IAMJ

INTERNATIONAL AYURVEDIC MEDICAL JOURNAL

Review Article ISSN: 2320-5091 Impact Factor: 6.719

A PRACTICAL APPROACH OF ASTHANINDITA PURUSH ACCORDING TO THE PRESENT ERA

Rinkal Nakawala

MD (Roganidana), Associate professor, Dept. of Roganidana, Shree O.H. Nazar College of Ayurveda, Surat, Gujarat.

Corresponding Author: rnnakawala@gmail.com

https://doi.org/10.46607/iamj1113122025

(Published Online: December 2025)

Open Access

© International Ayurvedic Medical Journal, India 2025

Article Received: 12/11/2025 - **Peer Reviewed:** 30/11/2025 - **Accepted for Publication:** 12/12/2025.

Check for updates

ABSTRACT

Ayurveda is the earliest medicine system in the world. It is the science of life that deals with every aspect of life. In Ayurveda, *Charakacharya* has described eight "*Nindya prakrities*" (undesirable constitution) according to the body constitution. Individuals with these eight types of deformities are morphologically or genetically abnormal, as it is concluded that people with these malformations are considered to be challenging to cure, and they are prone to a wide range of diseases. They refer to individuals who are generally considered socially unacceptable due to their peculiar characteristics. However, it is more than a social stigma due to various systemic disorders that may crop up and may be life-threatening conditions in many situations.

Many pathological conditions can be included in this category, which are not mentioned in Ayurveda. An effort has been made to correlate various endocrine disorders with their pathogenesis, which can be discussed in relation to *Nindita Purusha* and its significance in the current era.

Keywords: *Atisthaulya, Atikarshya*, obesity, hereditary and genetic disorders, endocrine disorders, HT, CVD

INTRODUCTION

The specific abnormalities in humans, such as physical deformities that have an abnormal physical appearance and are generally difficult to cure or cannot be treated at all, are eight in number and are collec-

tively referred to as *Nindita Purush*. *Charaka* explained eight types of physical abnormalities.

1. *Ati-hrasva* (Dwarfism/short statured/excessively small person)
2. *Ati- dirgha* (Excessive tall person/ Gigantism and Acromegaly)
3. *Ati-loma* (Hairy body)
4. *Aloma* (Hairless body)
5. *Ati-krishna* (Tanned body)
6. *Ati- Gaura* (Albine body)
7. *Ati-sthula* (Obesity)
8. *Ati- krusha* (Emaciated body)

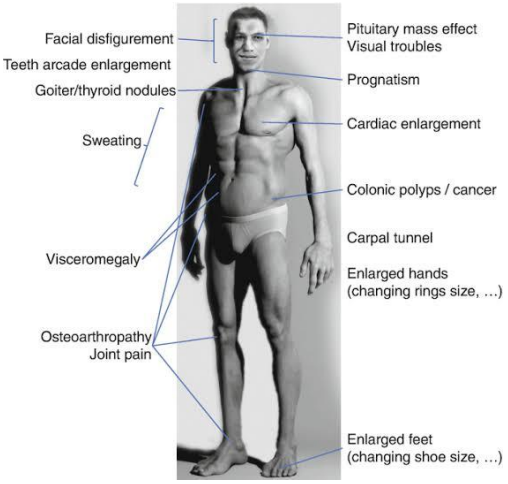
Such individuals lack sufficient disease resistance. The eight types of *Nindita purush* described here are physically condemned, not mentally. *Charaka Acharya* further stated that *Atisthula* (excessively obese) *purush* and *Atikrush* (emaciated) are more despised among all eight despised persons. These two people are more susceptible to contracting any disease. According to *caraka,* people who are *Atisthula* are more liable to be at health risk than those of *Atikrush.*

1 *Atideergha* (Acromegaly and Gigantism)

Just as the name suggests, Ati-dirgha is a disorder characterized by an overgrowth of the body compared to standard body dimensions.

The person will be excessively tall. This can be compared to Gigantism, which is of pituitary origin. Gigantism refers to abnormally high linear growth resulting from excessive action of insulin-like growth factor (IGF-I) during childhood, when the epiphyseal growth plates are open. Acromegaly is a disorder of IGF-I excess that occurs after the growth plate cartilage fuses in childhood.

Gigantism generally occurs due to a tumour in the pituitary gland that causes growth hormones to be released abnormally while a person is still young. It is rare, occurring in just three in a million, causing them to grow to heights ranging from seven to nine feet tall. Most features are -



At home with the world's tallest family. He is 7 feet tall, she is 6 feet 5 inches tall, and their bow was nearly 2 feet long.



2. *Ati-Hriswa* (Dwarfism)

As the name suggests, individuals with this disorder have shorter body proportions compared to the average. This condition also lacks treatment and is socially unacceptable.

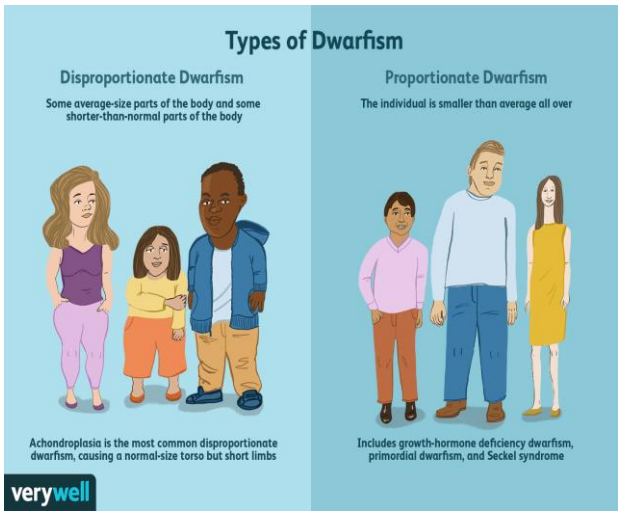
A person may be extremely short, which can be compared to dwarfism. People with dwarfism have short stature. This means that their height is under 4'10" as an adult. They are usually of normal intelligence. It

most often happens in families where both parents are of average height.

Most people have an aversion to the term dwarf and identify themselves as “Little people” and also have a community under the name - ‘Little People of America’.

Dwarfism is broadly categorized into two types based on the patient’s physical appearance

1. Proportionate Short Stature (PSS)- means that the limbs and the trunk are proportionately small.
2. Disproportionate Short Stature (DSS) - implies that the individual has a significant difference in their sitting and standing height, and either their trunk or extremities are small.

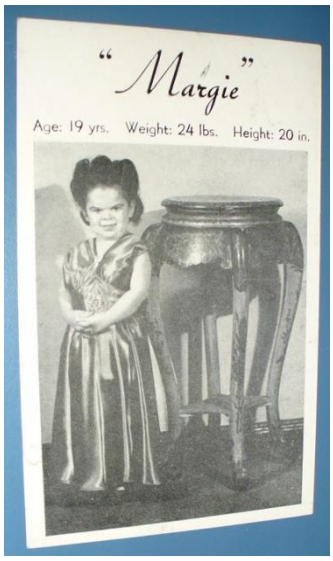


Aetiology

1. Familial Short Stature (FSS): The child’s genetic height potential can be measured by measuring the mid-parental height, which is a child’s projected adult height based on parental height measures--ment. A positive family history and the absence of underlying pathological etiologies of dwarfism can be diagnosed as a case of familial short stature.
2. Constitutional delay of growth and puberty (CDGP): The child presents with short height in childhood, but attains their target height until adulthood, also known as a ‘late bloomer’. They even enter puberty at later ages.
3. Idiopathic Short Stature (ISS): Short stature is said to be idiopathic when no other aetiology, like Endocrine/metabolic can be determined.
4. Endocrine disorders: Growth hormone deficiency is a frequent cause of dwarfism. The hypo - The thalamic-pituitary axis maintains the levels of growth hormones in the body, which then directly or indirectly, through insulin-like growth factor - 1 (IGF-1), stimulates bone elongation and growth of soft tissue and cartilage.
5. Genetic disorders: Many genetic conditions that are associated with short stature are - Down’s, Turner’s syndrome, Russell-Silver syndrome, and short stature homeobox gene deficiency syndrome.



A man in Columbus, Indiana, with Dwarfism. Here, a normal-sized torso, very short arms and legs and a large forehead.



3. *Atiloma* - Hypertrichosis

Ati-loma, as the name suggests, is a disorder in which a person suffering from this disorder has more body hair (*loma*) on the body than usual. This excess can take many forms, such as being thicker than usual or the presence of more than one *loma* from a single *lomakoopa*.

The normal amount of *loma* assumed by acharyas is three and a half crores of loma; more than this is called *atiloma.*

The complications faced by a person suffering from these disorders are as follows-

Since *loma koop* is the opening on the skin that becomes the passage for the *mala* "*sweda*" or sweat, so that it can escape the body, in the case of *ati-loma*, the sweat that is released cannot dry off properly and becomes sticky, which can lead to skin disorders or an unpleasant odour.

Hypertrichosis is characterised by excessive hair growth anywhere on the body, affecting both males and females. It is essential to distinguish hypertrichosis from hirsutism, which is a term reserved for females who grow excessive amounts of terminal hair in androgen-dependent sites.

Congenital generalised hypertrichosis is a feature of several rare inherited syndromes in which genetic errors result in the dysfunction of proteins involved in hair follicle development.

Acquired hypertrichosis lanuginosa is considered to be a paraneoplastic phenomenon, and in certain instances, precedes the diagnosis of cancer. The most common malignancies that it is associated with include lung, colon and breast cancer.



A 17-year-old teen in MP suffers from hypertrichosis, a rare werewolf syndrome. He has dense fur all over his body as a result of the highly unusual illness known as 'werewolf syndrome'.



4. Aloma

Aloma, as the name suggests, is a condition characterised by the absence of hair follicles throughout the body.

In this condition, the person suffering has to face many complications, as due to a low amount of *loma* on the body, there is also a low amount of *loma-koopa* on the body, which results in a blockage/or a low number of outlets for *sweda*.

Thus, creating a complication, as this means that due to a reduced amount of *loma-koopa*, the *sweda* and, consequently, the *mala-bhaga* that excretes out of the body through this pathway are unable to excrete

properly, which can lead to various complications in the body.

Other than that, these *loma* are responsible for the perception of temperature on the body or any other sudden touch, thus reducing the sensing ability of *sparshendriya* as it is also a part of *twak*.

These hairs are also responsible for preventing the body from various foreign microorganisms and pollutants, thereby playing a crucial role in protecting the body; however, their absence marks a significant loss of protection, which can lead to multiple infections. These factors, along with the fact that this disorder is non-treatable, become the reason for its inclusion in this list of *Asthanindita.*

This condition can be compared with Alopecia universalis (AU)

Alopecia universalis(AU) is a condition characterised by the complete loss of hair on the scalp and body.

It is an advanced stage of alopecia areata, a condition that causes round patches of hair loss.

Although the exact cause of AU is unknown, it is believed to be an autoimmune condition in which the person's immune system mistakenly attacks the hair follicles.



5. *Atikrishna and Ati Gaura*

Sushruta Acharya has described the formation of *Garbh varna* from the combination of different *panchamahabhuta.*

Tejo mahabhuta + Prithvi mahabhuta = Krishna varna

Tejo mahabhuta + Ap mahabhuta = Gaura varna

Tejo mahabhuta + Prithvi mahabhuta + Akasha mahabhuta = Krishana shyava

Tejo mahabhuta + Jala mahabhuta + Akasha mahabhuta = Gaura shyava

Therefore, any changes in this permutation and combination of *mahabhuta* can cause changes in *garbhavarna,* which indicates the formation of congenital, inherited, or hormonal pigmentation disorders.

In *Charaka Samhita, the Indriyasthana prakrita (normal) and vaikrita (abnormal) varna (complexion) are* mentioned.

Krishna varna and *Gaura varna(avadhata)* are said to be normal complexion (*prakrita varna*), but

Shyava and *shukla varna* are abnormal complexion (*vaikrita varna*)

Therefore, any change in this permutation and combination of *Mahabhuta* can cause changes in *garbhavarna,* which indicates the formation of congenital, inherited, and hormonal pigmentation disorders.

Hyperpigmentation and hypopigmentation occur due to an imbalance in melanin production by melanocytes. Overactive melanocytes and underactive melanocytes result in an imbalance of dark or light skin, which can cause cosmetic disfiguration and lead to psychological distress.

Hyperpigmentation is seen in Addison's disease, Cushing's syndrome, hyperthyroidism, and

Hypopigmentation seen in Vitiligo, Albinism can be considered as nindita, as it causes great mental stress in patients of ace society.

Albinism

It is a group of heritable conditions associated with decreased or absent melanin in ectoderm-derived tissues (most notably the skin, hair, and eyes), resulting in a characteristic decrease in skin pigmentation.

As the name implies, the most dramatic effects are in the eyes and skin. These are due to isolated genetic mutations.



Vitiligo

It is a chronic autoimmune disorder that causes patches of skin to lose pigment or colour. This happens when melanocytes, skin cells that make pigment, are attacked and destroyed, causing the skin to turn a milky-white colour.



6. Atisthoulya and Karshya

Amongst these, the too obese and too lean physical appearances are considered the most undesirable ones.

Atisthoulya

Obesity is referred to in Ayurveda as *atisthoulya*. *Acharya Charaka, often referred to as the Indian Hippocrates, described obesity as a disease of the fat tissues (medoroga) that leads to excessive fat accumulation*. It is defined as an excessive and abnormal increase of *meda dhatu* along with *mamsa dhatu,* resulting in the pendulous appearance of buttocks, belly and breasts. Hence, the excess weight is due to both retention of water and storage of fatty tissue. An excessive accumulation of adipose tissue characterize obesity.

The excessively obese have eight inherent defects in them: reduced life span, constricted or limited movement (hampered due to loose, tender and heavy fats), reduced sexual act or impotence (due to small quantity of semen produced and obstruction of the channel of semen by *meda dhatu*), debility (due to *dhatu* imbalance), emit bad smell (due to the inherent nature of fatty tissues as well as excessive sweating), profuse sweating (since *meda dhatu* and *kapha* are vitiated), and excessive hunger and thirst (due to excessive digestive *agni* and *vayu* in the body).

Obesity is caused due to over-nourishment as a consequence of the intake of a heavy, sweet, cold and fatty diet, lack of physical exercise, abstinence from sexual activity, sleeping during the daytime, always being cheerful, lack of mental activities, and hereditary/genetic defects. These consequences may lead to an excess of fat and consequent depletion of *dhatu*.

Aetiology of obesity according to modern science

Several factors are responsible for obesity, as

1. Sedentary lifestyle
2. Stress or psychological cause
3. Dietary intake
4. Age, sex and race
5. Socioeconomic status
6. Drug-induced

Consequences of obesity

Serious diseases are the outcome of excessive obesity due to obstruction of body channels by the *meda dhatu*. This reflects the ancient wisdom of Ayurveda, which is comparable to the impact of obesity on health from a biomedical science perspective.

The National Institute of Health, USA, has issued an alert labelling obesity a 'Killer disease' due to its health-related consequences, such as coronary diseases, diabetes mellitus, hypertension, hyperlipidemia, gallbladder disorders, cancer of the colon, pancreas,

breast, uterus, osteoarthritis, and menstrual irregularities in females.



Karshya

The excessively lean person often struggles to tolerate physical exercise, excessive food intake, hunger, thirst, certain diseases, or certain medications. They also cannot tolerate excessive cold, heat, or sexual activity. Such a person is associated with splenic diseases, cough, wasting, dyspnoea, *Gulma*(abdominal tumour), piles and disorders of *Grahani.* The excessively lean person has dry buttocks, abdomen, and neck; the prominent vascular network is mainly composed of skin and bone with thickened nodes.

A lean person is skinny. Several reasons, including malnutrition and starvation, can cause thinness. This condition may be closely linked to pituitary cachexia. It is a wasting syndrome characterized by weight loss, muscle atrophy, fatigue, weakness, and loss of appetite, even when a person is not trying to lose weight. Additionally, these individuals have a congenital tendency that allows them to remain lean and thin throughout their lives, from birth. It is called Simmons's disease. It is a form of hypopituitarism, which leads to atrophy of various organs, including the spleen, heart, kidneys, liver, thyroid, adrenal glands, and gonads. It results in emaciation and death if left untreated.

Both these undesirable types of people (too obese and too lean) always suffer from some disease or other and need to be constantly managed by bulk-reducing and bulk-promoting therapies, respectively. Of the two, being lean is less harmful than being obese, and the physical and mental suffering in the case of an obese person is far greater in comparison to a lean person.



CONCLUSION

Charaka has laid down the foundation of genetic/hereditary and endocrine disorders in relation to four pairs of opposing and undesirable physical characteristics- height (too tall, too short), body hair (too hairy, hairless), complexion (too dark, too light), and body mass (too obese, too lean). Among these, *atisthula* (morbid obesity) is the most undesirable characteristic because it is associated with several life-threatening complications, including diabetes, HT, CAD, joint disorders, etc.

In the present era, a sedentary lifestyle contributes to numerous diseases and can be categorized under *Astha Nindita Purusha*, characterized by its specific features. They were referred to as condemned people by the Acharyas, but they were not viewed as inferior or biased against society, unlike in the present era. On the other hand, these diseases cannot be included under *Nindita Purusha* because there is currently an availability of symptomatic treatment for these diseases.

REFERENCES

1. Charak samhita, commentary of Chakrapani Datta, by Dr P.V.Tewari, Sutra sthana chapter 21, sloka 3 Chaukhambha Vishwabharati.
2. Charak samhita of Agnivesh, Volume 1 _ edited with “Vaidhyamanorama” hindi commentary along with special deliberation, etc. By Acharya Vidyadhara Shukla and Prof. Ravi Dutt Tripathi, published by

Chaukhambha Sanskrit Pratishta. Vimana sthana page no. 652
3. Sushruta samhita of Mahashi Sushruta _ volume 1 _edited with 'Sushrutvimarshini' etc._ By Dr. Anantram Sharma_ Foreward by _ Acharya Priyavrata Sharma_ published by Chaukhmbha prakashana Nidana sthana thirteen-page no 554
4. An approach to hypopigmentation - Jeremy P Hill, Jonathan M Batchelor, BMJ 2017
5. Figure:- Images in clinical medicine Pituitary gigantism, list of authors. Robert F. Gagel, Ian E.
6. Figure: Obesity from Getty Images.
7. Figure: emaciation from the Wellcome Collection website

Source of Support: Nil
Conflict of Interest: None Declared

How to cite this URL: Dr.Rinkal Nakawala: A practical approach of asthanindita purush according to the present era. International Ayurvedic Medical Journal {online} 2025 {cited December 2025}

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Biomedical Waste Management in Pathology laboratory - A Review

By Dr.Rinkal N.Nakawala (MD),
associate professor in Roganidana (Pathology) department, Shri O.H.Nazar Ayruveda college, Surat (Gujarat) India.

Abstract - With the advancement of medical field, the amount of biomedical waste produced every day is growing. Segregation, storage, processing, transportation, and disposal of biomedical waste are all common practices undertaken as part of health care waste management. If biomedical waste management is done correctly, many of the problems can be avoided. Medical waste management necessitates dedication from healthcare providers at all levels. The risk and value of their "contribution" are feared in a system run by reckless and untrained personnel. Also trained medical professionals need to be taught about the rules for disposing of biomedical waste. To achieve better results, we must raise the level of training and education in biomedical waste and environmentally sustainable health care as quickly as possible, while adhering to all applicable rules and regulations.

Keywords - Bio-Medical Waste (BMW), source of BMW

Introduction

Proper management of biomedical waste is a statutory requirement as per Biomedical waste (management and handling) rules 1998, under section 6,8 and 25 of the environment protection act, 1986, of the Government of India. These regulations apply to anyone who creates, collects, receives, stores, transports, treats, disposes of or handles biomedical waste in any way. Growing medical advances and new hospital facilities have increased the amount of waste generated by healthcare facilities. It poses a health risk to healthcare staff, the general public, and the local flora and fauna. There is a need for education about the dangers of inappropriate waste disposal. Apathy against the idea of waste management is a significant impediment to waste disposal. The government of India has stressed that it shall be the duty of the occupier of an institution generating biomedical waste to ensure that such waste is handled without any adverse effect ti human health and environment.

1. Definition of Bio Medical Waste
As per Gazette Notification, 'Bio Medical Waste' means any waste, which is generated during the diagnosis, treatment or immunization of human being or animals or in research activities pertaining thereto.

2. Classification of Biomedical Wastes
Medical waste is divided into eight categories by the World Health Organization (WHO), including General waste, Pathological, Radioactive, Chemical, Infectious to potentially infectious waste, sharps, pharmaceuticals and pressurized containers.
Medical waste is divided into eight categories by the WHO, including General waste, Pathological, Radioactive, Chemical, Infectious to potentially infectious waste, sharps, pharmaceuticals, and pressurized containers.



3. Biomedical waste categories and their segregation, collection, treatment , processing and disposal options

Category	**Types of Waste**	**Type of Bag or container to be used**	**Treatment and Disposal options**
1	**2**	**3**	**4**
Yellow	(a) **Human Anatomical Waste**: Human tissues, organs, body parts and fetus below the viability period (as per the MTP Act 1971, amended from time to time)	Yellow coloured non chlorinated plastic bags	Incineration or Plasma Pyrolysisor deep burial
	(b) **Solid Waste:** Items contaminated with blood, body fluids like dressings, plaster casts, cotton swabs and bags containing residual or discarded blood and its components		Incineration or plasma pyrolysis or deep burial
	(c) **Expired of Discarded Medicines**: Pharmaceutical waste like antibiotics, cytotoxic drugs		Returned back to the manufacturer or supplier for incineration
	(d) **Microbiology, Biotechnology and other clinical laboratory waste**: Blood bags, Lab cultures, stocks or specimens of microorganisms	Autoclave safe plastic bags or containers	Pre-treat to sterilize with non chlorinated chemicals on - site as per National AIDS control organization or WHO guildelines thereafter for Incineration
	(e) **Chemical liquid waste** : Used or discarded disinfectants, discarded formalin, infected secretions, aspirated body fluids, liquid from laboratories and floor washing,cleaning	Separate collection system leading to effluent treatment system	After resource recovery, the chemical liquid waste shall be pre-treated before mixing with other waste water.
Red	**Contaminated waste (Recyclable)** vaccutainers with their needles cut and gloves, syringes (without needles and fixed needle syringes), urine bags, catheters	Red coloured non chlorinated plastic bags or containers	Autoclaving or micro-waving
White (Translucent)	**Waste sharps including Metals:** Needles, syringes with fixed needle tip cutter or burner, scalpels, blades, or any other contaminated sharp object that may cause puncture and cuts	Puncture proof, leak proof, tamper proof containers	Autoclaving or dry heat sterilization
Blue	**Glassware**: Broken or discarded and contaminated glass	Cardboard boxes with blue coloured marking	Disinfection or autoclaving
	Metalic body implants	Cardboard boxes with blue coloured marking	

4. Management of Biomedical Waste in Pathology Laboratory

4.1 Management of Biomedical Waste in Biochemistry Laboratory

The three major kinds of Biomedical wastes generated in a Biochemistry Laboratory include the post analysis plasma/serum/blood which were sent for analysis, the containers used for sending such samples and the liquid wastes generated while performing tests/cleaning of the test tubes.

Disposal of Blood/Plasma/Sera

After the test have been conducted, results validated and dispatched, all the excess sample should be centrally collected in a large container. It is autoclaved, and the resultant material put in a burial pit.

Disposal of containers

After all the blood sample have been collected, the empty containers are put in a tune containing 10 lit of fresh hypochlorite solution (10%). After a contact period of 1 hour, the containers are segregated as reusable ones and disposable ones. Reusable containers (like penicillin vials) are washed with a detergent and reused. Disposable items are autoclaved and disposed.

Disposal of liquid waste

It has to be disinfected by chemical treatment before discharging in drain.

Disposal of Radioactive wastes

Radio-active wastes is generated in laboratories where radio immuno assay (RIA) is routinely being done. These have been profound effect into the environment and have to be treated properly. It is recommended that all the radioactive waste be centrally collected and stored in a large chamber for at least ten half-lives of the radioactive substances concerned. This can then be released into the open environment. In this regards, all RIA laboratories have to follow the guidelines laid down by the Radiation Protection Committee.

4.2 Management of Biomedical Waste from Microbiology Laboratory

All the culture plates, drug sensitivity plates, culture material with bacterial growth in liquid or solid media tubes, bottles and plates and specimens from patients should be collected in stainless steel trays which are directly loaded into autoclave.
Microscopic slides used in microbiology are also autoclaved in disposal autoclave before discarding as glass sharps and sent for recycling of glass.

4.3 Management of Biomedical Waste Generated in Haematology Laboratory

The vacutainers containing blood are treated for disinfection with hypochlorite. Blood smear slides covered with oil should be boiled with detergent and washed and reused in clinical pathology and blood bank. ESR should be performed in disposable polystyrene westergreen tube as far as possible and discarded in red polythene bags which are sent for incineration. Prickers and capillaries used for bleeding time and clotting time should be discarded in blue colored puncture proof containers and disposed off as sharp as mentioned in sample collection section.

4.4 Management of Biomedical Waste Generated at clinical pathology laboratory

Urine and stool should be flushed in toilet and the containers decontaminated with hypochlorite before washing for reuse. The polypropylene tubes used for centrifuge urine samples are decontaminated with hypochlorite before washing and reusing.

4.5 Management of Biochemical Waste in the Blood Bank

The discarded units from the blood bank are disposed by autoclaving them. After autoclaving, the blood should be sent for manure making and plastic material should be treated.

Lancets or prickers used for rapid blood group screens and the needles of donor are discarded in blue capped puncture proof containers.

After blood collection, sample remaining in the tubing is aliquoted in plain and citrate tubes for infectious disease screening and cross match.

The needles containing portion cut and added to sharp disposal containers. All sharps are collected centrally, autoclaved and disposed in secured needle pit.

The glass tubes and plastic toothpicks for mixing blood and reagents for blood grouping are discarded in through containing hypochlorite. The tooth picks are subsequently discarded as plastic waste while glass slides are washed and reused.

The blood donor sets, after removing the needles is disposed by autoclaving (incineration produces toxic fumes and hence not recommended).

5. Handling and Transport

Biomedical wastes must be processed and transported in such a way that they pose no risk to human or environmental health. Immediately after the waste is produced, it must be separated into containers or bags that are colour coded. Handling these wastes requires minimizing the risk of needle prick injury and infection. Biomedical waste should not be combined with any other form of waste. The following factors must be considered when transporting BMWs.
1. Separate cabins should be provided for the vehicle carrier and the biomedical waste containers.
2. Checking the leak-proof consistency of the waste cabin floor.
3. The waste cabin should be designed in such a way that it is easy to clean with disinfectants and that storing waste containers in tiers is simple.
4. Minimize water stagnation; the cabin's inner surface should be sufficiently smooth.
5. Enough rear openings and/or sides should be provided for the fast loading and unloading of waste containers.
6. The BMW symbol must be shown on the vehicle.

6.Technologies for waste treatment

Some of the technologies, which are being promoted in India are:

1. Autoclave
An autoclave is an instrument, which uses steam at high temperature to kill all microbes.

2. Microwave
A microwave system uses high frequency waves. These waves cause the molecules within the waste material to vibrate. This generates heat within the matter itself. The heat generated is high enough to ensure that all microbes are killed.

3. Chemical Disinfection
In this form of disinfection, a chemical is used to destroy the pathogens. Not all medical waste should be treated in this way. Only plastic, rubber and metals should be disinfected.
Chemical - Disinfection
a. Antiseptics - chemical that kill microorganisms on living skin or mucous membranes.
b. Bactericidal - chemical agents capable of killing bacteria. Similarly agents that are virucidal, fungicidal or sporicidal are agents capable of killing these organisms.
c. Bacteriostatic - Chemical agents that inhibit the growth of bacteria but do not necessarily kill them.

4. Incineration
It is the process of burning the solids at very high temperature in a furnace. The temperature in these furnaces is usually high enough ti burn even the metals.

Waste Disposal Practice for smaller Laboratory Setups

The smaller laboratory setups which are catering to patient load of less than 1000 per month, need no authorization for biomedical waste but they are supposed to follow the guidelines of biomedical waste rules.
All the needle sharp should be mutilated and handed over to common central biomedical waste management facility. In absence of common facility, the sharp could be discarded in metal container which can be disinfected in oven/autoclave and sent to secured landfill.
The blood/body fluids soaked cotton/gauze could be discarded in coloured polythene bag, autoclaved and then the material sent as general non infectious waste.
Carefully decant infectious waste like blood and body fluid samples into a metal kettle and then disinfect the containers containing small amount of liquid waste by immersion in 1 % hypochlorite before washing. The kettles containing blood/body fluids could be autoclaved before discarding the waste as non infectious material. The gloves used in the laboratory could also be disinfected with hypochlorite before mutilating and disposal.
Wash histopathology specimens with water to remove formalin and then send them in yellow polythene bags to central common facility for incineration. The most important infectious material in bacteriology waste in form of cultures/damples and needs to be autoclaved before washing/disposal.

Conclusion

1. Safe and effective management of waste is not only a legal necessity but a social responsibility. Lack of concern, motivation, awareness and cost factor are some of the problems faced in the proper hospital waste management. Clearly there is a need for education as to the hazards associated with improper waste material.
2. Lack of apathy to the concept of waste management is a major stymie to the practice of waste disposal. An effective communication strategy is imperative keeping in view the low awareness level among different category of staff in the health care establishments regarding biomedical waste management.
3. Proper collection and segregation of biomedical waste is important. At the same time, the quantity of waste generated is equally important. A lesser amount of biomedical waste means a lesser burden on waste disposal work, cost-saving and a more efficient waste disposal system. Hence, health care providers always try to reduce the waste generation in day-to-day work in the clinic or at the hospital.

References

1.Shrishti, G.(2010), Biomedical Waste Management in India- A Review: Journal of Advanced Medical and dental science research, 5(4), 99-102
2. Kumarasamy M. & Jeevaratnam, V. (2017). Review on management of hospital waste in efficient manner 3(7), 55-59
3. Lakshami Bhaskar. M. & N. Nagavardhini, M. Malavika & Satyanarayana (2020). Biomedical waste management practices in a tertiary care teaching hospital in accordance with BMW rules 2016 ,291-295
4. Manika & Arpita (2015) Biomedical waste management need of today a review, 2417-2421
5. Mishra K. Sharma, Sarita and Ayub (2016). A study : Biomedical waste management in india. IOSR journal of environment science, 10(5), 64-67
6. Singh H. Rehman & Bumb S.S. (2014) management of biomedical waste: A review. Int dent Med res.1(1), 14-20
7. Arshad N. Nayyar & Mahmood (2011) Hospital Waste Disposal: 3 (8) 1412-1419



IAMJ

INTERNATIONAL AYURVEDIC MEDICAL JOURNAL

CC BY NC SA

doi CrossMark

……. Article ISSN: 2320-5091 Impact Factor: 6.719

COMPREHENSIVE STUDY OF NAKHA PARIKSHA IN VARIOUS DISEASES THROUGH AYURVEDIC PERSPECTIVE

Dr. Rinkal N. Nakawala

MD (Roganidana), associate professor in Shree O.H.Nazar Ayurveda College, Surat (Gujarat), India.

Corresponding Author: rnnakawala@gmail.com

https://doi.org/10.46607/iamj14022026

(Published Online: February 2026)

Open Access

© International Ayurvedic Medical Journal, India 2026

Article Received: 15/01/2026 - **Peer Reviewed:** 31/01/2026 - **Accepted for Publication:** 10/02/2026.

Check for updates

ABSTRACT

Nail conditions are not only aesthetic concerns; nail changes may be due to underlying systemic disease or infection. Without timely treatment, nail diseases can continue to worsen, significantly impairing daily activities and reducing quality of life. Examination of the nails is essential at every medical visit and may uncover significant findings.

Nakha pariksha, or Ayurvedic nail examination, is a vital part of the diagnostic approach. Nails are considered an *upadhatu* (sub tissue) of Asthi dhatu (bone tissue) and provide insights into bone health, digestion, and overall vitality. Any abnormalities in the nails may signal dosha imbalances (*vata, pitta, and kapha) or indicate specific health conditions, such as* malnutrition or toxins *(Ama*).

We find various references to nakha vikriti across multiple diseases in the Samhitas, yet many more conditions are described in modern science that are not analysed from an ayurvedic perspective. Therefore, with the help of nakha, we will gain knowledge of dosha and dushya vikriti in the diseases concerned.

Keywords: *Nakha, Pariksha, Diagnosis, Roga and Rogi*

INTRODUCTION

The physician's prime duty is to make a proper diagnosis of a disease when consulted by a patient for their ailment or disorder. Without proper diagnosis, there cannot be a treatment or alleviation of suffering. And for diagnosing a disease, *Rogi pareeksha* is

essential. In Ayurveda, V*agbhatta* has described three types of *Rogi-pareeksha*:

रोगोपहतशरीरज्ञानोपायमाह----------ll

दर्शनस्पर्शनप्रश्नैः परीक्षेत च रोगिणम्।

(A.H.S.1)

Nakha pariksha comes under these three types of *pariksha vidhi*. In medical practice, examination of the *nakha* is very important for diagnosing various diseases. In Ayurveda, the characteristics of isthanakha (good nails), as well as its arishtha lakshanas, are described in detail—some clinical features of the *nakha* aid in diagnosing the disease. We find various references to nakha, which are indicators of dusta srotas, vitiated dosa, and the clinical features of multiple diseases in Ayurvedic texts. It is also related to *asthidhatu vriddhi* and *kshaya*. In the Sushruta Samhita, some nakha disorders, such as kshudraroga, are described, including chippa and kunakha. Abnormalities of the nail may serve as important clues to cutaneous and systemic disease. They may provide the astute clinician with information about the disease or toxic exposures that occurred several months earlier. Nail changes can be telltale signs of a patient's occupation, systemic disease, vascular and neurogenic disorders, nutritional status, and dermatological affections.

MATERIALS AND METHODS

Literature such as research papers, journals, Ayurvedic and modern texts were referred to. A retrospective study of randomly selected patients was conducted, and approximately 180 patients, regardless of age, sex, marital status, or financial status, were included. A special-case paraprofessional form was prepared, including nail examination, to cover most aspects. The nails were examined in good natural light.

For considerable information on the diagnostic value, the following routine observation was carried out in every case.

1. *Darshana pariksha* (Inspection): Nails of both limbs were considered, and the following observations were made -

   Inspection of the *akara* (shape)

   Inspection of the *varna* (colour)

   Inspection of any deformity and structure

   The latter study includes the inspection of the nail-fold and nail plate

2. *Sparshana pariksha* (Palpation)

   Nails were palpated with gentle pressure to find out whether they are soft or hard, smooth or rough, and

   Painful or not

3. *Prasana pariksha* (Interrogation)

   For investigating the signs and symptoms of the nails, the question regarding the following points

   We were asked about the patients-

   Growth of nail - slow or fast

   Jirna vyadhis - *Pandu, swasa* etc.

   To clarify the characteristic signs and symptoms of the nails, photographs of the nails of selected patients were taken.

DISCUSSION

Discussion based on the patients suffering from various diseases with nail abnormalities:

1) This picture shows *nila varna nakha* in patients with Raynaud's disease. It is characterised by episodic digital ischemia and manifested clinically by the sequential development of digital cyanosis of the fingers. There is gangrene of the third and fourth distal fingers. This should be considered as *Arishtha lakshana* as described in *Charaka.*

doi:10.46607/iamj14022026 | IAMJ February 2026 | www.iamj.in



He whose nails are blue like a ripe fruit of *jambu* and look without muscles and blood - considered a fatal sign.

2) This picture shows yellowish discolouration of the fingernails in a 44-year-old patient who was suffering from Jaundice.

In this *vyadhi*, *pitta vimargagamana* takes place, which spreads in the whole body, and so nails, eyes, skin, etc., become yellowish and also due to the excessive circulation of bile pigments in the blood.



3) This picture shows a 36-year-old woman who noted a blackish appearance at the base of all 10 fingers.

6 weeks after starting AZT (Azidothymidine) for the treatment of AIDS. The same discolouration appeared in toenails 4 weeks later.

This discolouration results from the drug stimulating matrix melanocytes. In Ayurveda, black colored nails are primarily associated with an imbalance of the *vata* and *pitta doshas* and issues with a bone tissue. According to Sushruta, black, rough and rugged nails indicate a predominance of aggravated *vata* and *pitta doshas*. Another factor, defective metabolism (*agnimandya),* can also cause blackish discolouration of the *nakha*.



4) This picture shows a 50-year-old man who had a "nail-infection" on the right hand and right foot, noted five years previously. The nail fold is erythematous and edematous, with early abscess formation and was very painful. Staphylococcus aureus was isolated from a dislodged dislodged culture. Such infection may begin in the base of the nail in persons who frequently have their hands wet, and this can progress to paronychia. As per Ayurveda, it can be compared with *Kunakha* (Nail infection). This condition is often described as a *pita*-predominant imbalance affecting the nail t tissue (*asthi dhatu*) and blood (*rakta*). It can cause discolouration, pain and inflammation of the nail bed.

doi:10.46607/iamj14022026 | IAMJ February 2026 | www.iamj.in



5) This picture shows a -36- year-old patient who has noted a greenish-yellow discolouration of fingernails

for 3 years. Studies suggest that a Pseudomonas infection causes this discolouration.

Pseudomonas aeruginosa is an obligatory aerobic, gram-negative bacterium. Green nail syndrome

(GNS), also known as chloronychia, is a rare nail infection that causes greenish discolouration of

the nail plate. The discolouration can range from blue green to dark green to bluish-grey and

It appears underneath the nail so that it won't wash off. GNS is caused by the bacteria Pseudomonas

aeruginosa, which thrives in wet environments like sinks, bath sponges and contact lens solutions.

Ayurvedic understanding of green nails - according to Sushruta, nail infections like *kunakha* are

Often a *tridoshaja* condition with a dominance of *pitta* and *kapha*. Imbalanced *pita* is often

associated with infection, inflammation and toxin accumulation (*ama*), while an excess of *kapha*

creates a dump, cold environment where bacteria thrive.



6) In studied cases, spoon-shaped *nakha* are found in patients with *Pandu* (Iron deficiency

anaemia). spoon-like depression on the fingernails had been noted for three months by this

30- year-old patient. Study revealed the problem to be koilonychia caused by her Iron deficiency

Anemia. She looked pale, and her haemoglobin was 6.0 g/dL.

Based on Ayurvedic principles, koilonychia or spoon nails is understood as a symptom of an underlying imbalance rather than a standalone disease. The condition, which can feature flat or concave-shaped nails, points to issues with the *dhatus* (body tissues), specifically the *Rakta* (blood) and *Asthi* (bone) tissues. The nails become ruksha, khara, panduvarna, and concave because pandu vyadhi rakta kshaya takes place.



7) Clubbing of fingernails found in patients who were suffering from *Hridroga* and *Swasa vyadhi.*

This picture shows clubbing of fingernails in a patient with congenital heart disease. As per

In Ayurveda, finger clubbing is understood as a symptom indicating a deficiency of *Prana* (life force)

and low oxygenation of the body's peripheral tissues. Clubbed nails are seen as a warning sign of

deeper, systemic health issues, particularly those affecting the heart and lungs.





8) This picture shows thickened and deformed nails in a 61-year-old patient with diabetes.

The cause is an insult to the nail bed, resulting in irregular nail growth. This suggests

Premonitory sign of *madhumeha* as mentioned by Vaghbhatta.

These premonitory symptoms are a significant increase in nails, etc.

9) This picture shows a 30-year-old patient noted with whitish discolouration of fingernails who was

suffering from *Pandu*. This nail change occurs due to vyadhi rakta kshaya.

This suggests the cause of the disease.



This sutra states that patients with *Pandu* experience whitish discolouration of the nails, teeth, eyes, and other parts of the body.

should be considered as a fatal sign.

10) This picture shows uniformly dystrophic nails with nailfold involvement in a 48- year-old

doi:10.46607/iamj14022026 | IAMJ February 2026 | www.iamj.in

patient with psoriasis for long duration. As *kitibha kushtha* is a *tridoshaja vyadhi,* this blackish discolouration due to vata prakopa and dystrophic nails suggests its dhatugatawastha. When *kushtha* progresses to affect the deeper tissues, particularly the *asthi dhatu,* it manifests the symptoms in the nails.



11) Biting nails are found in patients with maniac (mental depression). A 50-year-old retired weaver had delusions of minute red colored insects inhabiting his fingernails, eyebrow and scalp. In an effort to get rid of them, he plucked the hair on the eyebrows and scalped and continued -ously rubbed his fingernails with teeth, resulting in gross dystrophic change in fingernails. This should be considered as *Arishtha suchaka lakshana* as described in *Asthangasangraha.*



In this rare psycho-cutaneous disorder, patients have an irresistible desire to rub, pick or tear nails, resulting in gradual destruction and mutilation, which suggests depressive disorder.

Ayurvedic diagnosis considers how the mind affects physical health. For instance, a specific nail issue linked to *doshic* imbalance, like nail-biting from excess *vata,* are connected to mental-emotional states like anxiety.

CONCLUSION

1) Abnormalities of the *nakha* serve as important clues to various diseases and provide astute clinical information
2) The following *doshas* are responsible for producing some specific signs of the *nakha*-

Dosha	Specific signs of nakha
Vata	Khar, krusnavarna and irregular in shape
Pitta	Mrudu, pitta varna and thin
Kapha	Suklavarna and sothyukta

3) *Rukshta* and *kharata* (dry and roughness) of the *nakha* are mainly due to *krimis* and poor nutrition.

4) In *Pandu,* we get a characteristic sign of a spoon-shaped nail.

5) The *nakha* of those with osteoporosis are significantly softer thanthosee without it.

doi:10.46607/iamj14022026 | IAMJ February 2026 | www.iamj.in

6) When a*sthivaha, udakavaha, rasavaha, raktavaha, medovaha* and *annavaha* srotas get affected in a diseased condition, it also affects the nakha and produces *vikriti* in the *nakha.*

7) *Nilvarna* of the nail in some conditions suggest *asadhyatwa* of the disease

8) Nail biting is the result of *manovaha srotas dusti* due to anxiety and nervousness.

9) *Vivarnata* (discolouration) of nakha in immunocompromised status and in some malignancies is not pathognomic of those diseases, but it is due to antiretroviral and anticancer therapy, respectively.

10) Clubbing of the *nakha* is an essential sign in *pranavaha srotas vyadhis* of long duration.

Consequently, no physical examination is complete without a study of *nakha*. However, the *nakha* remains an understudied, underutilised, yet quite accessible structure that lends itself to examination and evaluation!

REFERENCES

1. Astangsangraha by Shrimad Vridhha Vagbhatta with "Induvyakhya". Editor Vd. Anand Damodara Athavale. Edition 1st Set., 1980.
2. Baran R., Dawber R, Heneke E, Tosti A: A text atlas of nail disorders, St. Louis, Mosby, 1996.
3. The Charaka Samhita Vol I and II with Vidyotini Hindi commentary by Pt. Kashinath Shastri and Dr Gorakhnath Chaturvedi. Published by Chaukhambha Bharati Academy, 19th edition 19th, 1993.
4. Chamberlin's symptoms and signs in clinical medicine, 12th edition by Colinglvie
5. Colour atlas and synopsis of clinical dermatology (common and serious disease), 4th edition
   By Thomas B. Fitzpatrick, Richard Allen Johnson, Klaus Wolff, Dick Suurmond
6. Diabetic foot: A clinical atlas by Sharad Pendsey, Marvin E. Levin, Alethea V M Foster and Michael E. Edmonds
7. Daniel CR, Sams W.M. Scher R K: Nails in systemic disease
8. Dermatology, second edition by Samuel L. Moschella and Harry J. Horley
9. Fitzpatrick's Dermatology in General Medicine, 5th edition. Edited by Irwin M. Freeberg, Arthur Z. Eisen, Klaus Wolff, Lowell A. Goldsmith
10. Harrison's principles of internal medicine (16th edition) by T.R. Harrison and co. Publisher-McGraw-Hill Book Company
11. Hutchison's Clinical Methods, 20th edition by Michael Swash
12. IADVL textbook and atlas of dermatology (second edition), Editor-in-Chief R.G. Valia and Ameet R. Valig.
13. Madhava nidana by Shri Madhavakara with Madhukosha Sanskrit commentary by Shri. Vijayaraksita, revised and edited by Prof. Yadunandan Upadhyaya and published by Chaukhambha Publishers.
14. Medicine for Students by Aspi F. Golwalla (20th edition)
15. Practice of dermatology 9th edition by P.N.Behl, A. Aggarwal
16. Physical diagnosis, A textbook of symptoms and signs, Ninth edition by (late) Rustom J Vakil and Aspi F. Golwala
17. Roga Vinischaya (Ayurvedic Diagnostics Principles) by Dr Shivacharan Dhyani (second edition)
18. ROOK/WILKINSON textbook of dermatology, sixth edition, in four volumes, edited by R.H. Champion, J.L. Burton, D.A. Burns, and S.M. Breathnach
19. Rook's textbook of dermatology, 7th edition. Edited by Tony burns, neil cox, christopher griffiths
20. The Sushruta Samhitas, Vol. I and II by Dr Bhaskar Govind Ghanekar, published by Motilal Banarasidas Publications, Varanasi.
21. Textbook of Clinical Dermatology, Second Edition by Virendra N. Sehgal and Sanjiv Jain.

Source of Support: Nil
Conflict of Interest: None Declared

How to cite this URL: Rinkal N. Nakawala: Comprehensive study of nakha pariksha in various diseases through ayurvedic perspective. International Ayurvedic Medical Journal {online} 2026 {cited February 2026} Available from: HYPERLINK "http://www.iamj.in/posts/images/upload/_.pdf" http://www.iamj.in/posts/images/upload/_.pdf

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Artificial Intelligence in histopathology : A comprehensive review

Dr.Rinkal N. Nakawala
Associate professor in Roganidana(Pathology) department, Shree O.H.Nazar Ayurveda college, Surat (Gujarat), India.

Abstract

Histopathology is a cornerstone of modern medicine, enabling the diagnosis and understanding of various diseases at microscopic level. In recent years, Artificial Intelligence(AI) has emerged as a transformative tool in histopathology, offering new capabilities and efficiencies in disease detection, classification and prognosis. This article provides a comprehensive overview of the role of AI in histopathology, discussing its applications, challenges, and potential future directions. It covers the topics such as image analysis, machine learning, deep learning, and the ethical considerations surrounding AI implementation.

Keywords: Histopathology, Artificial intelligence, diagnosis, Image analysis

Introduction

Histopathology, the microscopic examination of tissue samples, has played a pivotal role in medicine for over a century. It allows pathologists to diagnose the diseases, assess the extent of diseases, and provide prognostic information by examining tissue morphology and cellular features. Traditionally, this process was heavily reliant on human expertise, which is subjective and time-consuming. The emergence of Artificial intelligence (AI) in histopathology has brought about a significant transformation in how we approach disease diagnosis and management. AI encompasses a broad range of techniques and technologies that enable computes to simulate human intelligence, learn from data, and perform tasks typically requiring human intelligence. In histopathology, AI algorithms can assist pathologists by analyzing vast amounts of histological images, aiding in diagnosis, predicting disease outcomes, and automating tedious tasks.

EM employs an electron beam instead of light to visualize cellular structures at a higher resolutions. It enables the examination of ultra structural details of cells, such as organelles, membranes , and cytoskeleton. EM is particularly useful for studying viral particles, mitochondria and other subcellular components. Cellular pathology is essential in diagnosing and classifying various types of cancers. Histological examination of tumor tissues allows pathologists to identify cancerous cells, assess the tumor's aggressiveness, and determine its stage and grade. This information is vital for treatment planning and predicting patient outcomes.

Literature Review

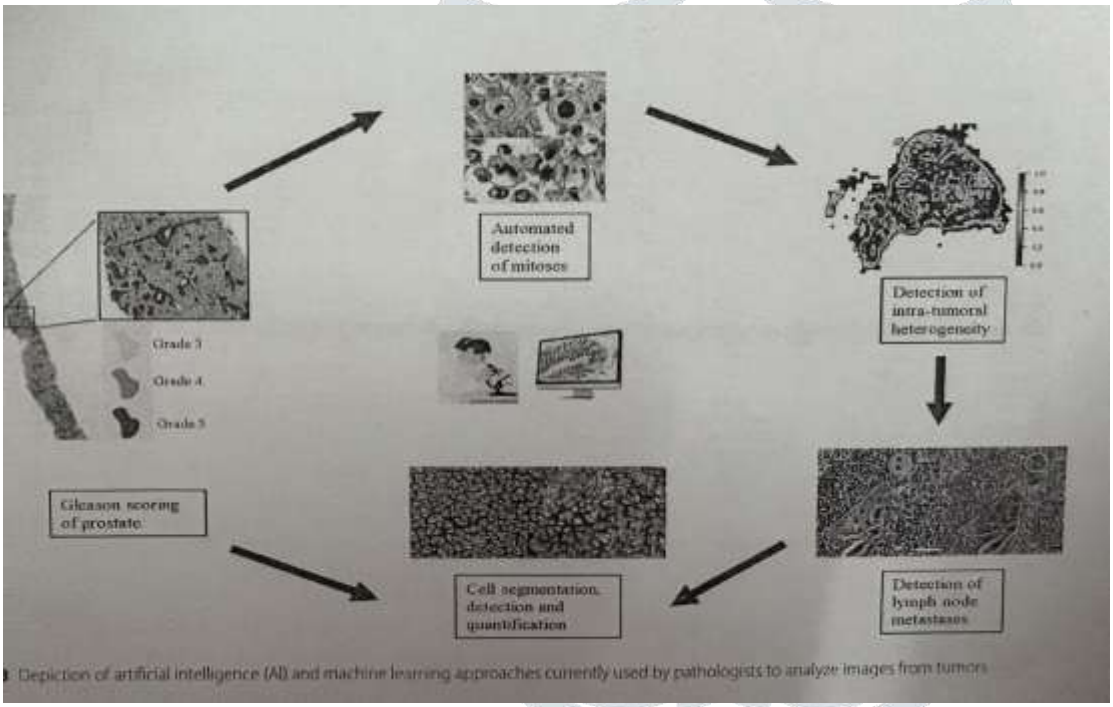
Histopathology relies on the examination of stained tissue sections under a microscope. AI algorithms can analyze these images to detect and classify tissue abnormalities. Image analysis involve preprocessing, segmentation, feature extraction, and classification. AI can significantly improve the accuracy and efficiency of this process. For example, AI can assist in identifying cancerous cells in breast tissue samples, quantifying the percentage of cancer involvement, and predicting the likelihood of metastasis. This has the potential to enhance early cancer detection and improve treatment outcome. Machine learning, a subset of AI, involves training models on historical data to make predictions or classification on new data. One notable application is the identification of skin lesions. Machine learning models can classify skin lesions as benign or malignant, aiding dermatologist in diagnosing skin cancers accurately. These models continuously improve their accuracy as they learn from more cases, making them valuable tools for pathologists. Deep learning, a sub-field of machine learning, has been a game -changer in histopathology. It revolves around artificial neural networks with multiple layers that can automatically learn relevant features from data.

Discussion

In histopathology, a Convolutional Neural Network (CNN) is a deep learning model used for analyzing tissue images from biopsies to detect, classify and segment diseases like cancer. CNNs automatically learn features from histopathological images to assist doctors by reducing diagnostic burden and improving accuracy, often by differentiating between benign and malignant tissue. They are crucial in applications like breast cancer detection, squamous cell carcinoma sub-typing, and mitotic cell detection, with techniques like transfer learning used to enhance performance on limited datasets.

AI algorithms require high-quality, annotated datasets for training. The availability of such data can be limited in some cases, hindering the development of accurate models. Deep learning models can be challenges to interpret, making it crucial to understand the basis for their predictions. Ensuring transparency and interpretability is essential for gaining trust in AI-based diagnostic tools.

AI can also be used to detect isolated tumour cells in lymph nodes suspicious for metastatic carcinoma, increasing sensitivity of detection in a time-efficient manner. Additionally, AI tools can help standardize scoring criteria in several tumors, such as Gleason score for prostatic cancers or breast cancer grading, where the morphological features are represented on a spectrum of continuous biological process. Another striking application of AI search tools is the content-based image retrieval (CBIR) which enables pathologists to search for images similar to the image-in-question from a repository of large histopathology database. This is especially important of large histopathology database. This is is especially important in guiding pathologists to diagnose rare and complex cases which they might occasionally come across in their clinical practice. The images retrieved from the database reflect similarities in associated histopathological features rather than mere image similarity. Hence, CBIR makes it easier to render a correct diagnosis in a timely fashion for seemingly difficult case.



Depiction of artificial intelligence (AI) and machine learning approaches currently used by pathologists to analyze images from tumors

Key Roles of AI in Histopathology

Diagnostic Enhancement : AI algorithms can identify subtle patterns and anomalies in histological images that may be missed by human observation, leading to improved diagnostic accuracy.

Prognosis and Treatment prediction : AI models analyze image-based prognostic and predictive biomarkers to provide insights into disease progression, patient outcomes, and potential treatment responses, supporting personalized care.

Workflow Automation: AI can automate routine and tedious image analysis tasks, reducing the workload on pathologists and allowing them to focus on more complex cases and nuanced interpretations.

Increased Objectivity and consistency: By removing inter-observer variability, AI helps standardize diagnostic practices, leading to more consistent and reproducible pathology reports across different institutions.

Discovery of Novel biomarkers: AI can uncover new morphological biomarker and potential therapeutic targets by extracting previously unexploited information from routine tissue image, paving the way for novel treatment approaches.

Integration of Multi-omics Data: Advanced AI models facilitate the integration of multi-omics data like gene expression with histological images, enabling more precise patient stratification and personalized treatment strategies.

Benefits of AI in histopathology

Improved Accuracy : Reduce diagnostic errors and inconsistencies in complex cases.
Enhanced Efficiency: Speeds up the diagnostic process, leading to quicker treatment decisions.
Personalized Medicine: Facilities tailored treatment plans based on individual patient data and predictive insights.
Reduced Workload: Frees up pathologist's time by automating repetitive tasks.
Standard care: Promotes consistent diagnostic quality across different clinical settings.

Challenges and Future Directions

Data limitations: Ensuring the availability of high-quality, standardized datasets for training AI models remains a significant challenge.
Explainability & Trust : The "black box" nature of some complex AI algorithms can hinder trust and adoption, as it is difficult to understand how they arrive at their conclusions.

Clinical Integration : Developing seamless integration of AI tools into existing clinical pathology workflow requires careful planning and regulatory considerations.

Regulatory Approval : Current regulatory framework are still evolving to support the adoption of AI-based diagnostic tools.

Conclusion

AI is a trans-formative force in histopathology, offering to improve accuracy, efficiency, and consistency in diagnosis and prognosis while also addressing the shortage of pathologists and paving the way for personalized medicine. Overcoming current challenges will be crucial to fully realizing AI's potential in cancer research and patient care. AI systems must seamlessly integrate into the existing clinical workflow. This may involve adapting laboratory procedures, training pathologists, and ensuring that AI recommendations are actionable and meaningful for patient care. In the future, AI may play a significant role in predictive pathology. By analyzing a patient's genetic and histopathological data. AI algorithms can predict disease risk, following for early interventions and personalized preventive strategies.

References

1. Sabewna B. "Multi CNN based automatic detection of mitotic nuclei in breast histopathological images."Comput Biol Med 158 (2023)
2. Mobadersany "Predictive cancer outcomes from histology and genomic using convolutional networks." Proc N A Sci 115 (2018)
3. Sohail "A multi-phase deep CNN based mitosis detection framework for breast cancer histopathological images." Sci. Rep 11 (2021)
4. David A. "Predicting cancer outcomes from histology and genomics using convolutional networks."
Proc Acad Sci. 115 (2018)
5. Rakha EA et al. Current and future applications of artificial intelligence in pathology: a clinical perspective. 2021 74(7);401-14

6. Khurd P et al. Computer aided Gleason grading of prostate cancer histopathological imaging:From Nano to Macro 2010 IEEE
7. Coulture HD, et al. Image analysis with deep learning to predict breast cancer grade. ER status; histologic subtype and intrinsic subtype NPJ breast cancer 2018;4(1):1-8
8. Hedge N, et al Similar image search for histopathology;SMILY. NPJ Digit Med.2019,2(1):1-9
9. Long LR, et al Content-based image retrieval in medicine retrospective assessment, state of the art and future directions Int J Health inform Syst. 2009, 4(1): 1-16

Competency Based Questions and Answers in

ROGANIDANA & VIKRITI VIGYAN (Pathology)

For second BAMS professional
Examination as per NCISM guidelines

Part I



Dr Rinkal Nakawala

NITYA
PUBLICATIONS

Competencies based Questions and Answers in

Roganidana & Vikriti Vigyan
(PATHOLOGY)

For Second BAMS Professional Examination

Complied and designed as per
NCISM (National Commission of Indian System of Medicine)
Guidelines
PART - I

- 1100 MCQs
- 338 Short Essays
- 151 Long Essays

Writer
Dr Rinkal Nakawala

Nitya Publications

CONTENTS

Type of questions	Title of topic	Page no.
MCQs (Multiple questions)	1.Pareeksha	9
	2. Upashaya/Anupashaya	13
	3. Doshagati and Rogamarga	15
	4. Dosha vikriti	17
	5. Srotodusti	23
	6. Concept and assessment of Ama	26
	7. Dushya dushti	28
	8. Vyadhinamakarana	29
	9. Vyadhi	30
	10. Ashthanindita (Endocrine disorders)	32
	11. Janapadodhwamsa vikara (Pandemic disorders)	34
	12. Nidanarthakara vyadhi and Vyadhisankara	36
	13. Vyadhikshmatva	37
	14. Rogibala pareeksha	40
	15. Dhatupaka	41
	16. Sadhyasadhyata	42
	17. Upadrava	44
	18. Arishtha	45
	19. Vyadhibala pareeksha	46
	20. Digital health and Artificial intelligence in the context of Roganidana	48
	21. Rupa	49
	22. Immunity	51
	23. Repair/Healing	107
	24. Endocrine disorders	56
	25. Infection and nutritional disorders	59
	26. Hypersensitivity	78
	27. Autoimmune disorders	82
	28. Cell injury and adaptations	85
	29. Inflammation	89
	30. Hemodynamic disorders	94
	31. Neoplasia	99
SAQs(Short Answer Question)	1. Roganidana - Pathophysiology and clinical diagnosis	107
	2. Pareeksha and Methods of Rogi pareeksha	108
	3. Sapeksha nidana- Vyavachedaka nidana	110
	4. Vyadhinamakarana	111
	5. Sthana samshrya- poorvaroopa	112
	6. Sroto dusti	113
	7. Dushya dushti	115
	8. Dosha gati and Rogamarga	116
	9. Dosha vikriti	117
	10. Samprapti	122
	11. Vyadhi	122
	12. Nidanarthakara vyadhi and Vyadhi sankara	124
	13. Asthanindita (Endocrine disorders)	124
	14. Rupa	125
	15. Vyadhikshamatva	126
	16. Dhatu paka	127
	17. Janapadodhwamsa vikara (Pandemic disorders)	128
	18. Rogibala pareeksha	129
	19. Vyadhibala pareeksha	131

	20. Sadhyasadhyata	132
	21. Upadrva	133
	22. Concept of Ama and Assessment of Ama	134
	23. Upashaya and Anupashaya	136
	24. Pathology and clinical diagnosis	183
	25. Endocrine diorders	185
	26. Immunity	190
	27. Repair/Healing	207
	28. Infection and nutritional disorders	192
	29. Hypersensitivity	203
	30. Autoimmune diseases	205
	31. Immunodeficiency disorders	206
	32. Cell injury and adaptations	210
	33. Inflammation	215
	34. Hemodynamic disorders	219
	35. Neoplasia	226
LAQs (Long answer question)	1. Sapeksha nidana- vyavachedaka nidana	137
	2. Method of Rogi pareeksha	139
	3. Dushya dushti	147
	4. Pareeksha	148
	5. Dosha vikriti	149
	6. Sthanasamshrya and Poorvaroopa	163
	7. Rupa	165
	8. Concept of Ama	166
	9. Sroto dusti	168
	10. Dushya dushti	169
	11. Dhatu paka	172
	12. Dosha gati and Rogamarga	175
	13. Vyadhikshmatva	177
	14. Vyadhi	180
	15. Samprapti	181
	16. Immunity	232
	17. Hypersensitivity	235
	18. Autoimmune diseases	237
	19. Immunodeficiency disorders	239
	20. Cell injury and adaptations	240
	21. Inflammation	245
	22. Hemodynamic diseases	248
	23. Neoplasm	251

MULTIPLE CHOICE QUESTIONS

Topic 2
Roga Pareeksha and Rogi Pareeksha

1) Rogi pariksha is known as:
A) Nimitta B) Panchanidan
C) Nadi pariksha D) Upashaya and anupashaya

2) The pratyaksha pariksha which will be done with Anuman is
A) Shrotrendriya pariksha B) Rasanendriya pariksha
C) Ghranendriya pariksha D) Sparshanendriya pariksha

3) The assessment of Krodha (anger) can be done by
A) Sanga B) Avigyana
C) Abhidroha D) Abhipraya

4) Namgrahana is the tool used to assess
A) Dvesha B) Samjna (Recognition)
C) Shraddha D) Shoka

5) Dhairyam (courage) is being assessed by
A) Amodena B) Avishada
C) Avibhram D) Abhipraya

6) Smritim (memory) is assessed from the
A) Vishadena B) Toshena
C) Smaranena D) Shraddha

7) Antrakujana (gurgling sound in abdomen) is being assessed by
A) Pratyaksha B) Anumana
C) Aptopadesha D) Yukti

8) If 26 year old man having the occupation of doctor and if he shows frequent interest
in cooking, then it can be inferred that the person have___ towards cooking.
A) Preeti B) Harsha
C) Bhaya D) Shraddha

9) If the person is able to recollect what he has read accurately, then we can say his
___ is ___ quality.
A) Megha (Intelligance) & Pravara(Superior)
B) Man(mind) & Madhya(medium)
C)Dhairya & pravara
D)None of the above

10) Darshanadi Trividha Pariksha is the contribution of -
A) Charak B) Sushruta
C) Vagbhatta D) Yogratnakara

11) Pitatva of mutra (yellowish urine) is being done by
A) Darshana B) Sparshana
C) Prashna D) None of the above

12) The analysis of Jwara (Fever) is being done by
A) Darshana B) Sparshana
C) Prashna D) All of the above

13) The analysis of Sula (pain) is being done by
A) Darshana B) Sparshana
C) Prashna D) None of these

14) Kharatva of the body is being assessed by
A) Darshana B) Sparshana
C) Prashana D) All of the above

15) Vagbhatta has mentioned which type of following type of pariksha ?
A) Shadvidha pariksha
B) Aptopadeshadi trividha pariksha
C) Darshanadi Trividha Pariksha
D) Chaturvidha pariksha

16) Chaturvidha Pariksha comprises:
A) Aptopadesha, Pratyaksha, Anumana & Prashna
B) Aptopadesha, Pratyaksha, Anumana & Sparsha
C) Aptopadesha, Pratyaksha, Anumana & Darshana
D) Aptopadesha, Pratyaksha, Anumana & Yukti

17) Chaturvidha Pariksha is the contribution of
A) Charaka B) Vagbhatta
C) Sushruta D) Yogratnakara

18) Chaturvidha Pariksha is explained in __ sthana of Charak Samhita.
A) Sutra B) VImana
C) Sharira D) Nidana

19) What can be achieved with the help of Yukti at appropriate time ?
A) Dharma B) Artha
C) kama D) All of these

20) Shadvidha Pariksha is the contibution of -
A) Sushruta B) Charak
C) Vagbhatta D) Yogratanakara

21) Shadvidha Pariksha comprises
A) Panchedriya pariksha and Darshana pariksha
B) Panchendriya pariksha and Sparshana pariksha
C) Panchendriya pariksha and Prashana pariksha
D) Panchedriya parikshsa nad Anuman pariksha

22) Vata dominant diseases are seen in-

A) Jangala desha B) Sadharana desha

C) Anupa desha D) None of these

23) Kapha dominant diseases are seen in-

A) Jangala desha B) Sasharana desha

C) Anupa desha D) None of the above

24) Mandagni is usually seen in __ Prakriti persons.

A) Vata B) Pitta

C) Kapha D) Sama prkriti

25) Prashan pariksha is mentioned in

A) Sushruta samhita B) Astanga hridya

C) Both 1 &2 D) None of these

26) *Arishtalingadishu vrana naamvrananam cha gandhavisheshaha-* It indicates

A) Ghranendriya pariksha B)Chakshurindriya pariksha

C) Sparshana pariksha D) Rasanendriya pariksha

27) *Vatamutrapurishnama pravrutimaprvaruttima kalprakarshadichha visheshan-* this indicates:

A) Prashna priksha B) Sparshana Pariksha

C) Anuman pariksha D) Chakshurindriya pariksha

28) *Todanabhedanachhedanadivedana visheshaha* - comes under

A) Prashana pariksha B) Sparshana pariksha

C) chaksurindriya pariksha D) Rasanendriya pariksha

29) *Haridra netrata* (dark yellowish discolouration of eyes) - comes under

A) Prashna pariksha B) Chakshurindriya pariksha

C) Rasanendriya pariksha D) None of these

30) *Pramehadi rasvisheshaha-* indicates

A) Prashna pariksha

B) Chakshurindriya pariksha

C) Sparshana pariksha

D) Rasanendriya pariksha

31) Ashta sthana pariksha is described by

A) Charak B) Sushruta

C) Yoga Ratnakara D) Vagbhatta

32) Which of the following is/are the synonyms of Nadi (pulse) ?

A) Snayu B) Hamsi

C) Dharani D) All of these

33) If the pulsation felt by the index finger, it implies the dominance of-

A) Vata B) Pitta

C) Kapha D) None of these

34) Which is NOT included under the Astha sthana pariksha?

A) Jihva B) Nadi

C) Prakriti D) Shabda

35) Hamsagati nadi is found in dosha dominance

A) Vata B) kapha

C) Pitta D) Rakta

36) Sarpagati nadi is found in dominance of

A) Vata B) Pitta

C) kapha D) Rakta

37) It is stated that in each doshaja Nadi, there will be residence of one God. As per Yoga Ratnakara Lord __ will reside in Pitttaja Nadi.

A) Brahma B) Shankar

C) Vishnu D) Mahesh

38) In which of the following conditions Nadi pariksha is contraindicated ?

A) Sadya snata B) Bhukta

C) After Snehan D) All of these

39) Nadi comprising of gati resembling the speed of *kashthakutta* (woodpecker) ?

A) Vata pitta B) vata kapha

C) Pitta kapha D) Tridosha

40) If pulse moves like a *Damaru* (hourglass shaped small drum) first throbbing then lost then again throbbing, it indicates

A) Death of the person in one day

B) The presence of Aam

C) The person should not be treated

D) None of the above

41) According to Yog ratnakara, for mutra pariksha which stream of urine should be collected ?

A) Madhya dhara (mid stream)

B) Addhya dhara (Initial stream)

C) Adhodhara (end portion)

D) None of these

42) Krishna varna (Blackish discoloration of urine) indicate which type of dosha dominance ?

A) Vata B) Kapah

C) Pitta D) Sannipata parakopa

43) The tail (Oil) used in Tail bindu pariksha is

A) Tila tail B) Narikela oil

C) Sarshapa oil D) Kusumbha oil

44) In tail bindu pariksha if drop of oil spreading quickly in the upper layer of the urine it indicates that the disease is

A) Asadhya(Incurable) B) Kasta sadhya (difficult to cure)

A) Chakshurendriya pareeksha
B) Prasana pareeksha
C) Both 1 & 2 D) Sparshanendriya pariksha

Answer keys

1-B, 2- B, 3-C, 4-B, 5-B, 6-C, 7-A, 8-D, 9-A, 10-C, 11-A, 12-B, 13-C, 14-B, 15-C, 16-D, 17-A, 18-A, 19-D
20-A, 21- C, 22-A, 23-C, 24-C, 25-C, 26-A, 27-A, 28-A, 29-B, 30-D, 31-C, 32-D, 33-A, 34-C, 35-B, 36-A
37-B, 38-D, 39-D, 40-A, 41-A, 42-D, 43-A, 44-C, 45-A, 46-A, 47-C, 48-D, 49-C, 50-B, 51-D, 52-C, 53-D
54-A, 55-A, 56-A, 57-C, 58-A, 59-B, 60-A, 61-C, 62-C, 63-A, 64-A, 65-C, 66-B, 67-C, 68-B, 69-A, 70-C
71-B, 72-A, 73-C, 74-D, 75-A, 76-A, 77-C, 78-B, 79-B, 80-C, 81-A, 82-D, 83-D, 84-A, 85-C, 86-B, 87-D
88-D, 89-C, 90-C, 91-C

POINTS TO REMEMBER

The Pariksha is of two types: 1. Roga pariksha
2. Rogi pariksha

1) Two fold examination

द्विविधा तु खलु परीक्षा ज्ञानवतां- प्रत्यक्षम्, अनुमानं च| C.S.Vi. 8/83

Pratyaksha (perceptual) and *Anuman* (inferential) are the two types of examination tools mentioned for the diagnosis of diseases.

2) Three fold examination

दर्शनप्रश्नसंस्पर्शैः परीक्षा त्रिविधा स्मृता| C.Ci. 25/22

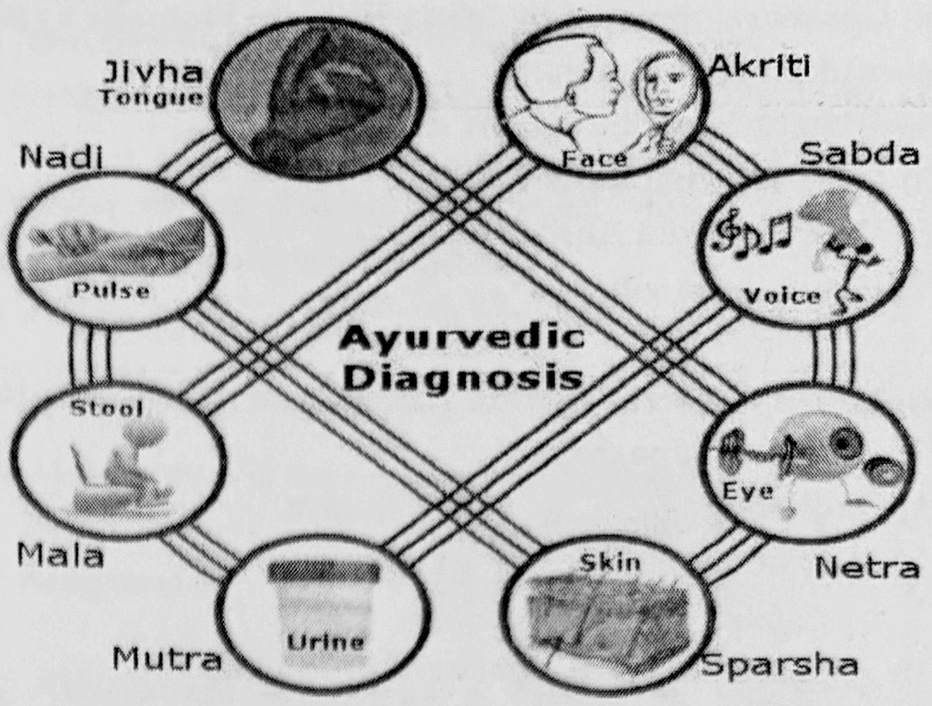
Darsana (inspection) , *Prasna* (history taking) and *Sparsana* (palpation) - are the three fold examination techniques stated for the diagnosis of diseases.

3) Four fold examination

तस्य चतुर्विधा परीक्षा-
आप्तोपदेशः, प्रत्यक्षम्, अनुमानं, युक्तिश्चेति||१७|| C.Su.



4) Eight fold examination described by Yoga ratnakara :



Topic 5
Upashaya/Anupashaya

1) Depending upon the nature of Upashaya adopted, it is of __ types.
A) 6 B) 12
C) 18 D) 24

2) Which of the following is the synonym of Upashaya?
A) Samsthana B) Satmya
C) Samutthana D) Samvrita Asamvrita

3) Use of shunthi as medicine in the patient of Vatakaphaja jwara is an example of__
A) Hetu vyadhiviparita B) Vyadhi Viprita
C) Hetu Vipritarthakari D) Hetu Viprita

4) Use of Dashamula in the patient of Vataja Shotha is an example of__
A) Ubhaya Viparita B) Vyadhi Viparita
C) Hetu Viparita D) Hetu Viparitarthkari

5) Upashaya is helpful in detecting
A) Gudhalinga vyadhi B) Vyaktalinga vyadhi
C)Vyadhi with upadrava D) Vyadhi with Arishta lakshana

6) Anupashaya is also called as
A) Vyadhi Asatmya B) Vyadhi satmya
C) Upadrava D) Arishta

7) Upashaya obtained by using Takra (Butter milk) in Vataja Grahani is an example of __Upashaya.
A) Ubhaya viprita Anna

B) Hetu viparitarthkari Anna
C) Vyadhi viprita Aushadh
D) Hetu viprita vihara

8) Upashaya obtained by using Nisha in Prameha vyadhi is example of__ Upashaya.
A) Ubhaya Viparitarthakari Anna
B) Hetu Viparitarthakari Anna
C) Vyadhi viprita Aushadh
D) Hetu viprita vihar

9) As per Charak vyadhi pariksha is done by using Upashaya- Anupashaya.
A) Gudhaling B) Kshudra
C) Nanatmaja D) None of these

10) ___ does not gives Upashaya in Jwara.
A) Langhana B) Ushna jala
C) Guru Ahara D) Shadang Paniya

11) Upashaya is also called as
A) Vyadhi satmya B) Vyadhi asatmya
C) Upadrava D) Arishta

12) ___ gives Upashaya in Jwara.
A) Snigdha Aahar B) Abhishyandi Aahar
C) Guru Aahar D) Shadang Paniya

13) In cardiac diseases does not give Upashaya.
A) Heart healthy diet B) Smoking
C) Control of high blood pressure
D) Regular and moderate exercise

14) Use of milk as a purgative in Atisara is an example of __ Upashaya.
A) Vyadhi Vipritarthakari Anna B) Ubhaya viprita Anna
C) Hetu viprita Anna D) Vyadhi viprita Anna

15) __पुनर्हेतुव्याधिविपरीतानां विपरीतार्थकारिणां चौषधाहारविहाराणा मुपयोगः सुखानुबन्धः||१०||
Fill the gap
A) Asatmya B) Satmya

Answer keys
1-C, 2-B, 3-D, 4-A, 5-A, 6-A, 7-A, 8-C, 9-A, 10-C, 11-A, 12-D, 13-B, 14-A, 15-D, 16-A, 17-B, 18-A
19-C, 20-D, 21-B

POINTS TO REMEMBER

गूढलिङ्गं व्याधिमुपशयानुपशयाभ्यां|| C.Vi. 4/8

In case of difficulty in a diagnosis of disease due to some hidden or mimicking nature of disease in such circumstances *Upashaya* and *Anupasaya* helps to diagnose the condition.

हेतुव्याधिविपर्यस्तविपर्यस्तार्थकारिणाम्|
औषधान्नविहाराणामुपयोगं सुखावहम्||
विद्यादुपशयं व्याधेः स हि सात्म्यमिति स्मृतः|| A.Hr. Ni 1/6-7-

C) Anupashaya D) Upashaya

16) अतीसारे स्तम्भनं मसूरादि||
It is an example of-
A) Vyadhi viprita annam
B) Hetu VyadhiVipritarthakari annam
C) Hetu Vyadhi viprita Anna
D) Vyadhi vipritarthakari annam

17 पच्यमाने पित्तप्रधाने शोथे विदाह्यन्नं||
It is an example of-
A) Hetu viparita annnam
B) Hetu Vyadhi vipritarthakari Annam
C) Hetu Vyadhi Viprita annam
D) Vyadhi vipritarthakari Annam

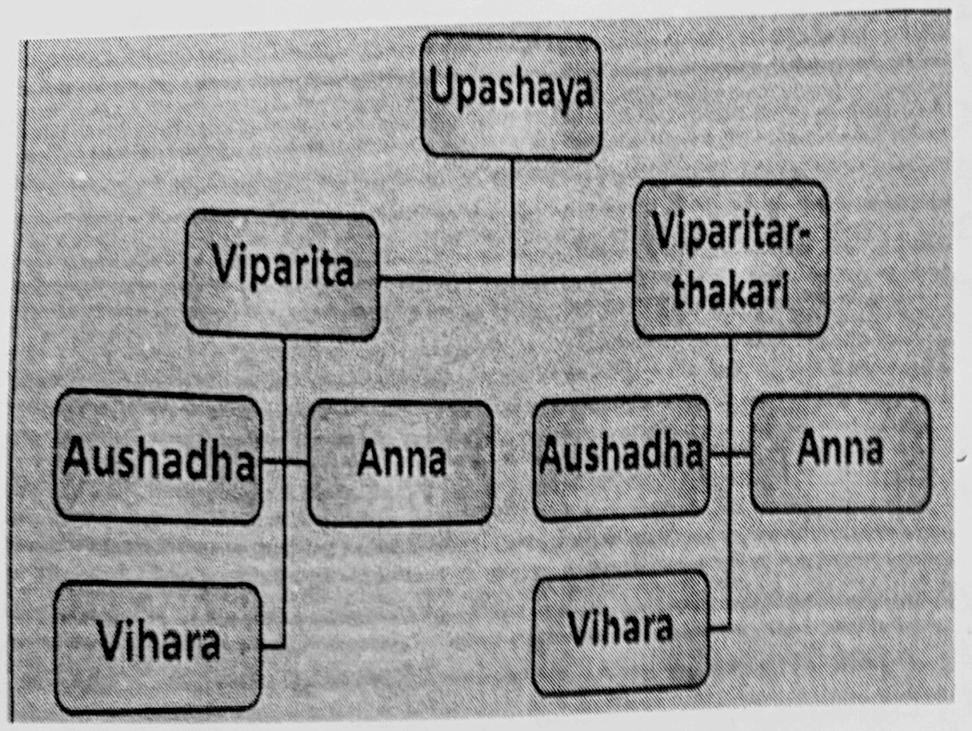
18दिवास्वप्नोत्थकफे रात्रौ जागरणं||
It is an example of
A) Hetu Viprita Vihara B) Vyadhi viprita vihar
C) Hetu Vyadhivipritarthkari Vihara
D) Vyadhi vipritarthkari Vihara

19 वातोन्मादे सन्त्रासनं||
Is an example of-
A) Hetu viparita Vihara B) Hetu Vyadhivipritarthkari vihara
C)Vyadhi viprita Vihara D) Vyadhi Viparitathkari vihara

20अग्निना प्लुष्टेऽगुर्वादिना लेपः||
It is an example of
A) Vyadhi Vipritarthkari aushadham
B) Vyadhi viprita aushadham
C) Hetu viprita aushadham
D) Hetu Vipritarthakari aushadha

21मद्यपानोत्थे मदात्यये मदकारकं मद्यं||
It is an example of
A) Hetu Viprita Annam
B) Hetu Vyadhivipritarthakari annam
C) Hetu Vyadhi Viprita annam
D) Vyadhi vipritarthakari annam

Upashaya is the method where in after giving certain medicine, food or following certain practices, the ailing individual will be getting relief from the suffering.
Where in the term *Anupashaya* refers to the worsening of the symptoms on following medicine, food or daily practices.
Types :



Topic 7

Doshagati and Rogamarga

1) Bahya Rogmarga(External pathway) is also known as
A) Madhyama B) Koshtha
C) Shakha D) Abhyantara

2) Abhyantra Rogmarga (Internal pathway) is also known as
A) Shakha B) Madhyama
C) Abhyantara D) Koshtha

3) Marmasthi sandhi is also termed as
A) Shakha B) Madhyama
C) Koshtha D) Abhyantara

4) Pakshaghata is considered as ___ Rogmargashrita Vikara
A) Madhyama B) Bayha
C) Abhyantara D) Koshtha

5) Jwara (Fever) is considered as __ Rogamargashrita vikara.
A) Madhyama B) Bahya
C) Abhyantara D) Shakha

6) The doshagati in Urdhvaga Raktapitta is
A) Urdhva B) Adha
C) Tiryak D) None of these

7) Which of the following reason is responsible for the movement of dosha from shakha to Koshtha?
A) Dosha vriddhi (Exacerbation of doshas in the body)
B) Paka (suppuration)
C) Vishyandana (Liquefication)
D) All of the above

8) Which of the following is NOT included in Madhyama Rogmarga ?
A) Janu Sandhi B) Basti
C) Hridya D) Amashaya

9) Which of the following diseases may involve both Bahya and Abhyantara Rogamarga?
A) Arshas B) Vidradhi
C) Gulma D) All of the above

10) Mahanimna is the synonym of __ Rogmarga.
A) Bahya B) Madhyama
C) Abhyantara D) All of these

11) Abhyantara Rogmarga is related to which of the following terms?
A) Maha srotas B) Sharir Madhya
C) Ama pakvashaya D) All of the above

12) Shwasa is a disease involves which of the following Rogamarga?
A) Abhyantara B) Madhyama
C) Bahya D) All of the above

13) Which of the following reason is/are responsible for the movement of doshas from koshtha to shakha ?
A) Vyayama (Excessive exercise)
B) Ushmanah taikshnya (Intake of excessive hot substances)
C) Ahita Acharanat (Unwholesome diet and regimen)
D) All of the above

14) "Padadaha" is an example of__ Doshagati.
A) Urdhwa B) Adha
C) Aashayapakarsha D) Koshtha

15) Vatanigraha causes Doshagati
A) Koshtha- Shakha B) Shakha-Koshtha
B) Tiryag D) All of these

16) Dosha Shakha- Koshtha Gati is due to
A) Ativyayama B) Srotovishodhana
C) Vata prakopa D) All of the above

17) Rajayakshma (Tuberculosis) is which margashrita vyadhi?
A) Koshtha B) Shakha
C) Marma-Asthi-Sandhi D) All of the above

18) Abhyantara marga (Internal pathway) include vyadhi-
A) Jwara B) Shwasa
C) Kasa D) All of these

19) Visarpa is which margashrit vyadhi ?

A) Bahya B) Abhyantara
C) Both 1 & 2 D) None

20) Adhimamsa is considered as ___ Margashrita Vyadhi.
A) Abhyantara B) Madhyama
C) Bahya D) All of these

21) Which of the following is not Shakha Margashrita Vyadhi ?
A) Jwara B) Alaji
C) Apachi D) Kushtha

22) Doshagati are-
A) Urdhwa B) Adha
C) Tiryag D) All of the above

23) Trividha Roga margas are-
A) Koshtha B) Shakha
C) Marma- Asthi- Sandhi D) All of these

24) Madhyama Margashrita Vyadhi is-
A) Jwara B) Atisara
C) Kushtha D) Pakshavadha

25) Hridaya roga is the vyadhi of-
A) Abhyantara B) Madhyam
C) Bahya D) All of these

26) Trividha Rogamargas are
A) Koshtha B) Shakha
C) Marma- asthi- sandhi D) All of the above

27) The number of Roga marga as per Charaka
A) 2 B) 3 C) 4 D) 5

28) Shakha, Marmasthi Sandhi and koshtha are known as
A) Three Roga margas B) Trividha chikitsa sutra
C) Trividha Upasthambha D) Trividha Ayatana

29) Shakrit Graha (Constipation) is one of the feature of-
A) Vriddha pitta dosha B) Vriddha vata dosha
C) Vriddha kapha dosha D) None of the above

30) If the person attains the Visphota (Blisters) all over the body- it suggest the___ gati of Dosha.
A) Urdhwa gati B) Adho gati
B) Tiryak gati D) None of the above

Answer keys

1-C, 2-D, 3-B, 4-A, 5-C, 6-A, 7-D, 8-D, 9-D, 10-C, 11-D, 12-A, 13-D, 14-C, 15-B, 16-B, 17-C,18-D
19-C, 20-C, 21-A, 22-D, 23-D, 24-D, 25-B, 26-D, 27-B, 28-A, 29-B, 30-C

POINTS TO REMEMBER

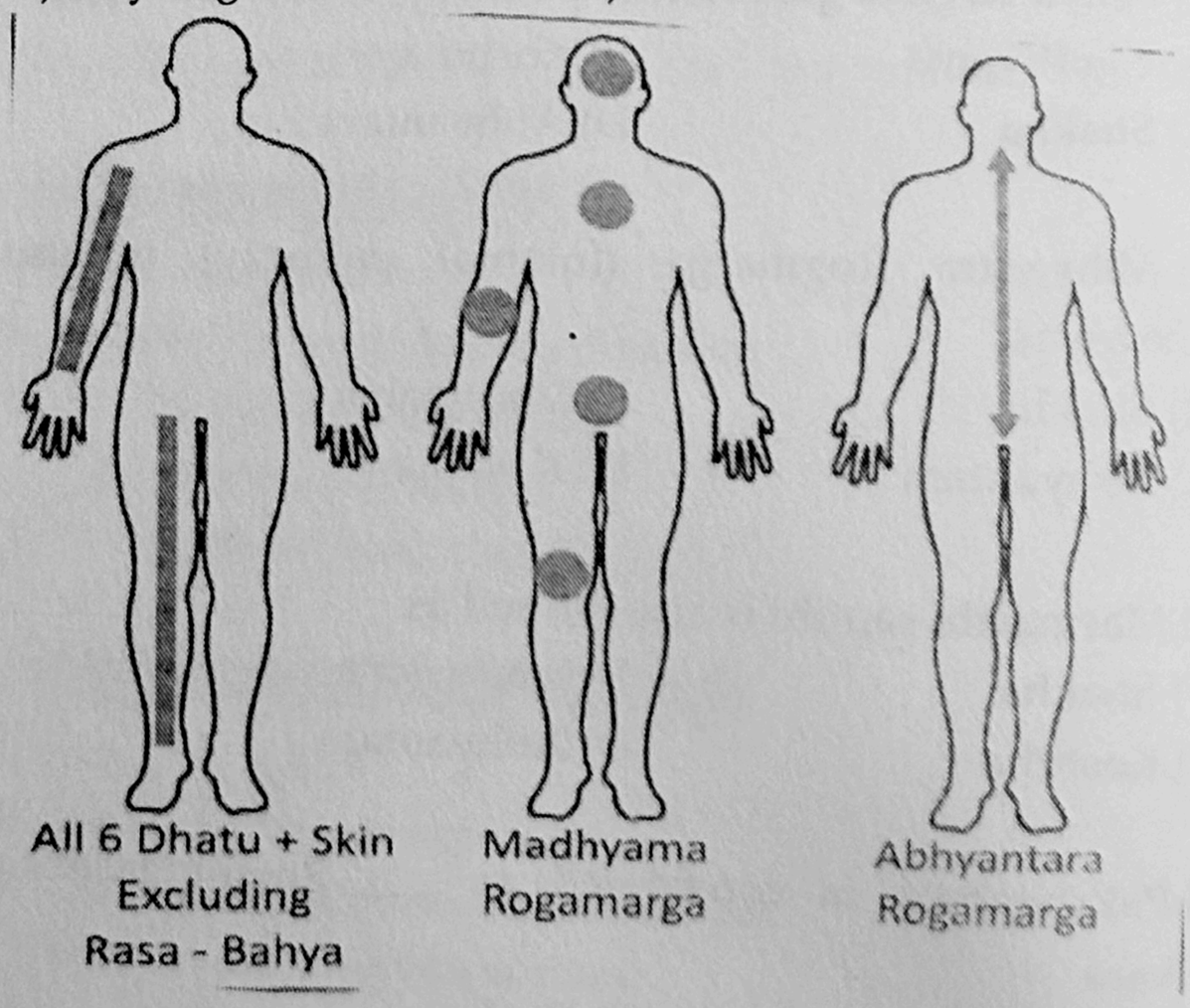
- Movement of Dosha from Koshtha to Shakha (Reasons)

व्यायामादूष्मणस्तैक्ष्ण्याद्धितस्यानवचारणात्।
कोष्ठाच्छाखा मला यान्ति द्रुतत्वान्मारुतस्य च।।३१।। Ca.Su.-28

- Movement of Dosha from Shakha to Koshtha (Reasons)

वृद्ध्या विष्यन्दनात् पाकात् स्रोतोमुखविशोधनात्।
शाखा मुक्त्वा मलाः कोष्ठं यान्ति वायोश्च निग्रहात्।।३३।। Ca.Su.-28

- Rogamarga is the pathway of manifestation of the disease. Three Rogamargas are mentioned:
1. Bahya (Shakha)
2. Madhyama (Marma, Asthi, Santhi)
3. Abhyantara (Koshtha)



Dosha Vikriti

1) अर्थानां कर्मणः कालस्य।।
are collectively known as
A) Tri danta B) Tri Ayatana
B) Trimala C) None of the above

2) त्रिविधो वा, असात्म्येन्द्रियार्थसंयोगप्रज्ञापराधपरिणामभेदात्।।
are collectively known as
A) Triayatana B) Trimala
C) Tridanta D) Trayopsthambha

3) Which of the following is /are the synonyms of Nidana?
A) Hetu B) Nimitta
C) Ayatana D) All of these

4) Diurnal variation of doshas take place during routinely (i.e. during night, day & during Digestion) - *naktam dinritu bhuktanso dosha prakopasya hetavah*..I - is the example of
A) Sannikrista hetu B) Viprakrista hetu
C) Vyabhichari hetu D) None of the above

5) Accumulated kapha in hemanta ritu manifest kaphaja vikara in vasant ritu- it is an Example of-
A) Sannikrista hetu B) Viprakrista hetu
C) Vyabhichari hetu D) None of the above

6) Accumulated pitta in Varsha ritu manifest pittaja vikara in __ ritu.
A) Sarad B) Varsa
C) Grishma D) Vasanta

7) Vyabhichari Nidana is-
A) Weak etiology B) Strong etiology
C) Complicated etiology D) None of these

8) Agantuja hetu (External cause) may be included under__ hetu.
A) Vyabhichari B) Pradhanika
C) Sama D) Niram

9) Sannikrishta and Viprakrishta are the type of-
A) Rupa B) Nidana
C) Purvarupa D) Upashaya

10) सर्वशोऽदर्शनम।।
(Not at all seeing any object) - is called as
A) Chaksurindriya Ayoga
B) Chaksurindriya atiyoga
C) Chaksurindriya Mithyayoga
D) None of the above

11) The person who does not follow eating rules as described under *asthavidhaaahara Vishesayatana* is called rasanendriya-
A) Atiyoga B) Mithyayoga
C) Ayoga D) None of these

12 विषमस्थानाभिघाताशुचिभूतसंस्पर्शादयश्चेति।।
is called as sparsanendriya-
A) Mithyayoga B) Ayoga
C) Atiyoga D) None of the above

13) Those which are responsible for the development of specific disease by specific etiology is called as-
A) Vyadhi Hetu B) Dosha Hetu
C) Ubhaya Hetu D) None of these

14) Kasaya (Astringent) taste mud aggravates__ dosha and manifest *mrdbhaksanjanya Pandu Roga.*
A) Kapha B) Pitta
C) Vata D) All of these

15) Intake of Kulattha in excess manifest___ vikara.
A) Ajirna B) Shitapitta
C) Amlapitta D) Udara roga

16) In Hemantritu due to madhuradi substances accumulation of kapha observed- it is an example of___hetu.
A) Vyanjaka Hetu B) Utpadaka Hetu
C) Bahya Hetu D) Abhyantara hetu

17) In which season Vata Prakopa manifest naturally (Prakrita hetu) ?
A) Varsa B) Sarad
C) Vasant D) Hemanta

18) In vata prakriti person, kapha and pitta rogas are-
A) Asadhya B) Sukha sadhya
C) Kasta sadhya D) None of these

19) Ingestion of food into Koshtha through mouth is occurring due to-
A) Samana Vata B) Udana Vata
C) Prana Vata D) Kledaka kapha

20) Mandagni is due to the dominance of __ Dosha

A) Vata
B) Pitta
C) Kapha
D) None of these

21) Among the type of agni, which of the following is considered as Pradhana?
A) Bhutagni
B) Dhatvagni
C) Tikshnagni
D) Jatharagni

22) Sukshma (minute) portion formed due to Rakta Dhatvagni leads to
A) Nourishment of Rakta dhatu
B) Nourishment of mamsa dhatu
C) Nourishment of pitta
D) All of the above

23) Malamsha formed out of Mamsa Dhatvagni Paka is-
A) Kapha
B) Pitta
C) Khamala
D) Sweda

24) Reduced digestive power due to kapha cause
A) Mandagni
B) Vishamagni
C) Tikshnagni
D) None of these

25) Agnimandya leads to symptoms of-
A) Food poisoning
B) Snake poisoning
C) Snake poisoning
D) None of these

26) विक्रियामापन्नस्त्रिविधोभवति-
विषमो वातेन, तीक्ष्णः पित्तेन, मन्दः श्लेष्मणा, चतुर्थः समः सर्वसाम्यादिति ।
Has been described in context to-
A) Srotas
B) Ama
C) Agni
D) Ojas

27) तत्र यो यथाकालमुपयुक्तमन्नं सम्यक् पचति।।
Indicates
A) Mandagni
B) Samagni
C) Vishamagni
D) Tikshanagni

28) कदाचित् सम्यक् पचति कदाचिदाध्मानशूलोदावर्तातिसारजठरगौरवान्नकूजनप्रवाहणानि कृत्वा।।
It indicates
A) Mandagni
B) Samagni
C) Vishamagni
D) Tikshnagni

29) यः प्रभूतमप्युपयुक्तमन्नमाशु पचति ।।
It indicates-
A) Mandagni
B) Samagni
C) Vishamagni
D) Tikshnagni

30) स मुहुर्मुहुः प्रभूतमप्युपयुक्तमन्नमाशुतरं पचति, पाकान्ते च गलतालोष्ठशोषदाहसन्तापाञ्जनयति।।
It indicates
A) Mandagni
B) Tikshnagni
C) Vishamagni
D) Atyagni

31) Investigation done for Agnimandya is
A) Gastric analysis
B) Stool examination
B) Serum amylase
D) All of the above

32) In Vishamagni digestive power is
A) Irregular
B) Regular
C) Increased
D) Decreased

33) Among the following __ is not a type of Ajeerna.
A) Aamjeerna
B) Vidagdhajeerna
C) Dushtaajeerna
D) Vishtabdhajeerna

34) Number of Agni according to charaka are-
A) 5
B) 6
C) 7
D) 13

35) Almost all diseases arise due to __ (Specially Udara roga)
A) Mandagni
B) Samagni
C) Tikshnagni
D) Vishmagni

36) __ is considered as Pradhana (Superior) among remaining dosha.
A) Vata
B) Pitta
C) Kapha
D) None of these

37) How many types of Avarana described in ayurveda ?
A) 20
B) 44
C) 30
D) 12

38) Annyonyavarana of vata dosa having ___ types.
A) 13
B) 7
C) 1
D) 20

39) मूर्च्छा दाहो भ्रमः शूलं विदाहः शीतकामिता।।
These are the characteristic features of-
A) Kaphavrita Pranavata
B) Pittavrita Pranavata
C) Pittavrita Udanavata
D) Pittavrita Apanavata

40) Ativibandha (severe constipation) - is one of the feature of-
A) Annavrita vata lakshana
B) Mutravrita vata lakshana
C) Varchsavrita vata lakshana
D) None of the above

41)शूलं तु पीड्यमाने च पाणिभ्यां लभते सुखम्।।
It is a symptoms of-
A) Majjavrita vata
B) Meda srita vata
B) Mamsavrita vata
D) Asthyavrita vata

42) रजसश्चातिवर्तनम्।।
(Excessive menstrual bleeding) - is a feature of-
A) Kaphavrita apana vata B) Pittavrita apana vata

C) Pittavrita samana vata D) Pittavrita vyanavata

43) Chardi (Vomiting) is one the feature of-
A) Udanavrita apana vata
B) Vyanvrita apana vata
C) Piitavrita prana vata
D) All of the above

44) Asweda (Absence of sweating) - is the lakshana of
A) Kaphavrita samana vata
B) Pittavrita samana vata
C) Vyanavrita prana vata
D) None of the above

45) Atisweda (Excessive perspiration) - is one of the feature of
A) Vyanavrita prana vata B) Pittavrita samana vata
C) Both 1 & 2 D) None of the above

46) Adhyavata caused by Medasavrita vata is-
A) Kasta sadhya B) Sukha sadhya
C) Asadhya D) None of the above

47) हर्षः पिपीलिकानां च सञ्चार इव | | (Horripilation and formiculation) is the feature of
A) Mamsavrita vata B) Medasavrita vata
C) Maajavrita vata D) Sarva dhatvavrita

48) Which of the following is/are the complications of Avarana?
A) Hridya roga B) Pliha roga
C) Vidhradhi D) All of the above

49) स्वकर्मवृद्धिर्भवति | | (Increase of function) is the feature of
A) Avarya B) Avaraka
C) Both 1 & 2 D) None of these

50) स्वकर्महानिर्भवति | | (Loss of function) is the feature of
A) Avarya B) Avaraka
C) Avarana upadrava D) None of these

51) The number of kriyakala according to sushruta
A) 3 B) 4
C) 5 D) 6

52) Gradual accumulation of dosha in respective seats it is the stage of kriyakala
A) Sanchaya B) Prasara
C) Bheda D) Sthanasamsraya

53) Vata sanchaya lakshana is-
A) Stiffness and fullness of abdomen
B) Indigestion C) Sucking type of pain
D) Vomiting

54) Dosha dushya samurcchana is seen in ___ kriyakala.
A) Prathama B) Dwitiya
C) Trutiya D) Chaturtha

55) Kriyakala is the contribution of
A) Charaka B) Sushruta
C) Yoga ratnakara D) Vagbhatta

56) The lakshana observed in which of the following stage of kriyakala is NOT included in the dosha lakshana?
A) Sthana Samshraya B) Sanchaya
C) Prasara D) Prakopa

57) Pitavabhasata (Yellowish discolouration) is seen in which of the following stage?
A) Pitta prakopa B) Pitta Sanchaya
C) Pitta prasara D) Pitta sthana samshraya

58) Purvarupa (Prodromal symptoms) will develop in which of Kriyakala?
A) Sanchaya B) Prasara
C) Sthana samshraya D) Vyakti

59) Upadrava(complication) & Arishtha(fatal signs) will develop in which of the following stage of kriyakala?
A) Sanchaya B) Sthana samshraya
C) Vyakti D) Bheda

60) Stage of localization is
A) Sanchaya B) Bheda
C) Sthana samshraya D) Vyakti

61) As per Sushruta the number of Kriyakala is:
A) 4 B) 5
C) 6 D) 3

62) A 12 year old girl, presented with frontal headache and cough from past 2-3 days. This was initially dry cough followed by whitish expectoration. This may indicate the dominance of __ Dosha in the body.
A) Pitta B) Kapha
C) None of the above D) Vata

63) Which of the following *rasa*(taste) accumulates vata dosha?
A) Katu (Pungent) B) Tikta (Bitter)
C) Kashaya(Astringent) D) All of these

64) बलवद्विग्रह | | (weak person fighting with stronger one) - is the cause of
A) Vata prakopa B) Pitta prakopa
C) Kapha prakopa D) None of these

65) ___ means various kinds of pain and discomfort of the body as per Dalhana

A) Vidaha B) Vidagdha
C) Ayasa D) None of these

66) Divaswapna (Sleeping during the day time) is one of the cause of-

A) Kapha prakopa B) Vata prakopa
C) Rakta prakopa D) Pitta prakopa

67) Which of the following is NOT a feature of Vata Vriddhi ?

A) Karsya B) Nidranasa
C) Majjasosa D) Santapa

68) Which of the following is/are the symptoms of Pitta Vriddhi?

A) Pitavabhasta B) Sitakamitva
C) Murccha D) All of these

69) *Souklyam-saityam-sthairyam*- these are the features of

A) Vata vriddhi B) Pitta vriddhi
C) Kapha vriddhi D) None of these

70) *Sandhi saithilya* (looseness of joints) is one of the symptom of-

A) Kapha kshaya B) Vata kshaya
C) Pitta kshaya D) None of these

71) Achintana(No thinking at all) will be responsible for the __ of vata dosha in the body.

A) Increase B) Decrease
C) Balanced D) None of these

72) Staimitya is the prakopa karma seen in which of the following dosha involvement?

A) Pitta B) Kapha
C) Vata D) None of these

73) Hrid Drava(Palpitation) is the lakshana seen in the patients who are having-

A) Vata kshaya B) Pitta kshaya
C) Kapha kshaya D) Kapha vridhhi

74) संश्रेपत कियायोगो निदान परिबर्जनम।

It is the contribution of

A) Sushruta B) Charaka
C) Vagbhatta D) Sharangadhara

75) The increase of ___ takes place when the person avoids sleep at night.

A) Snigdha B) Ruksha
C) Vishada D) Tikshana

76) Frequent consumption of Kulattha (Horse gram) lead to vitiation of

A) Vata B) Pitta
C) Kapha D) All of the above

77) If the patient complain of constipation it indicates which dosha involvement?

A) Vata increase B) Kapha increase
C) Pitta increase D) Tridosha

78) If patient having complain of burning sensation in epigastrium it suggest which dosha involved ?

A) Vata increase B) Pitta increase
C) Kapha increase D) None of these

79) If patient having complain of passing mucus mixed stool- that indicates

A) Vata and Kapha increase B) Tridosha increase
C) Vata increase D) None of these

80) Vaka parushya (Hoarseness of voice) is indicate of

A) Vata vitiation B) Pitta vitiation
B) C) Kapha vitiation D) None of these

81) Consumption of Nishpava leads to the vitiation of-

A) Pitta B) Vata
C) Kapha D) None of these

82) In Ashayapakarsha, disease produced by which dosha influence?

A) Vata B) Pitta
C) Kapha D) All of these

83) Ashayapakarsha is a contribution of-

A) Charaka B) Sushruta
C) Madhavakara D) None of these

84) In Ashaya-Apakarsha vata should be in-

A) Prakopavastha B) Vriddhavastha
C) Kshyavastha D) None of these

85) सम्भज्यते सीदति च सूचीभिरिव तुद्यते।।

Is the symptoms of-

A) Medusavruta vata B) Mamsaavruta vata
C) Asthiavruta vata D) Majjvruta vata

86) Match the type of Avarana with its chikitsa sutra as per charaka Type of Avarana Chikitsa sutra

1) Pranavritta vyana a) Sneyayukta virechana
2) Vyanavritta prana b) Agnideepak ghrita
3) Pranvritta samana & Ashwasana c) Urdhwa jatrugata chikitsa
4) Samanavritta apana d) Sneha with yapanabasti
5) Pranavritta udana e) Urdhwa jatrugata chikitsa

A) 1-E, 2-A, 3-D, 4-B,5-C B) 1-C, 2-A, 3-D, 4-B, 5-E
C) 1-C, 2-E,3-D, 4-B, 5-A D) 1-E, 2-A, 3-D, 4-C, 5-B

Answer keys				
1 - B	21 - D	41 - A	61 - C	81 - B
2 - A	22 - B	42 - B	62 - B	82 - A
3 - D	23 - C	43 - D	63 - D	83 - C
4 - A	24 - A	44 - A	64 - A	84 - A
5 - B	25 - A	45 - C	65 - C	85 - C
6 - A	26 - C	46 - A	66 - A	86 - A
7 - A	27 - B	47 - A	67 - D	
8 - B	28 - C	48 - D	68 - D	
9 - B	29 - D	49 - B	69 - C	
10-A	30 - D	50 - A	70 - A	
11-B	31 - D	51 - D	71 - B	
12-A	32 - C	52 - A	72 - B	
13-A	33 - C	53 - A	73 - C	
14-C	34 - D	54 - D	74 - A	
15-C	35 - A	55 - B	75 - B	
16-B	36 - A	56 - A	76 - B	
17-A	37 - B	57 - B	77 - A	
18-B	38 - D	58 - C	78 - B	
19-C	39 - B	59 - D	79 - A	
20-C	40 - C	60 - C	80 - A	

POINTS TO REMEMBER
DOSHA VIKRITI
HETU

AGNI DUSTI

The term hetu or nidana is used in two different contexts- one in the context of etiological factor and other in the context of means of daignosis.

सेतिकर्तव्यताको रोगोत्पादकहेतुर्निदानम्| M.Ni. - 1/5

As per madhava nidana the one which is responsible for the manifestation of disease by performing various functions in the body which lead to abnormality in the dosha level.

Several classification of hetu are explained in madhukosha commentary of madhava nidana.

4 types - **सन्निकृष्टविप्रकृष्टव्यभिचारिप्राधानिकभेदाच्चतुर्धा।।**

3 types - **असात्म्येन्द्रियार्थसंयोगप्रज्ञापराधपरिणामभेदात्।।**

3 types - **दोषव्याध्युभयहेतुभेदाच्च स त्रिविधः।।**

2 types - **स एवोत्पादकव्यञ्जकभेदाच्च द्विधा।।**

2 types - **अनुबन्ध्यानुबन्धभेदाच्च द्विधा। अनुबन्ध्यः प्रधानम्, अनुबन्धोऽप्रधानम्।।**

2 types - **बाह्याभ्यन्तरभेदाच्च द्विधा।।**

1 type- **आशयापकर्षतो यथा- यदा स्वमानस्थितमेव दोषं स्वाशयादाकृष्य वायुः स्थानान्तरं गमयति तदा स्वमानस्थोऽपि स विकारं जनयति।।**

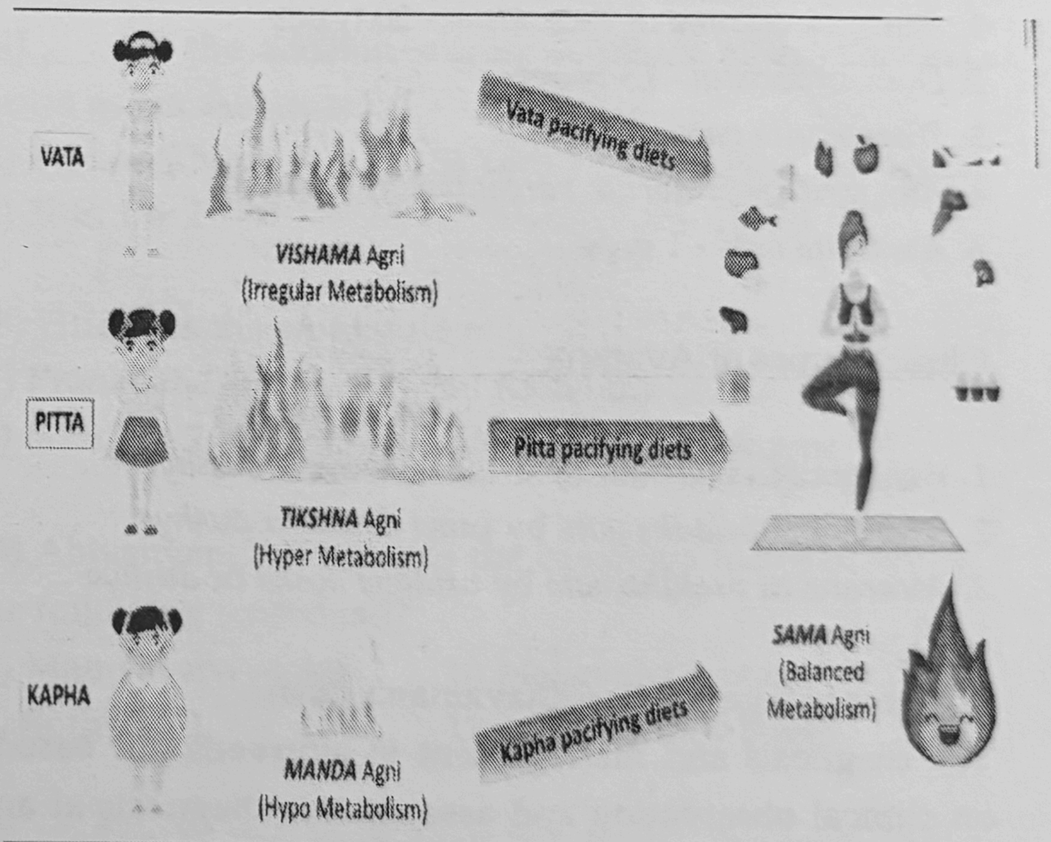
आयुर्वर्णो बलं स्वास्थ्यमुत्साहोपचयौ प्रभा।
ओजस्तेजोऽग्नयः प्राणाश्चोक्ता देहाग्निहेतुकाः।।३।।
शान्तेऽग्नौ म्रियते, युक्ते चिरं जीवत्यनामयः।
रोगी स्याद्विकृते, मूलमग्निस्तस्मान्निरुच्यते।।४।। Ca.Ci.- 15

Properly functioning of *Agni* is responsible for longevity, complexion, trength, health, enthusiasm, nourishment, lustre, immunity, temperature and proper functioning of other *Agnis* (*Dhatvagni* and *Bhutagni*) .

If the functions of Agni are hampered, then that will lead to death of the person and proper functioning of Agni leads to long, healthy life.

Types of Agni

There are four types of Agni are described in Ayurveda.



Nidana of Agni Dushti

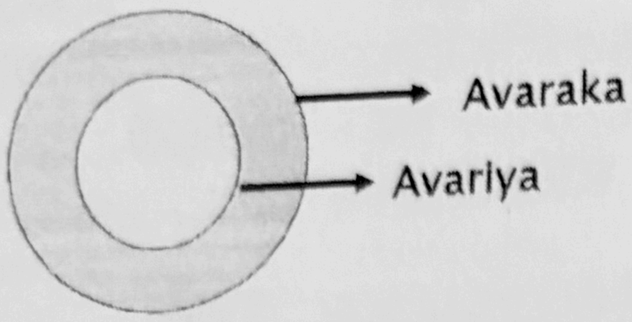
अभोजनादजीर्णातिभोजनाद्विषमाशनात्।
असात्म्यगुरुशीतातिरूक्षसन्दुष्टभोजनात्।।४२।।
विरेकवमनस्नेहविभ्रमाद्व्याधिकर्षणात्।
देशकालर्तुवैषम्याद्वेगानां च विधारणात्।।४३।। Ca. Ci. - 15

Ahojana- Ajirne atibhojana- Visamasana-Asatmya bhojana- Guru bhojana- Sita bhojana- Ati sandusta bhojana- Vireka vamana sneha vibhrama- Vyadhikarsana- Desha,ritu and kala vaishmya - Vega vidharana

AVARANA

- The word 'Avarana' means to envelop, to mask, to obstruct, to over lap or to cover.

- Entity which gets obstructed is called Avarya which obstructs the vata is AVARAKA.



Characters of Avarana

आवरकस्य तूत्सर्गतः स्वकर्मवृद्धिर्भवति, तथा आवरणेन च आवार्यः प्रकुपितो भवति तदा स्वकर्मणां वृद्धिर्भवतीति व्यवस्था; अन्ये तु आवरणीयस्य स्वकर्महानिः||
Ca. Ci. - 28/218

The dosha which enhances its karma is the avaraka, by virtue of which the avruta will have diminished functioning. So as to say, vata after its prakopa causes avarana.

Types of Avarana

Innumerable varieties of *avarana to* vata dosha are explained.
Totally 44 types of *avarana* described in ayurveda as follows:

1. *Annyonyavarana* of *vata dosha* - 20 types
2. *Doshavrita vata* - 13 types
3. *Dhatvavrita vata* - 7 types
4. *Annavrita,mutravrita, varcasavrita* - 3 types
5. *Amavrita vata* - 1 type

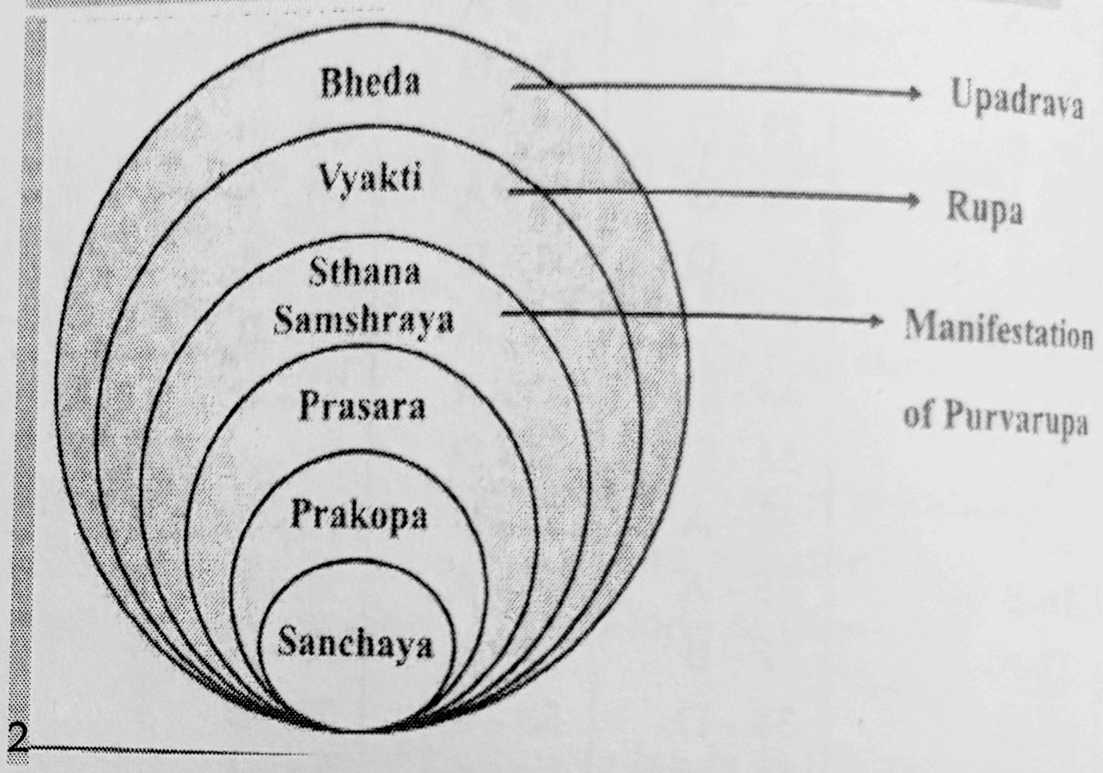
Clinical types of Avarana

1. *Avarana* of *sama vata* by *vriddha dosha* or *dushya*
2. *Avarana* of *vriddha vata* by *sama dosha* or *dushya*
3. Avarana of *vriddha vata* by *vriddha dosha* or *dushya*

Different stages of Paridhavamana dosha
The diagnosis and management in ayurveda are based on clinical observation and assessment. Diagnosis at an early stage of the disease is emphasized, when abnormalities are vague and non-specific in the body. In current times, the diseases are diagnosed when pathological, biochemical manifestations have surfaced. However, at this stage, many times it is difficult to reverse the pathogenesis and restore the health of patient.

The concept of *kriyakala* has been widely described in two separate entities as *ritu kriyakala* and *Vyadhi kriyakala.*

सञ्चयं च प्रकोपं च प्रसरं स्थानसंश्रयम् |
व्यक्तिं भेदं च यो वेत्ति दोषाणां स भवेद्भिषक् ||३६|| Su.Su.-



Paridhavamana dosha

कुपितानां हि दोषाणां शरीरे परिधावताम् |
यत्र सङ्गः खवैगुण्याद्व्याधिस्तत्रोपजायत ||१०|| S. Su.24

The vitiated *dosas* circulate throughout the body and manifest disease in a deformed *srotas.*
It may be understood by following examples:

Ritu Kriyakala

1. Sanchaya
2. Prakopa
3. Prasama

Vyadhi Kriyakala

Sanchaya, prakopa, prasara, sthanasamsraya,vyakti, bheda

Dosa Gati

Urdhwa, Adah, Tiryak

Koshtha to shakha

Movement of doshas from koshtha to shakha and vice versa

Asayapakarsa