

ROLE OF PIPPALI (PIPER LONGUM) AS AN IMMUNO-MODULATOR IN THE PATIENT OF LUNG CANCER

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ABSTRACT

Introduction: Lung cancer is the second leading cause of mortality worldwide, with 1.7 million new cases reported in 2018. *Ayurveda* has developed numerous *Rasayana*, which have immune-modulator effects and have shown promising results in treating lung cancer patients. These drugs are helpful in maintaining *Sapta dhatus* and act as immune-modulators and antioxidants. *Pippali Rasayana*, mentioned by *Acharya Charaka*, is used for treating tuberculosis, *swasa*, *kasa*, *arsha*, throat disease, rhinitis, anemia, and fever. **Aims and objective:** In this text we are going to talk about *Pippali Rasayana's* function as an

immune-modulator in lung cancer. **Material and Methods:** We are undergoing the *Ayurvedic classical* texts, scientific papers, and clinical experience to explore the concept of *Pippali Rasayana*. **Conclusion:** Adino-carcinoma can also be managed with the aid of lung cancer diagnosis and treatment based on *Ayurvedic* principles. In contrast to *Kapha*, which has *Sheeta*, *Snigdha*, *Guru*, and *Madhura Rasa* qualities, *Pippali*, its opponent, has immune-modulating and anti-inflammatory qualities. An efficient adjuvant immune modulator for lung cancer, *Pippali Rasayana* operates on the *Pranavahasrotus vyadhi* and *Kapha dosha*.

KEYWORDS: *Sheeta*, *Snigdha*, *Guru*, and *Madhura Rasa* qualities, *Pippali*.

INTRODUCTION

Over the past several decades, lung cancer has been one of the major causes of death globally. Globally, two million new instances of lung cancer were recorded in 2018, and around 1.7 million of those cases or 14% of all new cancer cases were fatal. Overall, among

all cancer categories, it is the second most prevalent cause of death. Numerous *Rasayana* have been described by *Ayurveda*, and they have shown potential for giving treatment to patients suffering from conditions like lung cancer. They also have immune-modulator effects.

Rasayana is also known as a rejuvenation treatment. *Rasayana* aids in maintaining the *Sapta Dhatus*—*Rasa*, *Rakta*, etc. in their best state. *Rasayana* drugs also have antioxidant and immune-modulating properties.

Immune system modulators are substances that either stimulate or depress the immune system, potentially assisting the body in fighting against cancer, infection, or other illnesses.

Pippali Rasayana and its application in patients with TB, *Swasa*, *Kasa*, *Arsha*, diseases of the throat, rhinitis, anemia, and many types of fever have been mentioned by *Acharya Charaka*. In *Kaidav Nighantu*, *Pippali Rasayana* is further described as a *Swashara drug* and a lung-protective remedy. *Pippali Rasayana* has thus been chosen as a drug of choice among patients with lung cancer who manifest the previously mentioned symptoms.

OBJECTIVES

- To discuss the role of *Pippali Rasayana* in lung cancer as an immune-modulator.

MATERIAL AND METHODS

The *Charak Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Kaideva nighantu*, and other classical *Ayurvedic* texts are used in the literature research on *Pippali Rasayana*, along with other scientific research articles and clinical experience.

RESULTS

Lung cancer can be diagnosed and managed using *Ayurvedic* principles for diagnosis and treatment. In patients of adenocarcinoma of lung cancer, *dushti* of *Pranavaha srotus* (vitiation of the respiratory tract) and imbalance of *Kapha dosha* are found. *Kapha* is having the properties of *Sheeta*, *Snigdha*, *Guru*, and *Madhura Rasa*, while *Pippali* is an antagonist to *Kapha* with *Katu Rasa*, *Ushna Veerya*, and *Kapha-vatahara* properties. With these properties and along with immuno- modulatory & antioxidant effects *Pippali* acts on *Kapha dosha* & *Pranavahasrotus vyadhi*. *Pippali Rasayana* thus plays a better role as an adjuvant immune modulator in *adino-carcinoma* of lung cancer.

DISCUSSION

Rasayan: It belongs to the seventh of *Ayurveda*'s eight divisions. It denotes achieving the top-notch *Sapta dhatu rasa*, etc. *Rasayan* medications also function as antioxidants and immunomodulators. The term "*Rasayan*" also refers to rejuvenation therapy. *Rasayan* is a general phrase that can contain contemporary concepts like antioxidant and immunomodulator. Numerous researches have validated the antioxidant and immunomodulator activity of the plant *Pippali* and provided scientific support for its traditional uses. Since the *Vedic era*, *Pippali* (*Piper longum* Linn) has been utilized in the system of *Ayurvedic* medicine to alleviate a variety of ailments. The Sanskrit word *Pippali*'s derivation is "*Piparti palayati purusham poorayati cha Kshinan dhatuniti*," which means "that which nourishes and rejuvenates the human body." *Pippali* has also been noted for possessing immunomodulatory, antioxidant, and antibacterial properties. Different pharmacological effects of *Pippali* are described in *Ayurveda*, including *Rasayan*, *Vrishya*, *Medhya*, *Dipan*, *Pachana*, *Jvaraghana*, and *Kasaghana*. It is recommended for a variety of disorders, including *Shvas-Kasa*, *Udara*, *Jvara*, *Kushtha*, *Gulma*, *Udara*, etc.^[1]

The pharmacology of *Pippali* is described In *Brihatrayi*, it is frequently used in *Kasa* (cough), *Swasa* (asthma), *Hikka* (hiccough), *Yakshma* (tuberculosis), and all allied diseases of the respiratory system. *Acharya Charaka* described *Ardra Pippali* as *Guru & Snigdha Guna* and *Sushka Pippali* as *Katu Rasa*, *Ushna Veerya*, *Vrishya*, and *Kapha-Vatahara*.^[2] *Acharya Sushruta* state that *Pipplai* is *Katu Rasa*, *Ushna Veerya*, *Rochak*, *Vatta-kaphahar & Ardra Pippali* is *Guru*, *Sawadu*, *Sheeta*, *Kapha-vardhk* while *Shuska Pippali* is *Kapha-Vattahar*, *Pitta aviruddha*. *Acharya Vagbhat* state *Pippali* is *Vatta-kaphahar*, *Swasa Rogahara*, *Kasa Roganasaka*, *Sar Guna yukta* (mild purgative).^[3]

Dhanvantari Nighantu state *Pippali* is a *Rasayana* and bear *Katu Rasa*, *Madhur Vipaka* and *Sheeta Veerya*. *Pippali mool* is *Ushna Veerya*.^[4] In *Madanpal nighantu* *Pippali* is described as *Laghu Guna*, *Atiushna Veerya* and indicated in the treatment of *Kushtha*, *Gulma*, *Arsha*, *Pliharoga*, and *Prameha roga*.^[5] *Madanpal Nighantu* and *kaideva Nighantu* both described the *Guna* of *Ardra pippali* as *Sheeta Veerya*, *Guru*, *Madhur*, *Snigdha*, and *Kaphakari*. *Kaideva Nighantu* followed *Madanpal Nighantu* but *Veerya* of *Pippali* mentioned as *Anushna virya*.^[6] In *Bhavaprakash Nighantu* a detailed account of *Pippali* was described, it is a very effective drug for *Rasayana*, *Vajikarana*, and *Medhya karma* with *Pitta Prakopani*. *Bhavaprakash* indicated first time, *Pippali* with *Madhu* in the treatment of *Medoroga*, and

Guda Pippali in chronic fever.^[7]

CONCLUSIONS

Pippali Rasayana can be given as *Rasayana* therapy during and or after conventional treatment of lung cancer.