

ROLE OF PURGATION THERAPY IN BRONCHIAL ASTHMA- EXPLORING THE CONCEPT THROUGH GUT-LUNG AXIS

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ABSTRACT

Tamaka Swasa (Bronchial asthma) is a disease affecting the *Pranavaha srotas* (respiratory system) manifested as *Pratiloma Gati* of *Vata* (prolong expiration), *Ghurghuraka* (wheezing), and dyspnea of exceedingly deep velocity which may harm the life of the patient. Bronchial asthma is included in the list of most common chronic respiratory diseases affecting the population worldwide. The causative factors resulting in the initiation and exacerbation of bronchial asthma are individual susceptibility, viral infections, exposure to an allergen, exposure to tobacco smoke, and outdoor air pollution. The *Udbhava sthana* (initial site of pathological manifestation) for *Swasa rogas* (respiratory pathology) is told to be *Amashaya* (gastrointestinal system) however, in recent years it is scientifically proven fact that the gut can play a critical role outside the local environment, including the lungs. *Sodhana Chikitsa* (bio elimination therapy) explained for the management of *Tamaka Swasa* is *Virechana* (purgation therapy). The gut lymph hypothesis states that noxious mediators originating from the intestinal lumen travel through the mesenteric lymph to the lung where they cause tissue damage. The human gut is hosting an elaborate ecology of microbial communities and it is over 30 trillion bacteria. Recent updates in the field of biomedicine made it evident that varieties of chronic lung disorders, including bronchial asthma, COPD, and cystic fibrosis are strongly associated with dysbiotic airway microbiota. Changes in the microbial composition in the intestinal and airway microbiota are associated with chronic lung disorders and respiratory infections. *Virechana* effectively manages microbial dysbiosis in the gut by reducing the colonization of aerobic bacteria. After *Virechana* (purgation therapy) and follow-up, it showed the correction of the gut flora dysbiosis. In this review article, there is a humble at-

tempt is made to analyze the crosstalk happening between the gut and respiratory system using the concept of gut-lung axis.

Keywords: *Tamaka Swasa*, Bronchial asthma, *Virechana*, Gut-lung axis, Gut microbiota.

INTRODUCTION

Bronchial Asthma is listed among the most common chronic disease affecting the population worldwide. The survey finding shows an estimate of 300 million people worldwide is suffering from asthma, with an annual death rate of 250,000.¹ This increased rate of prevalence is because of the change in lifestyle, rapid industrialization, increase in air pollution, etc. Factors contributing to the initiation and exacerbation of bronchial asthma include exposure to allergens (pollens, house dust, mites, animal fur), tobacco smoke², occupational irritants,³ respiratory infections, food allergies (such as eggs, peanuts, and milk), and psychological stress.⁴ Bronchial asthma attack is an inappropriate immune response where the triggering factors induce bronchial hyper-reactivity leading to the constriction of smooth muscles and the inflammatory changes cause the increased mucous secretion into the airways. This condition is comparable to *Tamaka Swasa* in Ayurveda, characterized by symptoms like *Asinolabhate Soukhyam* (comfortable in sitting position), *Pratamyati Vegataha* (tachypnea), *Kasa* (cough), *Kanthodhwansa* (hoarseness of voice), *Parshwa Graham* (stiffness in flanks), etc. The treatment modality for the management of *Tamaka Swasa* is *Virechana* (purgation therapy). The modern system of medicine uses a number of drugs to counter this condition, and these drugs are noted for various untoward actions and various adverse drug reactions. Considering these facts, the suffering population is looking to traditional medicine as a safe and effective remedy. This review article focuses to explore the rationality of purgation therapy in bronchial asthma using the gut–lung axis theory.

Objective: To synthesize evidence on the role of microbiota in the pathogenesis, phenotype, and treatment outcomes of *Tamaka Swasa*, and to provide perspective on future research directions and challenges.

Method: A search was undertaken in the PubMed database using keywords like *Tamaka Swasa*, Bronchial asthma, *Virechana*, Gut-lung axis, and Gut microbiota, with their corresponding mesh terms in combination like OR, AND. Also, different Ayurveda classics were studied for establishing the concept of the role of *Virechana* in *Tamaka Swasa* with respect to the gut-lung axis.

Findings: Research updates in the field of biomedicine made it evident that chronic lung disorders including bronchial asthma, COPD, and cystic fibrosis, are strongly associated with the dysbiotic airway microbiota. This disturbance in the bacterial combination is due to the outgrowth of certain pathogenic bacteria. The altered microbiota in the airway will be observed as a reflection of the shift in the composition of intestinal microbiota, particularly within the context of asthma and cystic fibrosis. The factors including diet, environment, season and health status cause a significant impact on the gut bacterial composition. The physiologically intact intestinal barrier maintains its functional integrity and regulates its permeability under the control of the gut microbiome and the nutrients reaching the gut. During the state of pathobionts, the intestinal barrier starts losing its intactness, and the contents from the gut including the endotoxins produced by harmful bacteria and the antigens will come into the systemic circulation thereby affecting distal organs like lungs. This pathological condition is called "leaky gut".⁵ This pathobiont state in the gut will activate the enteric nervous system to release certain neuropeptides, such as substance P, calcitonin gene-related peptide (CGRP), and vasoactive intestinal peptide (VIP), that modulate various components of the inflammatory process. The release of neurotransmitters coupled with alteration in the intestinal barrier and increased permeability causes the chemicals to enter the systemic circulation leading to detrimental effects on the host immune system,

which has been demonstrated in diseases such as inflammatory bowel disease, diabetes, asthma, and psychiatric disorders including depression, anxiety, and autism.⁶ The treatment told for the management of *Tamaka Swasa* is *Virechana* (Purgation therapy). *Virechana* is one of the *Panchakarma* treatment modalities classified under the *Sodhana Chikitsa* (Bio-elimination therapy). *Virechana Karma* is having following benefits *Srotosodhana* (clears the obstruction in the bronchial duct, bronchioles, and alveolar duct), normalizes the *Agni* (metabolism), and brings a balanced state of *Tridosha*. *Snehapana* (internal administration of fat) is the *Poorvakarma* (preparatory procedure) before doing the *Virechana* and it is continued till the manifestation of *Samyak Snigdha Lakshana* like *Adhasthat Sneha Darshana* (steatorrhea), *Sneha Dvesha* (aversion to the intake of fat substance), *Vata Anuloma* (timely and complete evacuation of flatus and bowel), and *Klama* (fatigue). Depending on the day of attainment of *Samyak Snigdha Lakshana* the duration of *Snehapana* will extend from a minimum of 3 days to a maximum of 7 days and the time of administration of fat is on empty stomach in the morning before hunger starts. During the *Snehapana*, the large quantity of *Sneha* (fat) administered will initiate the inflammation in the gastrointestinal tract and this induced inflammation will help to bring the circulating endotoxins and antigens back to the lumen of the gut, at the same time the drug administered for inducing *Virechana* (purgation therapy) will increase the secretion by irritating the mucous membrane of the GIT. The increased luminal content will initiate gastrointestinal motility. *Virechana* is having action at the level of the microbiome by reducing the *E. coli* colonization and after the follow-up period, there are appreciable changes observed in the gut flora dysbiosis and this further maintains the stability of gut flora.⁷

CONCLUSION

The gut and lungs are anatomically distinct organs, but there are different forms of cross-talks in terms of anatomic communication and complex pathways involving their microbiota reinforced the existence of a gut-lung axis. Decreased lung microbiota diversity and proteobacteria expansion are associated with both Bronchial asthma severity and exacerbations. For a better understanding of the working principle behind the *Ayurvedic* treatments, the latest advances in biomedicine should be used well. While going through the *Ayurvedic* literature we can see that the emerging concept of the gut microbiome and its relation to the lungs and brain is the repetition of the concept “*Roga Sarvepi Mande Agnou*” and the origin of all disease starts from the gut, which means that all diseases are manifested because of the impaired metabolic function at the level of the gastrointestinal system.

REFERENCE

1. Dharmage SC, Perret JL, Custovic A. Epidemiology of Asthma in Children and Adults. *Front Pediatr*. 2019 Jun 18; 7:246.
2. Jindal SK, Gupta D. The relationship between tobacco smoke & bronchial asthma. *Indian J Med Res*. 2004 Nov;120(5):443-53.
3. Tiotiu AI, Novakova S, Labor M, Emelyanov A, Mihaicuta S, Novakova P, Nedeva D. Progress in Occupational Asthma. *Int J Environ Res Public Health*. 2020 Jun 24;17 (12):4553.
4. Chen E, Miller GE. Stress and inflammation in exacerbations of asthma. *Brain Behav Immun*. 2007 Nov;21(8):993-9.
5. Lazar V, Ditu LM, Pircalabioru GG, Gheorghe I, Curutiu C, Holban AM, Picu A, Petcu L, Chifiriuc MC. Aspects of Gut Microbiota and Immune System Interactions in Infectious Diseases, Immunopathology, and Cancer. *Front Immunol*. 2018 Aug 15; 9:1830.
6. Clapp M, Aurora N, Herrera L, Bhatia M, Wilen E, Wakefield S. Gut microbiota's effect on mental health: The gut-brain axis. *Clin Pract*. 2017 Sep 15;7(4):987.

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