

A Conceptual Study of *Trimarma Abhihata Laxana* in the Context of Modern Era

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ABSTRACT

Background: *Trimarma* refers to three vital areas of the body that hold significant clinical importance. These areas are classified as *Sadyopranahara Marma*, as any physical and pathological injury to these regions can result in life threatening consequences. Due to their critical role in sustaining life, they are included among the *Dasha Pranayatana*. These days, road accidents rise with gadget use, blue light harms eyes, noise impacts ears, radiation affects brains. Diet and stress affect Rasa dhatu and manas, involving Hridaya. Excess fluids, alcohol, poor sleep harm kidneys. AIMS AND OBJECTIVES: To study the applicability of *Trimarma Abhihata Lakshana*. Materials and methods: Ayurvedic classical texts describe the concept of *Trimarma Abhihata Lakshana*, related diseases and management, Ramdas Nayak's clinical pathology book and research articles were utilized. DISCUSSION: The concept of *Trimarma Abhihata Lakshana* correlates with Ischemic Heart Disease, Chronic Kidney Disorders, and Cerebrovascular Disorders was discussed. CONCLUSION: Studying *Trimarma Abhihata Lakshana* is crucial for integrating ancient Ayurvedic principles with modern healthcare challenges. This concept highlights the Heart (Hridaya), Head (Shira), and Urinary bladder (Basti) as vital organs whose injuries can significantly impact health.

Key Words *Trimarma, Dasha Praanayatana, Sadyo Pranahara Marma, Uttamanga*

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INTRODUCTION

Charaka Samhita Siddhi Sthana deals with a brief introduction to *Panchakarma* therapies, describing sequences of *Panchakarma* procedures, their duration, *Ayoga*, and *Atiyoga* Lakshana with elaborated examples. In this context, the *Trimarma Siddhi* chapter explains the importance of three *Marmas* in purification procedures. The *Trimarmas*—*Hridaya* (heart),

Shira (head), and *Basti* (urinary bladder)—are all considered *Sadyopranahara marma*¹, requiring utmost precaution in all aspects.

On the other hand, the *Trimarmiya Siddhi Adhyaya* describes vital points and their *Abhihanana Lakshana* (signs of injury) along with treatment aspects². The discussion of *Hridaya Roga* and *Shira Roga* occurs in the *Kiyanta Shirasiya Adhyaya*³. Detailed

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explanations regarding *Marma* are found in *Sushruta Samhita Sharira Sthana*, specifically in the 6th chapter⁴.

In the modern era, the lifestyle of the population has changed significantly in the 21st century. Factors such as lack of exercise, sedentary lifestyles, increased mental stress, and certain environmental factors lead to life-threatening diseases affecting vital organs. Injuries to these vital anatomical regions can precipitate pathological conditions affecting essential bodily structures, such as Ischemic Heart Disease, Chronic Kidney Disorders, and Cerebrovascular Disorders.

Regarding the *Trimarmiya Siddhi Adhyaya*, *Shiro Marma Abhihanana Lakshana* plays a significant role in cerebrovascular diseases, *Hridaya Abhihanana Lakshana* in ischemic heart disease, and *Basti Abhihanana Lakshana* in chronic kidney disease. Therefore, this conceptual study of *Trimarma Abhihanana* is crucial for understanding the clinical aspects of *Marma* in the context of the modern era.

AIM OBJECTIVES

1. To study the applicability of *Trimarma Abhihanana Lakshana*.
2. To explore the concept of *Marma* in ancient Indian medicine and elucidate its pathophysiology.
3. To review the context and understanding of *Trimarma Abhihanana Lakshana* and its connection with the modern era.

4. To establish a correlation between the Ayurvedic concept of *Marma Abhihata* and contemporary understandings.

MATERIALS AND METHODS

In our current work, we have studied and reviewed textbooks such as *Charaka Samhita*, *Sushruta Samhita*, *Astanga Hrudaya*, and Ramdas Nayak's clinical pathology book. We have also utilized research articles available on the internet and web pages to support the Ayurvedic concept of *Trimarma Abhihanana Lakshana*, which closely aligns with the teachings of these ancient text.

REVIEW ON TRIMARMA

There are 107 *Marmas* in the body, which are points of vital energy (*prana*) located in various parts. Among them, the *Trimarmas* are three vital areas of the body that hold unparalleled clinical importance in the context of *Marma*. The *Trimarmas* are:

1. *Hridaya* (Heart)
2. *Shira* (Head)
3. *Basti* (Urinary Bladder)

These *Trimarmas* are considered *Sadyopranahara Marma*, meaning injury to them can lead to deformity of structures, severe pain, loss of movement, and in extreme cases, death. Detailed information about each *Trimarma* is provided in the **Table 1**.

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Table 1 Basic information of *Trimarma*⁶

<i>Marma</i>	No	Structral Basis	<i>Shadanga Anusara</i>	Measurement	Effect
<i>Hridaya</i>	1	<i>Siramarma</i>	<i>Madyama Shareera Marma</i>	4 Angula	<i>Pranahara</i>
<i>Shira</i>	25	<i>Sira, Snayu, Sandhi Marma</i>	<i>Urdwagata Marma</i>	Based on <i>Marma</i>	<i>Pranahara</i>
<i>Basti</i>	1	<i>Snayu Marma</i>	<i>Madyama Shareera Marma</i>	4 Angula	<i>Pranahara</i>

Pathophysiology of *Sadyopranahara Marma*

*Sadyopranahara Marma*⁷

Agni predominance



Injury to *Sadyopranahara Marma* leads to *Agni Ksheenata*.



Sadyopranahara due to impairment of *Agni*.

Leads to death immediately or within 7days.

Trimarma Abhihanana laxana with Ischemic Heart Disease, Chronic Kidney Disorders, Cerebrovascular Disorders.

- *Kasa* - Cough
- *Shwasa* - Breathlessness
- *Balakshaya* - Weaknesses
- *Klomapakarshana*-Form of chest pain
- *Jihwa nirgama* -Prolapse of tongue

Hridaya Abhихata - Injuries to *Hrudaya* can manifest in various symptoms, affecting both physical and emotional wellbeing. These symptoms may include⁸.

- *Apasmara*-Epilepsy
- *Unmada* - Psychosis
- *Chittanashadaya* - Loss of mental integrity
- *Mukhatalushosha* - Dryness of palate and tongue

*Samprapthi of Hridaya Roga*⁹

Nidana



Dosha gets vitiated and it resides in *Hridaya*



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Then it vitiates *rasa* (*Hridaya* is being seat of *rasa*)



Produce *Hridaya roga*.

Influence of Vyana Vata on Hridaya

Vyana Vata consistently propels the *Rasa dhatu* from the heart in a continuous and vigorous manner throughout the entire body¹⁰. The *Rasa dhatu* is ejected from the heart and travels throughout the body via twenty-four *Dhamanies*, as described by *Sushruta*. This indicates that the circulation of *Rasa Dhatu* occurs through all of these channels throughout the body¹¹.

During the process of *Rasa Sambhava*, Commentator *Chakrapani* advised physicians not to focus exclusively on *Rasa* but also to consider blood and other fluids when studying their circulation. The entity responsible for the appropriate pumping function is termed *Vikshepochita Karma*, attributed to *Vyana Vayu*. This circulation occurs continuously throughout the entire body, simultaneously and without interruption¹².

Oja and Hridaya

Oja is the essence of all *Dhatu*s from *Rasa* to *Shukra*. It exists in two types: *Para Oja* and *Apara Oja*. *Para Oja*, specifically *Ashtabindu* (eight drops), is located in *Hridaya*¹³. *Dasha Dhamani* originate from the root of *Hridaya*, aiding in the circulation of *Oja* throughout the body¹⁴. *Oja*, located in *Hridaya*, also blends with *Rasa Dhatu* and *Rakta Dhatu*, circulating through

the *Dasha Dhamani* and nourishing the entire body. It provides strength (*Bala*) to *Hridaya* and all *Dhatu*s. Due to the strength derived from *Oja*, the *Hridaya* can function continuously throughout life without interruption. Therefore, depletion of *Oja* (*Oja Kshaya*) can potentially lead to death.

HRIDAYA ABHIHANANA LAXANA CORELATING WITH ISCHEMIC HEART DISEASE¹⁵.

Ischemic heart disease(IHD)

Definition – Ischemic heart disease consists of Group of disease, in which there is inadequate supply of blood and oxygen to a portion of the myocardium.

List of Ischemic heart disorders.

1. Myocardial infarction.
2. Angina pectoris-stable angina, unstable angina, Prinzmetal variant angina
3. Chronic IHD with heart failure
4. Sudden cardiac death due to fatal ventricular arrhythmia.

Aetiology

1. Decreased/Impaired Coronary Blood Flow
 - Coronary arterial occlusion is the primary cause of myocardial ischemia.

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- Coronary Atherosclerosis : It narrows one or more of the epicardial coronary arteries, decreasing coronary blood flow in approximately 90% of cases. Hence, Ischemic Heart Disease (IHD) is often referred to as coronary artery disease (CAD) or coronary heart disease.

Risk of Ischemic heart disease depends on:

a) Extent and severity of pre-existing (Fixed) atherosclerotic occlusion

- Number of coronaries affected/involved: Atherosclerosis may affect one, two, or all three coronaries.

- Structure of plaque: Plaques can be categorized into stable and vulnerable (unstable) plaques:

- Stable plaques: These have dense collagenous and thick fibrous caps with minimal inflammation and a small underlying atheromatous necrotic core. They are less likely to rupture.

- Vulnerable plaque: These have cores with many foam cells and abundant extracellular lipid. The fibrous cap is thin with few smooth muscle cells or groups of inflammatory cells and increased inflammation. These are more likely to rupture.

b) Sudden Morphological Changes in Atheromatous Plaque

It is known as acute plaque change and is followed by thrombosis, producing unstable angina, myocardial infarction, and sudden cardiac death in many patients. Therefore, it is termed

acute coronary syndrome. This is discussed under pathogenesis of myocardial infarction.

2. Increased Myocardial Demand

It occurs:

- With myocardial hypertrophy.
- Increased heart rate (tachycardia).

Pathogenesis of Ischemic heart disease

Ischemic heart disease is a pathophysiological condition caused by an imbalance between myocardial oxygen demand and its supply. The nutrition of the myocardium depends on the oxygen-carrying capacity of the blood and the amount of coronary blood flow. Ischemia occurs when there is an imbalance between myocardial oxygen demand and the ability of the coronary arteries to supply oxygenated blood. This can result from coronary artery spasm or intravascular clot formation at the site of a ruptured atherosclerotic plaque, which restricts coronary blood flow. These mechanisms can act simultaneously.

Typically affecting large coronary arteries, ischemic heart disease involves stenosis that reduces coronary reserve in proportion to the degree of vasoconstriction. Stenosis may be further complicated by spasms that exacerbate the narrowing. Ruptured atherosclerotic plaques often trigger intravascular clotting, leading to acute coronary events.

During acute ischemia, the myocardium experiences oxygen deficiency, impairing the oxidation of glucose and free fatty acids (FFAs). Enzymatic cytoplasmic glycolysis becomes the primary source of energy. Catecholamines

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(epinephrine and norepinephrine) released under stress intensify FFA hydrolysis, which are then utilized by the heart. As glucose supply diminishes, oxidation of FFAs becomes the predominant energy source, increasing oxygen consumption while rapidly depleting reserves. Consequently, cells shift to anaerobic glycolysis, resulting in the accumulation of lactate and hydrogen ions.

Even brief periods of ischemia, lasting several seconds, impair myocardial contractility and relaxation. If myocardial perfusion is not restored within 45-60 minutes, heart cell necrosis occurs, leading to myocardial infarction (heart attack)¹⁶.

Symptoms

- Chest pain - The pain usually in ischemic heart diseases is described as tightness in chest, which can associate with radiate to base of neck, and jaws, arm.
- Shortness of breath, Dizziness, Palpitations, Sweating, Nausea, Vomiting, Loss of consciousness, Cough

Samprati of Shiroroga¹⁸

Shiroroga Nidana



Vatadi dosha aggravated



situated in *Shira*



leads to *Shiroroga*

SHIRO ABHIHATA

Injuries to *SHIRA* can manifest in various symptoms, affecting both physical and mental state of wellbeing. These symptoms may include¹⁷. *Manyastamba* - Stiffness of neck

- *Arditha* - Hemiplegia with facial palsy
- *Chakshuvibrama* - Improper movements of eyeball
- *Mohodwestana* - State of confusion
- *Chestanasha* - Loss of body function
- *Kasa* - Cough
- *Shwasa* - Breathlessness
- *Vadana jihwatwa* - Deviation of face
- *Hanugraha* - Stiffness of jaw
- *Mukhagadgadatwa* - Dumbness or hoarseness of voice
- *Akshinimilana* - Ptosis
- *Gandaspanadana* - Twitching in neck
- *Jrumbana* - Yawning
- *Lalasarava* - Salivation
- *Swarahani* - Aphonia

Shiro Abhihanana Lakshanas

correlating with cerebrovascular disease¹⁹

Cerebrovascular disease refers to a group of disorders affecting the brain caused by pathological processes involving the blood vessels. Common cerebrovascular diseases include:

- Cerebral aneurysms.
- Cerebrovascular malformation

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- Arteriovenous malformation (AVM)
- Dural arteriovenous fistula
- Cavernous malformation (cavernous haemangioma)
- Venous malformation
- Carotid stenosis due to atherosclerotic disease
- Intracranial stenosis due to atherosclerotic disease (ICAD)
- Carotid or vertebral artery dissection due to fibromuscular dysplasia (FMD)
- Carotid artery disease, atherosclerosis, trauma and dissection
- Inflammatory diseases, vasculitis and mycotic aneurysm
- Acute ischemic stroke with large artery occlusion
- Acute haemorrhagic stroke due to subarachnoid haemorrhage (SAH), subdural hematoma (SDH) or intraparenchymal cerebral haemorrhage (IPH; ICH)
- Moyamoya syndrome.

Basti Abhithata

Injuries to *Basti* can manifest in various symptoms, These symptoms may include²⁰.

- *Vata Varcha Mutronigraha* -Retention of flatus, urine, stool.
- *Vankhsna Mehana Basthi Shula* -Pain in groin, genital and bladder region.
- *Kundalodavarta* - Retrospective movement of *Vata* and *Mutra*.

Pathological mechanism

- Thrombosis and embolism can lead to the occlusion of blood vessels, resulting in infarction or ischemic injury.
- Rupture of a blood vessel can cause haemorrhage, resulting in direct damage to the parenchyma.
- Stroke is characterized by its sudden onset and causes neurological damage due to either focal ischemia or haemorrhage.

*Symptoms*Dizziness

- Nausea
- Vomiting
- Severe headache
- Confusion
- Memory loss
- Abnormal slurred speech
- Loss of balance, coordination, or ability to walk
- Numbness
- Weakness in the arm
- Deviation of the face
- *Nabhikukshishronigrahadaya* - Stiffness in umbilicus, epigastrium, rectum and pelvis.

- *Gulma* - Abdominal lumps.
- *Anilastila* - Solid mass aggregate due to *Vata*

- *Upastambana* - Obstruction or retention of urine

*Samprapthi of Basthi Roga*²¹

Tridoshaja nidana

↓

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Vata Kapha mainly

↓

Rasa Rakta Udaka sweda mainly vitiates

↓

Later stage Upadhatu (Sira)

↓

Related to Basti disorders

Basti Abhihanana Lakshana corelating with chronic kidney disease²².

Chronic kidney disease (CKD)

Chronic kidney disease (CKD) is characterized by structural or functional abnormalities of the kidneys persisting for more than 3 months, as evidenced by kidney damage, with or without decreased glomerular filtration rate (GFR) (<60 ml/min/1.73 m²).

Pathogenesis: Chronic kidney disease may result from disease processes in any of the following categories:

a. **Prerenal Disease:** Chronic prerenal disease occurs in patients with conditions such as chronic heart failure or cirrhosis, leading to persistently decreased renal perfusion. This predisposes the kidneys to multiple episodes of intrinsic kidney injury, such as acute tubular necrosis (ATN), which contributes to progressive loss of renal function over time.

b. **Intrinsic Renal Vascular Disease:** The most common form of chronic renal vascular disease is nephrosclerosis, characterized by chronic damage to blood vessels and glomeruli.

This condition gradually impairs kidney function and contributes to the progression of CKD.

Other renal vascular diseases include renal artery stenosis caused by atherosclerosis or fibromuscular dysplasia, which can lead to ischemic nephropathy over months or years. Ischemic nephropathy is characterized by glomerulosclerosis and tubulointerstitial fibrosis.

Categories of Chronic Kidney Disease (CKD):

a. **Intrinsic Glomerular Disease (Nephritic or Nephrotic):** A nephritic pattern is indicated by abnormal urine microscopy showing red blood cell (RBC) casts, dysmorphic red cells, and occasionally white blood cells (WBCs), along with varying degrees of proteinuria. Common causes include post-streptococcal glomerulonephritis, infective endocarditis, shunt nephritis, IgA nephropathy, lupus nephritis, Goodpasture syndrome, and vasculitis²³.

b. **Postrenal (Obstructive Nephropathy):** Chronic obstruction can result from conditions such as prostatic disease, nephrolithiasis (kidney stones), or abdominal/pelvic tumours exerting mass effect on the ureters. Retroperitoneal fibrosis is a rare cause of chronic ureteral obstruction.

Stages of Chronic Kidney Disease:

- Stage 1: GFR ≥ 90 mL/min/1.73 m² (Normal or elevated GFR)
- Stage 2: GFR 60-89 mL/min/1.73 m² (Mild decrease)

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- Stage 3: GFR 30-59 mL/min/1.73 m² (Moderate decrease)
- Stage 4: GFR 15-29 mL/min/1.73 m² (Severe decrease; pre-dialysis)
- Stage 5: GFR < 15 mL/min/1.73 m² (Kidney failure, requiring dialysis or transplantation)

Symptoms Nausea

- Vomiting

- Loss of appetite
- Fatigue and weakness
- Sleep problems
- Urinating more or less than usual
- Decreased mental sharpness
- Muscle cramps
- Swelling of feet and ankles (edema)
- Dry, itchy skin
- Hypertension (high blood pressure)
- Shortness of breath

Chikitsa of Trimarma Abhahata²⁴-Trimarma Abhahata Chikitsa explained in Table 2.

Table 2 Chikitsa of Trimarma

Sl. No	Marma Abhahata	Treatment
1.	Hrudaya	<ul style="list-style-type: none"> • Hingu Churna with Lavana and Matulunga rasa. • Hrudya drugs (Cardio nourishing drugs) • Stiradi Mula rasa with Sharkara • Bilwadi Panchamula Rasa Siddha Yavagu (Rice preparation) • Hridroga Chikitsa -Cardiac disease treatment
2.	Shiras	<ul style="list-style-type: none"> • Vata pacification therapies. • Abhyanga. • Sudation therapy, Upanaha (poultice) • Sneha pana (medicated ghee intake) • Nasal medications • Fumigation
3.	Basti	<ul style="list-style-type: none"> • Kumbi type Sudation • Suppositories • Enema – <ul style="list-style-type: none"> ○ Shyamadi go Mutra Siddha. ○ Bilwadi Sura Siddha. ○ Sharaka, Ikshu, Darbha, Gokshura Mula with milk with Trapusa, Ervaru Ashwa Bhija, Yava Rushabhaka kalka enema. • Oil enema -Peetadaru Siddha Taila. • Purgation with Tilwaka Grutha.

DISCUSSION

There are 107 *Marmas* which are points of *Prana* (vital energy) and are located in various parts of body. The three *Marma* head, heart, urinary bladder are most important.

Hridaya Abhahanana Laxana probable correlation description is given as following

- *Hrudiyabhahanana laxnana* - Ischemic heart disease
- *Shwasa* - Breathlessness
- *Kasa* - Cough, congestion
- *Chittanasha* - Loss of consciousness
- *Unmada* - Psychosis
- *Pralapa* – Irrelevant speech

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- *Klomapakarshana* - Chest pain

In *Ayurveda*, five types of *Hridroga* are explained, which are caused by an imbalance of *Dosha* and *Krimi*. A common feature in all these conditions is chest pain, with its intensity varying based on the involved *Dosha*. In *Vataja* type, pain is accompanied by *Vepathu* (fibrillation), Hyper kinetic activity, Sense of emptiness in heart region (*Shunyata*). The *Pittaja* type is characterized by pain along with symptoms such as fainting, giddiness, burning sensations, and perspiration. In the *Kaphaja* type, there is a feeling of heaviness in the pericardial region, often described as a stony sensation. Description of *krimiya Hridroga* indicates a very serious condition. The Pain starts in one part of heart and then gradually spreads, consuming the heart tissue. Pain is like pricked/pierced by needles or cut by weapons and it is very grave to heart condition. It should need early diagnosed and managed. It may manifest as chest pain, arrhythmia, heart failure, acute myocardial infarction like syndrome with normal coronary arteries, ventricular arrhythmia, and loss of right ventricular function leading to sudden death.

HEAD (*Shiras*)

All the control centres of sense and locomotion, along with *Prana* are located in head. clinical pathology involving *Rakta* along with analysis of *Dosha* vitiation, is essential to diagnosis of head. *Charaka* mentions that *Pranavahi Srotamsi* of *Indriya* are situated in head are connected with body produce disease such as *Ardita*, *Chestanasha*, disorders of eye. Based on these

observation understand that *Indria Buddhi* is present in head.

Shiro Abhihanana Laxana probable correlation description is given below as following

- *Shiro Abhihanana Laxana* - Cerebrovascular disease
- *Swara Hani* - Loss of speech
- *Udvestana* - Twitching pain in head
- *Vadana Jihwata* - Deviation of face
- *Moha* - Confusion
- *Chestanasha* - Loss of body functions

Note: Based on severe condition symptoms has been appearance in the disease.

Generally *Shiroroga* implies any type of disease affecting the head, therefore *Charaka* enlisted *Ardhava Bhedaka*(*hemicrania*), *headache*, *Shirabhramsha* (giddiness/vertigo), *Arditha* (Facial paralysis), Tremors of head(*Shira Kampa*), (Stiffness of head) *Gala Manya Graha*, as *Shiroroga*. Hence in general *Shiroroga* includes disease occurring in the skull, its orifices and structure related to it.

Siddhi Sthana addition four more diseases occurring in the head have been described in detail. *Shankaka*, *Ardhava Bhedaka*, *Anantavvata*, *Suryavarta*. In all these *Shiro Ruja* is the as a key symptom.

BASTHI

Basti Abhihanana Laxana probable correlation description is given below as following

- *Basti abhihanana laxana* - Chronic kidney disease

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- *Mutra varcho nigraha* - Retention of urine and stool
- *Upastambana* - Obstruction of urine
- *Udavarta* - Nausea, Vomiting, Loss of appetite, Shortness of breath
- *Gulma* - Swelling over body

Chronic kidney disease can be termed as *Jeerna Pravrudda Vrikka Roga* in Sanskrit. A disease condition with similar clinical features is described in *Charaka Samhita Chardi Chikitsa*. vomiting is the one of the clinical symptom in chronic kidney disease has some following characteristics vomiting having foul smell, bouts of vomiting ejected with great force, persistent thirst, Dyspnoea, hiccup and pain. This shows a clear picture of uremic patient with vomiting, uremic smell, thirst, breathlessness and hiccup. Management of this condition is not described which shows that period management of this condition was not available.

CONCLUSION

The conceptual study of *Trimarma Abhihanana Laxana* in the context of the modern era is crucial for understanding the intersection of ancient Ayurvedic principles with contemporary healthcare challenges. The *Trimarma* concept, rooted in Ayurveda, highlights the significance of three vital organs representing different systems: the heart (*Hridaya*), head (*Shira*), and urinary bladder (*Basti*). Injuries to these organs can lead to serious consequences, impacting overall health and well-being.

In today's lifestyle, characterized by sedentary habits, increased mental stress, and environmental factors, there's a higher risk of diseases affecting these vital organs. For instance, *Hridaya Abhihanana* (injury to the heart) correlates with ischemic heart disease (IHD), *Shiro Abhihanana* (injury to the head) with cerebrovascular disease (CVD), and *Basti Abhihanana* (injury to the urinary bladder) with chronic kidney disease (CKD). Understanding these correlations helps in early diagnosis, prevention, and treatment of such diseases. So, this article explaining CKD, CVD, IHD in scientific way by covering its ayurvedic view as well as modern explanation.

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