

**ANALYTICAL REVIEW OF *NIDANARTHAKARA ROGA* OF *SHWASA ROGA*: A SCIENTIFIC APPROACH**

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**ABSTRACT**

Difficulty or shortness in breathing is termed as "*Shwasa*". *Shwasa Roga* is a disorder of *Pranavaha Strotas*. Here *Nidanarthakara Roga* of *Shwasa Roga* as stated by *Acharya Charak* with a scientific approach have been explained. *Shwasa Roga* is characterized predominantly with difficulty in breathing which is termed as dyspnea. It is highly essential to recognize the underlying pathology and related *Samprapti Ghatakas* (components of pathogenesis) based on clinical signs and symptoms and causes of dyspnea. This understanding helps physician to choose most appropriate therapeutic approach. Here the aim is to explain *Nidanarthakar Roga* (etiological factors causing disease) of *Shwasa Roga* with modern perspective leading to dyspnea. *Shwasa Roga* is caused by vitiated *Kapha* and *Vata* mainly and is designated as "*Pitta Sthana Samudbhawa Vyadhi*" (i.e GIT origin). Therefore efforts have been made to explain *Nidanarthakara*

*Roga* of *Shwasa Roga* described in Ayurvedic classical texts with applied and modern perspective.

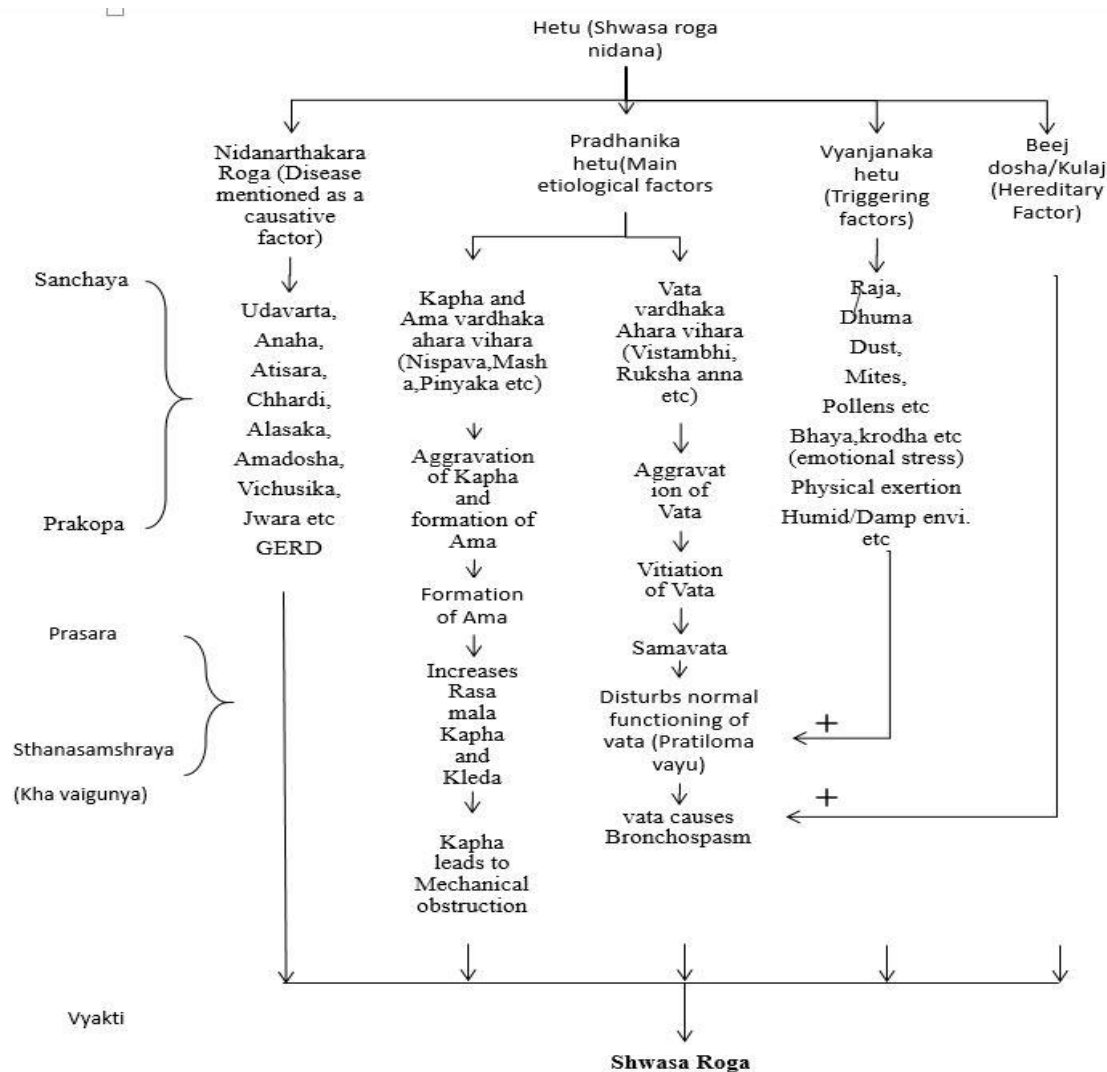
**KEYWORDS:** *Shwasa Roga*, *Nidanarthakara Roga*.

## INTRODUCTION

*Nidan* is the one which indicates causative factor and sign and symptoms of a disease. A single etiological factor may produce a single disease or many factors together may produce a single disease and vice-versa. This occurs in the case of *Shwasa Roga*. It can be produced by one or more etiological factors. *Nidan* has got much importance in such disease which remains for longer period. *Vyadhi* goes on as long as patient gets exposed to these *Nidana* (etiological factors) and *Nidanarthakara Roga* (disease as a cause in manifestation of disease). Hence brief knowledge is essential to avoid *Nidan* and treat the underlying cause which can either be *Aharaj*, *Viharaja* or a disease itself as a causative factor. To be more precise; *Shwasa Roga* manifests as *Nidanottha* and *Vyadhija Hetus*. The various etiological factors causing *Shwasa Roga* are studied under *Ahara*, *Vihara* and *Nidanarthakara Roga* which is described below.<sup>[1]</sup>

*Aharaja* factors includes intake of *Vidahi* (Irritant food which causes burning sensation), *Abhishyandi* food (which increases *Kleda* in *Dhatu*, *Mala* and *Strotas* and having slimy property), *Guru Ahara* (heavy for digestion), *Ruksha Ahara* (excessive rough), *Shita Padartha* (cold things), *Vistambhi* (Food that causes constipation), *Pishta Bhojana* (food prepared from flour). Intake of *Nispava* (Flat pea), *Masha* (Black gram), *Pinyaka* (Residual part left after extraction of *Sneha* from seeds), *Jalaja Mamsa* (Meat of aquatic animals), *Shaluka* (Root or stalk of lotus), *Dadhi* (Curd), *Ama Kshira* (Intake of unboiled milk), *Tilataila* (sesamum oil). Also *Ahara Vidhi Vyatikrama* includes *Vishamashana* (intake of irregular quantity and at irregular intervals), *Upvasa* (fast), *Adhyashana* (eating before digestion of previous meal); leading to vitiation of *Agni*. All these factors leads to aggravation of *Kapha*, *Vata Dosha*. Therefore *Kapha Vata Shamaka Chikitsa*, *Vatanulomana* and *Strotoshodhaka* food and drugs are advised in the management of *Shwasa Roga*.

External factors like exposure *Raja* (pollen,dust), *Dhuma* (smoke etc), *Vata* (direct exposure to wind), *Shita Sthana Sevana*, *Vyayama* etc are said to be triggering factors in manifestation of dyspnea.

**SAMPRAPTI OF SHWASA ROGA****Table no. 1: Nidananthakar Roga.**

Sr. No.	Nidanarthakara Roga	Ch. S. <sup>[2]</sup>	Su. S. <sup>[3]</sup>	A.S. <sup>[4]</sup>	A.H. <sup>[5]</sup>
1	Jwara	+		+	+
2	Pratishyaya	+			
3	Kasa			+	+
4	Kshata	+			
5	Kshaya	+	+		
6	Pandu	+		+	+
7	Anaha	+			
8	Atisara /Amatisara	+		+	+
9	Visuchika	+			
10	Alasaka	+			
11	Udavarta	+			
12	Amapradosha/Ama	+	+		
13	Chhardi / Vamathu	+		+	+
14	Raktapitta	+			
15	Daurbalya	+			

16	Apatarpana	+			
17	Visha	+		+	+

*Nidan* (Etiological factors), *Arthakar* (which acts like) and *Roga* (disease). Thus disease which acts like *Nidan*. Various classification of *Nidan* have been mentioned in Ayurveda depending on the role they play in manifestation of disease. One such unique concept is *Nidanarthakara Roga* regarding pathogenesis of disease.

### ***Udavarta***

Due to constant intake of *Ruksha* food, *Vistambhi* food, *Sheeta Ahara - Vihara*, suppression of natural urges leads to vitiation of *Vata* and *Jatharagni Mandhya* leading to formation of *Aam*. This leads. *Mala-sanchaya* (obstruction of *Mala-Mutra –Vata*) due to abnormal functioning of *Vata* i.e due to *Pratilomo Gati* abnormal functioning of *Vayu* occurs which in turn disturbs normal peristaltic movement of gut organs like oesophagus, stomach, intestine.

### ***Anaha***

It is caused due to *Apana Vaigunya* i.e abnormal functioning of *Apana Vayu* which is responsible for evacuation of stool, urine, semen, flatus, from the body. Due to its abnormal functioning accumulation of *Aam / Apakva rasa* in *Pakvashaya* occurs leading to *Purishaja Anaha* leading to *Vata Prakopa* and *Strotosanga* which may result in breathlessness.

In GERD - Gastro-Esophageal Reflux disease, Broncho constriction may be produced by spillage of acid into larynx or upper airways. This is particularly likely to be a problem at night. Although relationship between Asthma & GERD is unclear, there is evidence for 2 related mechanisms The irritation by acid to nerve receptors in oesophagus may produce a reflex irritability in vagus nerve, producing increased sensitivity to cough inducing stimuli in lungs. In addition, microscopic food particles, & acid may be aspirated into lungs from refluxed material, triggering initial round of inflammation that sets off attack.

### ***Pandu***

*Pandu* and *Shwas Roga* share common *Nidans* like intake of *Nispawa, Masha, Pinyaka, Tila taila, Vidagdha* food, excessive *Maithyuna* leading to *Pitta (Sadhaka Pitta Dusthti)* and *Rakta Dushiti*. Excessive and continuous *Nidana Sevana* having *Ushna, Tikshna, Vishamashan* food leads to *Pitta* provocation causing *Agnimandhya*. Increase in *Aapyata* (Liquidity) and *Kleda* (moisture); vitiated *Drava Guna* of *Pitta*. This results in vitiation of *Rasa Dhatu* eventually leading to vitiation of further *Dhatus* in serial order. As a result of

this; *Rasa Dhatu Mala* i.e *Kapha* causes *Gurutva* (Heaviness), *Sthaithily* (flabbiness) in *Uttarottara Dhatu and Ojas*.

Thus due to be reduced RBCs oxygen carrying capacity of cell reduces which leads to Hypoxia. This Hypoxia, Hypercapnea, leads to stimulation of chemoreceptors. There are 2 types of chemoreceptors - central (brain) and peripheral (carotid and aortic region). Thus due to hypoxia; stimulation of peripheral chemoreceptors. This leads to hyperventilation and thus leading to difficulty in breathing.<sup>[6]</sup>

### ***Atisara***

Here *Tamaka Shwasa*, *Hikka Anubandha* in *Atisara* is mentioned as *Asadhya lakshan* in *Sannipatika Atisara*. Excessive *Nidan Sevan*, *Viruddhahana*, leads to *Vatapradhan Tridosha Prakopa*, which leads to *Agnimandhya*. Here due to *Vata Vriddhi* increased *Drava Guna*, reduced *Ushna Guna* of *Pitta* leads to discharge of watery stool. Here *Apana Vayu*, *Saman Vayu*, *Kledaka Kapha* vitiation occurs which leads to manifestation of *Ama*; resulting in *Strotorodha*.

Due to severe diarrhoea, Dehydration occurs (due to severe fluid loss) leading to Hypovolaemia.

Baroreceptors (carotid sinus & and Aortic Arch), sense reduction of circulating fluid and send signals to brain to increase sympathetic response. This sympathetic response is to release epinephrine and nor epinephrine which results in peripheral vasoconstriction in order to conserve circulating fluid for vital organs for their survival. Peripheral vasoconstriction accounts for cold extremities, increased heart rate and increased cardiac output resulting in difficulty in breathing.

### ***Chhardi***

Exhalation and vomiting is done by diaphragm which is supplied by phrenic nerve which can be compared with *Udana Vata Karma*.

Due to sustained vomiting; acid rich fluid is lost directly from the body. This leads to Hypovolemic Metabolic alkalosis. In the case of sustained vomiting, loss of gastric acid is immediate cause of alkalosis. Loss of Sodium and fluid leads to Hypovolemia. Hypokalaemia occurs due to potassium ion (K<sup>+</sup>) loss in vomitus. This changes in PH leads to stimulation of central chemoreceptors which increases respiratory rate thus producing difficulty in

breathing.<sup>[7]</sup>

### **Raktapitta**

As per *Samanya-Vishesha* and *Ashaye Ashrayee Siddhant* aggravation of *Pitta* and *Rakta* occurs due to *Kshara-Amla* etc *Nidan Sevan*. This increases *Pitta* which in turn vitiates *Rakta*. Due to *Ushnatva* of *Pitta*, *Drava* part of other *Dhatus* like *Mamsa*, *Meda* etc oozes out of their respective tissues and gets mixed with *Rakta Dhatu*. So this enhances blood quantity in blood vessels creating immense pressure. Thus walls of blood vessels get damaged and starts flowing through various openings like nose, mouth etc due to increased pressure of blood and *Ushnatva* of *Pitta*.

Hemorrhage causes Hypoxia. Hypoxia in turn stimulates chemoreceptors leading to increase in respiratory rate. The catecholamines which are secreted in large quantities due to hemorrhage, increases respiratory movements through Reticular Activating system (RAS). Thus leading to difficulty in breathing.<sup>[8]</sup>

### **Pratishyaya**

*Raja*, *Dhuma*, *Shitambu Sevan* etc are etiological factors of *Pratishyaya* & *Hikka Shwasa* which explains that this factors have impact on local Immunity of *Pranavaha Strotas*. This factors stimulate immune response leading to secession from nasal cavity (*Pratishyayamudiryetu*). *Sitairavanyaya* is mentioned as one of the cause wherein *Avashyaya* means *Tushar* i.e water drops which may be compared with dew drops. In present day coolers and air conditioners have been found commonest etiological factors. Due to hypertrophied turbinates in nasal mucosa may leading to difficulty in breathing.

### **Aamadosha- Alsaka- Visuchika**

*Alasaka* and *Visuchika* are described under *Aamdoshaja Vyadhi*. Due to *Jatharagnimandhya*; improper formation of *Adhya Dhatu Rasa Dhatu*. This leads to formation of *Ama* (Improper digested food) leading to obstruction and abnormal function or movement of *Vata*; thus resulting in breathlessness.

Gastroparesis means sluggish, impaired movement or loss of movement of alimentary canal. It is also called delayed gastric emptying resulting in food remaining in stomach for an abnormally long time. Normally stomach contracts to move food into small intestine. This contraction is controlled by vagus nerve. Alimentary canal is controlled by ANS by Vagus

nerve. Any disturbance in normal functioning of Vagus nerve decreases gastric motility thus resulting in delay in emptying of food & produces indigestion.

### ***Jwara***

*Manasa Deha Santapa* is cardinal feature of *Jwara* i.e fever.

Temperature is regulated in Hypothalamus. The trigger of a fever, called pyrogen, results in release of prostaglandin E2 which in turn acts on Hypothalamus which creates a systemic Response in body, causing heat generating effects to match a new higher temperature set point. When set point is raised, body increases its temperature through both active heat generation and Heat retention. Peripheral vasoconstriction both reduce heat loss through skin and causes a person to feel cold. norepinephrine increases thermogenesis in brown adipose tissue, & muscle contraction through shivering raises metabolic rate which in turn causes increased respiratory rate leading to difficulty in breathing.

### **Kshata Kshaya**

When *Dhatus* are not nourished properly, it leads to *Ojokshaya* (low immunity) due to improper *Uttarottara Dhatu* formation and ultimately infection by pathogenic microorganisms thus causing further *Kshaya* and *Dosha Prakopa*.

### ***Apatarpana***

*Apatarpana* means malnourishment *also* leads *Dhatukshaya* which cause symptom of breathlessness.

### ***Visha***

(*Visha*) are responsible for *Tridosha Prakopa*, further it may lead to various pathological changes by release of various inflammatory mediators in body which are responsible for inflammation of tissues like bronchi, alveoli etc and vascular imbalance, leading to hypoxia and thus breathlessness.

## **DISCUSSION**

Causative factors plays vital role towards the occurrence of disease. In some cases disease itself becomes causative factor for some other disease. *Acharya Charak* has described this concept as *Nidanarthakara Roga*.<sup>[9]</sup> In *Shwasa Roga* common causative factors in the form of *Ahara*, *Vihara* and as a consequence of other disease are described. Here efforts have been made to justify each *Nidanarthakara Roga* leading to difficulty in breathing. As *Shwasa*



*Roga* is said to be "*Pittasthana Samudbhava Vyadhi*" and due to *Pratiloma Vayu* various disease as described by *Acharya Charak* act as a *Nidan* is manifestation of *Shwasa Roga*. *Amadosha*, *Alasaka*, *Visuchika* manifests due to *Agnimandhya* and thus leading to *Strotorodha* leading to difficulty in breathing. As per contemporary science gastroparesis occurs due to irritation of vagus nerve which may lead to dyspnea. In *Pandu* due to hypoxia; stimulation of chemoreceptors leading to increased respiratory rate which in turn leads to difficulty in breathing. *Udavarta*, *Anaha* occurring as a consequence of *Pratiloma Vayu* (i.e abnormal functioning of *Vayu*) leads to development of GERD which leads to difficulty in breathing. In *Atisara*; excess fluid loss leads to dehydration and hypovolemia which leads to stimulation of baroreceptors which creates vasoconstriction in order to save fluid for vital organs thus leading to increased respiratory rate which leads to difficulty in breathing. *Chhardi* occurs due to abnormal functioning of *Udana Vata*. Due to sustained vomiting acid rich fluid is lost leading to hypovolemic metabolic alkalosis leading to difficulty in breathing. Due to excess fluid loss in *Raktapitta* hypoxic condition leads to stimulation of chemoreceptors thus developing difficulty in breathing.

## CONCLUSION

*Nidanarthakaro Rogo Rogasyapyupalabhyate*<sup>[5]</sup>

This means disease can act as causative factors of other disease as well. Conditions in their primary stages or forms manifest themselves as diseases and subsequently act as causative factors for other diseases. They thus play a dual role as a disease and as a causative factor. Some of these play just one role as well-either as a disease or as a causative factor. Here detailed explanation of such *Nidanarthakara Roga* of *Shwasa Roga* have been explained along with modern correlation leading to difficulty in breathing due various diseases mentioned in *Ayurvedic* text as per *Acharya Charak* in *Chikitsa Sthana Adhyaya*. Amongst 5 types of *Shwasa Roga Maha*, *Urdhva*, *China* are said to be *Prana Ghataka* i.e they manifest as an end stage symptom of vital organ damage or failure. Hence they are said as *Asadhya* that means are said to be incurable. While *Kshudra* and *Tamaka Shwasa* are the one which can be seen in routine life and can be treated.



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