sore throat++ b. Sneezing ++ c. Coughing yellowish-white expectorant throughout day +++ d. Fatigue+++ e. Myalgia ++ f. Back pain ++, g. Chest tightness++, h. Persistent dyspnea +++ i. Anxiety + | <i>Erandtaila</i> 40 ml | On 1 st day | <i>Koshtha Shuddhi</i> for flush out residual infection of Covid 19 |
| 2. | As above | 1 st week of <i>Vardhamana Pippali Rasayana</i> | For the next 7 days increasing dose started at 1.25 gm and increased to 1.25 gm On the 8 th day 8.75 gm | |
| 3. | a. Sore throat 0, b. Sneezing 0 c. Coughing yellowish-white expectorant throughout day ++ d. Fatigue ++ e. Myalgia + f. Back pain 0, g. Chest tightness +, h. Persistent dyspnea ++ i. Anxiety + | 2 nd week of <i>Vardhamana Pippali Rasayana</i> | Stable dose of <i>Vardhamana Pippali Rasayana</i> 12 gm for 7 days given in the divided dose | |
| 4. | a. Coughing + b. Fatigue + c. Myalgia 0 d. Chest tightness 0 , e. Persistent dyspnea ++ f. Anxiety 0 | 3 rd week of <i>Vardhamana Pippali Rasayana</i> | Stable dose of <i>Vardhamana Pippali Rasayana</i> 12 gm for 7 days given in the divided dose | |
| 5. | a. Occasionally Coughing white expectorant + b. Fatigue + c. Myalgia 0 d. Chest tightness 0 , e. Persistent dyspnea ++ f. Anxiety 0 | 4 th week of <i>Vardhamana Pippali Rasayana</i> | Tapering dose of <i>Vardhamana Pippali Rasayana</i> decreased by 1.25 gm each day for 7 days | |
| 6. | a. Coughing + b. Fatigue + c. Myalgia 0 d. Chest tightness 0, e. Dyspnea 0 f. Anxiety 0 | Follow up | - | |

DISCUSSION

After 15 days of the treatment, it was observed that there was 100 % relief in the symptoms of sore throat, sneezing, and chest pain. Also, the symptom of fatigue was improved. And after 4 weeks of treatment, all symptoms were relieved.

‘Long COVID’ is a complex, multifactorial illness that describes the residual effects of the acute COVID-19 infection. While thousands of patients experienced ‘mild’ COVID-19 symptoms not requiring hospital admission, a large proportion is collectively suffering from

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post-COVID-19 sequelae. These symptoms were not commonly acknowledged within healthcare policymaking during the start of the pandemic but have emerged as tremendous challenges for clinicians and the healthcare system. The causes of post-covid syndrome are under study, however, the main hypotheses include a persisting chronic inflammatory process, an autoimmune phenomenon, or even a hormonal imbalance as a consequence of an alteration in the hypothalamic-pituitary-adrenal axis⁹. In this line, COVID-19 patients at 3–6 months of convalescence may exhibit high levels of CD27+ IgD+ B cells (which have been associated with autoimmune diseases such as multiple sclerosis)¹⁰, CD8+ T cells, as well as elevated Th17 cytokines, thus favoring a hyperinflammatory milieu. In addition, patients showed B cell impaired response given by IL-6/IL-10 imbalance¹¹ production of Th1. From Ayurveda point of view, there will be *Dhatu-Kshaya & Agnimandya Avastha* in Post-COVID 19 condition.

Pippali is a potent rejuvenate herb that has strong anti-viral, anti-bacterial, and anti-fungal properties, along with the anti-inflammatory activity. The drug has also been reported to be the antagonist in respiratory depression. *Pippali* is an ultimate remedy for all sorts of *Kapha* aggravating disorders like asthma, bronchitis, COPD, cough, and cold symptoms and also helps in removing phlegm deposits from the respiratory tract. Alcoholic extract of the fruits of *Piper longum* and its component piperine have shown

effective immunomodulatory and antitumor activity in cell-line and animal experiments¹². Studies show anti-allergic, anti-histaminic, mast cell stabilizer, anti-spasmodic, immunomodulator, anti-inflammatory & antioxidant effects of *Pippali*. The neuroprotective effect of dichloromethane extraction from *piper nigrum* and *piper longum*¹³ has also been reported. *Piperine* possesses thyrogenic activity, thus modulating apolipoprotein levels and insulin resistance in HFD-fed rats, opening a new view in the management of dyslipidemia by dietary supplementation with nutrients¹⁴. *Pippali* has been reported to possess immunomodulatory, antioxidant, and antimicrobial activity also. Further, the use of *Pippali* as a bioavailability enhancer has immensely increased its importance in the field of Ayurveda and modern science also. *Pippali* has a multi-dimensional role in various systems of the body and cures many diseases effectively, in a quick time, just as the steroid dose¹⁵. The *Rasayana* use of *Pippali Vardhamana* is bulk promoting, beneficial for voice and life span, alleviates spleen enlargement, sustains age, and promotes intellect¹⁶.

The role of *Rasayana* therapy with recent advancements can be adjusted in terms of immunomodulatory, cytoprotective, genoprotective, adaptogenic, stress reliever actions, etc. *Vardhamana Pippali Rasayana* in which *Pippali* is used in a total number of one thousand in 28 days by gradually increasing and tapering

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doses is more effective because it can be administered in its maximum doses without any discomfort to the patient¹⁷. Thus, *Vardhamana Pippali Rasayana* aims at increasing and enriching the quality of the tissues or *Dhatu*s with the active components of the herb or compound. This strengthens them structurally and functionally.

CONCLUSION

In this case study, it is found that oral administration of *Vardhamana Pippali Rasayana* therapy has potency in reversing the condition and improving the quality of life of the post-COVID patient. It's possible as per the principle of *Naimaittika Rasayana* which is administered after *Koshtha Shuddhi* in chronic disease. *Pippali Rasayana* through *Vata-Kapha* pacifying, *Srotoshodhana* and *Kapha Nissarana* properties had made the pathway clear for proper circulation of *Vata* thus relieving the respiratory signs and symptoms. It has properties that are essential for the removal of toxins and purifying internal channels, thus the administration of *Pippali* in *Vardhamana* dosage suppressed the inflammation associated as a part of Post COVID.

Take Away Lessons

Approach for *Ayurvedic* management in post covid syndrome helped to raise faith in *Ayurveda* which is necessary for future inventions. Further study on big sample size should be done to

evaluate the efficacy of *Vardhamana Pippali Rasayana* in Post Covid Syndrome.

Clinician Outcome: After treatment of 1 month, it was found that the patient improved at a dramatic pace. No recurrence of URTI upper respiratory tract infection was found after 6 months and CBC, Lipid Profile, and RFT were within normal limits which are shown in tables no 2 & 3 along with normal chest X-ray.

Patient Outcome: The patient was satisfied with improvement in quality of life after COVID 19 infection complaints with no dyspnea on exertion, generalized weakness, fatigue. His PCFS was also decreased to 3 to 0 as mentioned in table no 4.

Patient consent details:

Prior consent has been taken before enrolled patient in study. All the investigation report attach with the case report.

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