MedCrave
Step into the World of Research
International Journal of Complementary & Alternative Medicine

Review Article

Open Access
CrossMark

Contemporary view of arishta lakshanas: prognosis based on ominous signs

Abstract

Objective: As we move into the new millennium, the biomedical sciences are advancing at a remarkable rate. The emergence of medical technology has revolutionized the way diagnosis is done in ancient times or current times. Earlier Physicians relied on sensory perceptions (Panchendriya pariksha) like seeing, hearing and touching a patient to make a diagnosis or predict prognosis. As technology has enhanced such skills are replaced with tools. Revival of such lost skills which adds on to the presently existing medical knowledge is the objective of this paper.

Data source: Ancient Ayurvedic treatises like Charaka Samhitha, Sushrutha Samhitha have contributed immensely in arriving at a diagnosis or speculating prognosis by adopting different methods of examination like Prathyaksha (sensual direct perception), Yukti (logic), Anumana (inference) etc. mentioned under the umbrella of Arishta lakshanas (Prognostic features).

Review methods: Information regarding 'Indriya sthana' was collected from ancient Ayurvedic treatises like Charaka samhita, Sushrutha samhitha sutrasthana. Electronic databases Google search and Google scholar were used to find out the relevant studies and reviews published till Jan 2021. Both the information were compared and added.

Result and conclusion: This distinctive ancient knowledge is interpreted with modern inputs to reaffirm the importance of keen observation and thorough examination. When we incorporate a thorough physical examination into our daily routine, we will be able to better identify the nature and severity of disease, which will guide future care. Hence, an attempt has been made to understand the concepts of Arishta lakshanas with a contemporary view.

Keywords: arishta lakshana, ayurveda, prognostic features

Volume 15 Issue 2 - 2022

Shubhashree MN, Chandini Chandrasekharan NP, Rajendra Paliwal, Raghavendra Naik, Sulochana Bhat

Department of Ayurveda, Central Ayurveda Research Institute, India

Correspondence: Shubhashree MN, Department of Ayurveda, Central Ayurveda Research Institute (CARI), Central Council of Research in Ayurvedic Sciences (CCRAS), Bengaluru, Karnataka, India 560109, Tel 9448016968, Email shubhathejas@gmail.com

Received: February 15, 2022 | **Published:** March 24, 2022

Introduction

Many years ago, British philosopher and Nobel Laureate Bertrand Russell said "One of the troubles of our age is that habits of thoughts cannot change as quickly as techniques, with the result that as skill increases, wisdom fades." A visible implication is the effect of technology on health care. Previously, clinical reasoning and bedside diagnosis played an important part in diagnosis. The prognosis is a forecast of how an illness will progress after it has begun. It describes the possible consequences of an illness (e.g., death, chance of recovery, recurrence) as well as the likelihood of these outcomes occurring.

Ayurveda, an ancient medical systemhas given more importance to the clinical signs &symptoms and thorough clinical examination. The focus of clinical training was on improving the strength and skill of a Vaidya in the absence of technological advances. Hence, Panchendriya Pariksha (applying 5 sense organs for diagnosis) is irreplaceable. For correct diagnosis and prognosis of the patient, the physician was required to have thorough theoretical knowledge, acute senses, fast reasoning, and extensive experience.

The same concept is also reflected by Osler, the father of modern medicine that "Medicine is learned by the bedside and not in the classroom. Let not your conceptions of disease come from words heard in the lecture room or read from the book. See, and then reason and compare and control,"[1]

Ancient treatises of Ayurveda like Charaka Samhita, Bhela Samhita, Kashypa Samhita and Harita Samhita have dealt with the predictors of life, and not just determinants or symptoms of death. Signs of imminent death and premonitory signs of sudden death are also explained in all these treatises. Prognosis of diseases and fatal signs are described on the basis of various description regarding Swapna (dream), Swara (voice), Gandha (smell), Prabha (luster), Chaya (shadow) Pratichaya (reflected shadow), Rasa (taste) and Sparsha (touch) etc.

Acharya Susrutha explains the importance of Arishta-Lakshana by giving simile. Just one can expect fruit, fire and rain by seeing flower, smoke and cloud respectively, in the same way, certain signs and symptoms appearing before or during the death of the patient is compared to Arishta-Lakshana.[2] As mentioned earlier, these Lakshanas are decoded by utilizing appropriate methods like Pratyaksha (direct perception), Anumana (inference), Yukti (reasoning/logic) Aaptopadesha (established doctrine). Acharya Vagbhata classified Arishta Lakshana into Sthaayi (definite) and Asthaayi (in-definite) Arishta-Lakshana[3] whereas Acharya Dalhana classified into Niyata Arishta (definite) and AniyataArishta (in-definite).Sometimes exacerbated Doshas manifest as powerful symptoms resembling that of Arishta but they are not Arishta, such symptoms are called Arishtabhasa which get subsided by pacifying Doshas.[2–4]

Advancement in technology might have changed perspectives of understanding of the concept of Arishta Lakshana. For instance, dysphagia was considered to be an Arishta Lakshana leading to death. However, today, with advancement in technology dysphagia caused due to Achalasia can be managed by Pneumatic dilation (PD), which is now considered to be the first line nonsurgical therapy while dysphasia caused due to tumour of oesophagus may still lead to death. Few papers have been published in the past few years in an attempt to understand the Arishta Lakshana with a contemporary understanding

focusing on medical and neurological aspects. An attempt has been made to gather substantial evidence and understand the Arishta lakshanas correlating with modern medical entities.

Review methodology

Information regarding 'Indriya sthana' has been collected from ancient Ayurvedic treatises like Charaka samhita, Sushrutha samhitha sutrasthana. Electronic databases Google search and Google scholar were used to find out the relevant studies and reviews published till January 2021 irrespective of their appearance/publication year which closely matchedwith the conditions explained as Arishtas. The key words used for searching were, "Arishta Lakshanas" 'Indriya sthana', 'Charaka indriya sthana', "Prognosis" "Diagnosis" "Ulcers" and other relevant terms. Abstracts as well as full-text, open-access papers in English were considered.

Arishta Lakshanas in relation with Vrana (ulcer)

According to modern science, an ulcer is area of discontinuity of the surface epithelium. The clinical examination of an ulcer involves general examination to note the evidence of malnutrition, TB, cardiac failure, discharge and depth of ulcer, relation to underlying structure, edge and margin, site, size, shape, surface, surrounding area, solitary or multiple, induration at the base and impairment of circulation, enlarged nodes, neurologic deficits, and so on. Similarly, Ayurveda emphasises on clinical examination based on Panchendriya pareeksha(examination based on 5 sense organs) like gandha (smell), Rupa (colour, size, structure, sides, edges) Shabda (sound), Srava(discharge). Observations and the probable causes are listed out below.

Smell of ulcer

Vrana gandha (smell) turns in to Putigandha (putrifaction/foul smell) of Mamsa (decayed meat of different animals), Pankagandha (mud).[5]

Contemporary view with poor prognostic signs related to smell

a. Transformation of ulcer in to Marjolin's ulcer, an aggressive cutaneous malignancy with foul smelling dischargeespecially with chronic fungation.[6]

b. Necrotizing carcinomatous ulcers with infection releases foul smell that of putrifaction.[7]

c. Advanced carcinomatous lesions with Maggots releases foul smell like that of putrifaction.[8] Malignant lesions tend to infiltrate in to underlying tissues through the skin, which results in the development of fun gating wounds.These ulcerative lesions further get infected by bacteria and release mal odor. This severe malodor is due to the presence of a compound called Dimethyl tri-sulphide (DMTS) and it is evident in advanced stages of breast or head-and-neck cancer (Rotten smell).[9]

Colour of vrana

Vrana varna (color) turns in to a) Shyama (bluish black to bluish purple) or b) Kumkuma (dark red reddish brown) or C) Kangushta (yellowish).

Contemporary view with poor prognostic signs related to colour

a. Malignant Melanoma, dark black in color usually turns into bluish-black or bluish-purple as the vascularity increases.

b. Squamous cell carcinoma turns into dark reddish brown due to its high vascularity and the whole ulcer may be covered with old coagulated blood or serum.[10]

c. Carcinomatous ulcer may be covered with slough as yellowish mass of dead soft tissues due to secondary infection (gram positive organisms).[11]

Discharge

In patients who are already debilitated with anorexia, breathing problems and emaciation (Pranamamsakshaya)**:** Appearance of profuse Puyarudhira Srava (bleeding and pus discharge) from the existing Vrana which is in relation with Marmasthana (vital structures).[5]

Contemporary view with poor prognostic signs related to discharge

Necrotic carcinomatous ulcer with infection is responsible for profuse discharge. Surgical excision of these ulcers along with proper antiseptic care and irradiation may help to control the discharge for some extend, but even after regular treatment condition may worse and are given up as hopeless.[12]

Presence of non-healing ulcer

Appearance of Vrana in a debilitated patient which is not healing even after treating from the initial stage.[5] Contemporary view with poor prognostic signs related to presence of non-healing ulcer.

Kennedy terminal ulcer

During the dying process, skin breakdown occurs in some patients resulting in ulcer formation. It is termed as Kennedy Terminal Ulcer(KTU) and it shows least tendency to heal. The common sites are sacrum or coccyx, but it can develop any part of the body. The clinical presentations reveal that the death will occur either within 2weeks to several months with the onset of the ulcer or even within a short period of 24-48hrs.[12]

Shape of the ulcer

Appearance of Vrana in shapes of different animals in debilitated patients.[5]

Contemporary view with poor prognostic signs related to shape of the ulcer

Kennedy Terminal Ulcers can be shaped like pear, butterfly, horse shoe etc.[13]

Presence of sound in relation with the ulcer

Appearance of Ghurghurayana (sounds like crepitus) and movement of Vata (gas) with Shabda (sound) in an existing Twak-Mamsastha Vrana (involving skin and muscle tissues).[5]

Contemporary view with poor prognostic signs related to sound of the ulcer

Gas gangrene formation in pressure ulcers which are found mainly in sacral region. Two case studies are presented here for substantiation.

a) A sacral pressure sore was developed in a 56year old woman who was suffering from paraplegia for 3weeks. After one month, crepitus was noticed from the sore on examination and X-ray revealed gas formation in the hip and right thigh. Culture and sensitivity study of the pus with malodor revealed Clostridium limosum, Staphylococcus intermedius, Enterococcus faecalis,

Pseudomonas aeruginosa, and Bacteroides fragilis. Blood culture confirmed the presence of Bacteroides fragilis. Surgical debridement was done for the patient along with high doses of antibiotics and hyperbaric oxygen. But the patient died 50days after admission.

b) In a patient of 70years old, a large decubitus ulcer was developed in the sacral area. There were presence of Crepitus in the soft tissues and gas formation was noticed in the left gluteal region. Necrosis developed in the entire Gluteus Maximus muscle. Culture revealed Bacteroides fragilis, methicillin-resistant or sensitive Staphylococcus aureus and Escherichia coli. Bacteroides fragilis was present in the blood culture. However, the patient succumbed to death on the 72nd day after admission.[14]

Arishta Lakshanas related to physical and mental status

Acute or chronic changes in the body of a debilitated patient in terms of color, smell, voice, vision, respiration and appearance of abnormal signs and symptoms are summarized below. Most of these Arishta Lakshanas are more visible in elderly patients as the general debility occurs due to ageing. Findings are listed out below.

In relation with Varna (color of the body)

a) Skin color changes to Neela/Syava (Blue and bluish black), appearance of the same color in Kara and Pada (extremities), nails, lips etc. in Athura (patients)

b) Appearance of Hareeta Varna (Greenish discoloration) over the skin in patients.[15]

Contemporary view with poor prognostic signs related to Varna (color of the body)

a. Cyanosis (central and peripheral)

a) Tetralogy of Fallot- The skin turns blue when there is too much deoxygenated blood in the arteries. If more than half of the haemoglobin is converted, oxygen transport, especially to the brain, is significantly hindered, respiratory distress is likely, and death is a possibility.[16]

b) Congenital cyanotic heart disorders are conditions that require immediate treatment and may not be reversible, necessitating the development of a pulmonary systemic fistula as a palliative measure.[17]

c) Multiple causes of cyanosis in ASD (atrial septal defect) necessitate etiology-specific treatment. As in Eisenmenger syndromes with a bad prognosis, cyanosis can occur in the presence of high pulmonary artery pressure.[18]

d) Patients with Valvular Heart Disease (VHD) are getting older, and mortality is significant in this group.In VHD, advanced age, end organ failure, and the presence of comorbidities are all linked to a lower chance of survival.[19]

e) Presence of peripheral cyanosis (feet, toes up to knee) in patients with advanced cancer is a clinical sign of impending death.[20]

Hypochromic anemia in elderly people

a) Hypochromic anemia, which was previously known as chlorosis. A green pallor is sometimes seen in people with Hypochromic Anaemia. (eg. Iron deficiency Anaemia, Thalassemia etc.)

b) Other signs and symptoms of the disease include: Shortness of breath, headaches, and a lack of appetite are some of the other symptoms of the sickness, which can be caused by a lack of B6, insufficient iron absorption, infections, or even lead poisoning.[21]

c) Anemia is linked to an increased risk of death in the elderly, as well as reduced mobility, cognitive impairment, depression, falls and fractures, hospitalization, and a lower quality of life.[22]

In relation with Swara (Voice)

a) Voice changes or hoarseness (vague, weak voice or voice similar to that of Shuka (sparrow).

b) Patient repeating the words irrelevantly, breaking speech, voice is not coming out, appearance of any unnatural sounds which is not clearly recognizable- in a debilitated and emaciated, and undernourished patient (BalaMamsa Heena).[15]

Contemporary view with poor prognostic signs related to Swara (voice)

Advanced carcinomas of head and neck (late diagnosis)

The vocal cords account for almost two-thirds of all laryngeal malignancies among which more than 90% are squamous epithelial carcinomas. Laryngeal tumors infiltrate in to vocal cords.[23] Given the different tumor sites of head and neck cancer, non-laryngeal (i.e. oral cavity, oropharynx, hypo-pharynx, and nasopharyngeal) and laryngeal cancers, the impact of the tumor and its treatment on voice and speech outcomes are predicted to vary. The tumor can impact voicing in people with laryngeal tumors, and the tumor's therapy can affect both voice and speech. Radiation to lymph nodes can also damage the sound of one's voice.[24]

Squamous cell carcinoma of the larynx that is locoregionally progressed (stage III/IV) has a high probability of local recurrence and distant metastases, and tumor volumes higher than 46cm3 have a poor prognosis.[25] Recurrent laryngeal nerve (RLN) invasion in papillary thyroid carcinoma (PTC) is one of the main predictors of poor prognosis.[26]

Falling in to delirium and unable to talk in elderly patients are end signs of dementia and impending death listed by formal caregivers.[27] Grunting of vocal cords is one of the highly specific physical signs associated with death in patients with advanced cancer.[20]

In relation with gandha (body odor)

a) Any pleasant/unpleasant odor from the body should be noted in a debilitated patient.

b) Smell of dead body or feces or urine.[28]

Contemporary view with poor prognostic signs related to Gandha (body odor).

Volatile organic compounds (VOC) are responsible for body odor

Breath, perspiration, skin, urine, feces, and vaginal secretions are all key sources of VOCs. Eg:

1. Advanced Leukemia: Breath releases sweet odor
2. Renal failure: Breath releases urine odor
3. Advanced Carcinoma of breast and head–neck cancer: Rotting odor from the affected area.[9]

b. Several caregivers have described odour as a foreboding symptom of death, particularly the odour of a dead body. Daily

independence fades progressively in dementia end-of-life instances; incontinence frequently occurs as a result of cognitive function decline, generating a foul odor in older people's living settings.[27]

In relation with sparsana (touch)

a) Body becomes cold (mainly extremities, forehead, abdomen) and stiff along with Rakta-mamsa Kshaya (debilitated & emaciated).

b) In patients with Rakta-mamsa Kshaya (debilitated & emaciated),

c) Feeling Pruthaktwa on touch (feeling separated due to laxity, looseness) among body parts like joints, extremities, back, genital areas, chest etc.[29]

Contemporary view with poor prognostic signs related to sparsana (touch)

a) Declining body temperature or hypothermia -is an impending sign of death at the end stage of dementia patients.[27]

b) Sarcopenia-Sarcopenia is a disorder marked by the progressive loss of skeletal muscle mass, strength, and function.

Sarcopenia is linked to a lower quality of life in older people and is a major risk factor for unfavorable health outcomes such disability, frailty, loss of independence, morbidity, and mortality.[20]

In relation with change in breathing pattern

The debilitated patient develops breathing problems like Atihraswa or Atidirgha Uchwasa (too short or too long breathing pattern of respiration).[30]

Contemporary view with poor prognostic signs related to breathing pattern

Change in breathing pattern is a sign of impending death in elderly patients and cancer patients

Caregivers in remote areas reported the highest incidence of symptoms falling into the breathing issue group, confirming it as a leading sign of impending mortality. Breathing pattern problems were defined as lower jaw breathing, and dyspnea was sometimes manifested as forceful breathing, panting, and shoulder breathing. These symptoms are common among patients nearing the end of their lives, with cancer, dementia and internal organ failure.[27]

b. Apnea periods, Cheyne stokes breathing are important physical signs of impending death in cancer patients. Patients who experience Cheyne-Stokes breathing will take several breaths followed by a long pause before regular breathing resumes.[20]

In relation with Netra (eyes)

Any changes in the shape of the eyes in the form of abnormal protrusion or depression of eye balls along with functional impairmentinvolving eye movements and vision.[30]

Contemporary view with poor prognostic signs related to Netra (eyes)

Exophthalmos or Proptosis and Enophthalmos associated with advanced ocular related carcinomas and metastatic carcinomas.

a) Malignancy of the para-orbital area is one of the most common reasons of unilateral proptosis. They are generally diagnosed at a later stage because to their location and non-specific symptoms. Treating such a lesion would almost certainly result in lasting facial deformity and offer little hope for disease control.[31]

b) Proptosis is most commonly caused by breast cancer, which is the most prevalent metastatic cause. The patient had unilateral proptosis due to an intra-orbital lesion, and the orbital lesion's histology suggested metastatic breast cancer.[32] The development of unilateral Proptosis is usually the first indicator of metastasis to the eye. In cases of metastases from breast cancer, bilateral involvement has been recorded.

c) Proptosis is linked to peri-orbital edoema, blurred vision, and pain. Tumor necrosis mimicking inflammatory orbitopathy causes pain, which misleads and hinders further study.[33]

d) The main tumour is usually discovered before orbital disease symptoms appear, and the typical duration between initial diagnosis and orbital metastases is 4.5 to 6.5years. The prognosis is poor, with the average breast cancer survival time being 22months after diagnosis of orbital metastases.[32]

e) Breast cancer patients with enophthalmos account for 7–24% of all cases while the breast, lung and prostate are the most frequent sources for orbital metastases, Enophthalmos is nearly always associated with metastatic Scirrhous Breast Carcinoma, with only a few cases of enophthalmos in other primary (lung and stomach).

f) The patient may have a history of Proptosis followed by progressive Enophthalmos, as well as additional symptoms such diplopia, discomfort, visual loss, and mass sensation. The invasion of the extra-ocular muscles usually results in decreased ocular motility (with positive forced reduction). A contributory component could be fat atrophy. The prognosis is typically poor, and treatment is primarily palliative.[34]

In relation with hikka, atisara and anaha

Development of clinical features like Gambheera Hikka (hiccough), Raktaatisara, or Atisara (blood mixed stools, loose stools), Anaha(bloating and distension of abdomen) in patients who are already debilitated with illnesses.[35]

Contemporary view with poor prognostic signs related to Hikka, Atisara and Anaha

iccups that are persistent and uncontrollable in palliative care patients

A. Hiccups that are persistent or intractable are a diagnostic and therapeutic problem that impact a high percentage of palliative care patients.[36]

B. Persistent hiccup in debilitated individuals, particularly after acute myocardial infarction, might stymie healing and potentially put the patient's life in jeopardy, necessitating drastic therapeutic treatments.[37]

Ischemia or myocardial infarction can be the primary cause and a key risk factor for cardiovascular hiccups. The most common cause of hiccups is inferior myocardial infarction in patients undergoing stroke rehabilitation or palliative care setting.[38] Kanibaba means "death bed faeces" in Japanese.

It's a one-of-a-kind symptom characterised by tarry stools and bloody faeces that frequently emerge in the final stages of life.[27] Fluid collection (ascites) as seen in some type of cancer, Distension due to urine can occur at the end of life.[39]

In relation with presence of Sopha (Swelling)

a) Development of Sopha (swelling) in the Udara (abdomen), later involving the Hastapada (extremities) giving rise to many ailments within a short period of time

b) Sopha with weakness in the lower limbs in an already debilitated patient.

c) Presence of Sopha (generalized) in extremities, abdomen, Guhyadesa (genital parts) in a patient with Bala Varna Heenata (debilitated and with pallor), and poor intake of food.[40]

Contemporary view with poor prognostic signs related to Sopha (swelling)

Ascites with swelling in the extremities

AL amyloidosis: Most patients with AL amyloidosis die within 1 year, usually of cardiac or renal disease.[41]

Ascites due to gastrointestinal malignancy: Although radiotherapy, immunotherapy, and other anti-tumor therapies have been tried, none have proven to be completely effective in the treatment of ascites in this individuals.[42]

Severe lower extremity oedema can be Malignant ascites is a manifestation of end-stage events in a variety of cancers and is associated with significant morbidity. The median survival time after a diagnosis of malignant ascites is 1 to 4months. An uncomfortable symptom that causes discomfort and limits mobility at the end of life.[43]

Many terminal conditions, such as chronic heart failure, advanced neurological disease, liver disease, end-stage renal disease, chronic respiratory disease, and cancer, are associated with lower limb oedema. Incorporating upper body and vaginal edema would provide a more complete picture of the scope of the condition. For example presence of scrotal swelling in patient of renal failure is bad prognostic sign.[44]

Anasarca (generalized edema): Anasarca is a term used to describe large and widespread edoema. It can be caused by a number of medical diseases, including heart failure, renal failure, liver failure, or lymphatic system difficulties. When the interstitial volume exceeds 2.5-3 litres, edoema usually becomes clinically obvious. Anasarca's prognosis is determined on the underlying cause. However, in the majority of cases, the underlying disease has gone beyond remedy by the time Anasarca appears.[45]

In relation with IndriyaJnanam (sensory perception)

Perceiving different senses which others cannot experience or which were not originally existing - in a debilitated/diseased patient.[46]

Contemporary view with poor prognostic signs related to Indriya Jnanam (sensory perception)

Hallucinations as impending sign of death

a) In near-death experiences, the temporal lobes are crucial. Because this part of the brain is involved in sensory processing and memory, aberrant activity in these lobes might result in odd sensations and impressions.

b) The fading brain concept is the most widely accepted explanation for near-death experiences. Near-death experiences, according to this hypothesis, are hallucinations induced by activity in the brain as cells begin to die.[47]

c) End-of-life dementia patients frequently exhibit Behavioral and Psychological Symptoms of Dementia (BPSD) such as delusion, anxiety, irritability, and loud yelling.[27]

d) Presence of hallucinations in Alzheimer's Disease (AD) has been repeatedly associated with more severe cognitive and functional decline, earlier institutionalization, higher burden of disease, and increased mortality. Research suggests that visual hallucinations tend to occur at the advanced stages of AD. Hallucinations were linked to a 78 percent increased risk of mortality, and those who had both auditory and visual hallucinations had a risk of death that was more than doubled.[48]

In relation with mental status

Appearance of Sambhrama (confused/anxious state), Pralapa (irrelevant speech) along with aches in different body parts like joints in a debilitated patient.[49]

Contemporary view with poor prognostic signs related to mental status

Consciousness decline towards the end of life and terminal restlessness/agitation

As many organs fail, terminal agitation may be connected to biochemical imbalances. Confusion and terminal restlessness or agitation are prevalent in advanced disease. Between 25 and 85 percent of people who are dying have symptoms related with restlessness prior to death, according to estimates. It's more common at the end of a cancer's course. One of the reasons of agitation in dying patients is uncontrolled and acute pain.[50]

At the end stage of senile dementia, decreased vital reactions, delirium, and loss of consciousness are signs and symptoms.[27]

Discussion

Acharya Charaka emphasizes the significance of thorough clinical examination before prescribing medicines. The earliest treatise of modern medicine by Hippocrates, "OnPrognostics,"defines prognosis broadly as"foreseeing and foretelling, by the side of the sick, the present, the past and the future". In the age of Hippocrates, it was recognized that effective communication between physician and patient was one of the best ways.

In modern medicine, prognosis has lagged behind diagnosis and treatment in its establishment as a central component of medical care.[51] Estimating prognosis, or the likelihood of an individual developing a specific outcome over a specific period of time, receives less emphasis in clinical practice and training than diagnosing and treating disease.[52] Unfortunately, there is currently a tendency toward greater reliance on technology and fewer possibilities for observational skills. However, in Ayurveda, prognosis has been given prime importance. If the outlook for improvement or saving a life is exceptionally bad, a patient or his or her family members may choose not to have surgery. This is especially true if, after undertaking a dangerous and painful surgery, the increase in life expectancy is minor. In some illnesses, it is widely accepted that some patients will benefit from a particular surgical technique while others will not. The physician would best be able to counsel a patient about what to expect in the course and outcome of his or her illness.[53] Knowing the prognosis can help patient or doctor decide whether it's better to try certain therapies or not, and can help patient or doctor to make vital end-of-life decisions.

It is interesting to note that the assessment was made based on sense organs in absence of modern technological advances. For instance, Gandha (body odour) was used to assess the Arishta Lakshana. It is now understood that volatile organic compounds (VOC) are emitted from the human body which reflects the metabolic condition of an individual. Infectious diseases, metabolic diseases, genetic disorders, and other diseases have particular VOCs that can be

employed as diagnostic biomarkers. Odours serve as olfactory cues, conveying information about a person's metabolic or psychological health. It's fascinating to learn about the olfactory sense and how it may be used to diagnose physical issues in individuals. Despite the potential therapeutic utility of VOCs and body odours, little effort has been done to subjectively or quantitatively elicit diagnostic criteria. Hence, an attempt has been made to put together all the ancient knowledge and the correlating contemporary views. It appears that clinical findings mentioned in 'Charaka indriya sthana' and elsewhere as Arishta Lakshanas have the potential of clinical applicability and prognostic significance in present era too. This humble attempt could help to develop observational skills among the formal caregivers in the end-of-life care settings. In terms of research, new prognostic indices based on life expectancy rather than mortality risk can be developed and validated. If we incorporate a thorough physical examination into our daily routine, we will be able to better identify the nature and severity of disease, which will guide future care.[54]

Conclusion

Diagnosis, treatment, and prognosis are the core clinical skills fundamental to the good practice of medicine. Despite the fact that prognosis is a critical component of general medicine, it is a skill that is now under-utilised. Prognosis is a lost skill that must be rediscovered and restored to its due place. It is advised that we shift away from a diagnosis-focused medical model and toward a more beneficial prognosis-focused model. Prediction of prognosis is relevant to facilitate optimal decision taking for both doctors and patients. It is rightly said that a surgeon should have lions heart (brave), eagles eyes (watchfulness) and hand of a woman (delicate)**.** At a time when the country is debating about the competency of Ayurvedic science and Ayurvedic doctors to perform surgeries, this paper gives a glimpse of in-depth knowledge mentioned in the classical texts of Ayurveda which enables a doctor to understand the prognosis of the disease.

Acknowledgment

Dr. Anjali Bharadwaj, Professor, Department of Shalyatantra, SKAMCH&RC, Bengaluru

Conflicts of interest

There are no conflicts of interest that the authors are aware of in relation to this manuscript.

Funding

None.

References

1. https://medicine.yale.edu/news/yale–medicine–magazine/the–lost–art–of–the–physical–exam
2. Susrutha. Susrutha samhitawith Nibandhasangraha Commentary. Sutrasthanam. India, Varanasi: Chowkhamba Krishnadas Academy; 2014. p. 129.
3. Ashtangahridaya V. Sareerasthana. India, Varanasi: Chowkhambha Krishnadas Academy; 2006.
4. Vinay Kumar HS, Gopikrishna S. Understanding of *Arishta* in Present Era with SpecialReference to *VarnaArishta*. *IAMJ*. 2018;6(1):1.
5. Susrutha. Susrutha Samhita, with NibandhasarasangrahaCommentary, Sutrasthanam. India, Varanasi: Chowkhamba Krishnadas Academy; 2014. p. 130–131
6. https://www.nfnn.com.au/wp–content/uploads/2019/05/Ulcers–of–the–Lower–Extremity.pdf
7. Bromley S, Freeman MD. The use of Zinc peroxide in Malignant lesions. *JAMA*. 1940;115(3):181–186.
8. Gopalakrishnan S, Srinivasan R, Saxena SK, et al. Myiasis in different types of carcinoma cases in southern India. *Indian J Med Microbiol*. 2008;26(2):189–92.
9. Shirasu M, Touhara K. The scent of disease: Volatile organic compounds of the human body related to disease and disorder. *J Biochem*. 2011;150(3):257–266.
10. Fieller N. Basics of magtrix Algebra for statistics with R. UK: Chapman and Hall/CRC; 2021. p. 155–158.
11. Sriram Bhat M. SRB'S Clinical methods in Surgery. India: Jaypee Brothers Medical Publishers; 2010. p. 84.
12. Joy E Schank. The Kennedy Terminal Ulcer– Alive and Well. *J Am Coll Clin Wound Spec*. 2018;8(1–3):54–55.
13. Kennedy Terminal Ulcers Information and Warning signs.
14. H Shibuya H, Terashi H, Kurata S, et al. Gas gangrene following sacral pressure sores. *J Dermatol*. 1994;21(7):518–523.
15. Agnivesha. Charaka Samhitawith Ayurveda Deepika Commentary of Chakrapanidatta and Vidyotini Hindi Commentary of Pt. Kasinatha Sastri. 1st Edn. The Chowkambha Sanskrit Series. India, Varanasi: Pradhama Bhaga; 1969. p. 858–862.
16. Roger P Smith. The blue baby syndromes. American scientist.
17. Giovanny R, German M, Juan C, et al. Clinical characteristics and prognostic factors of patients with cyanotic congenital cardiopathies that are taken to pulmonary system pulmonary of central type or modified Blalock Taussig, between January 2006 and June 2017: Retrospective multivariate analysis. *International journal of Vascular surgery and Medicine*. 2019;5–134.
18. Thakran V, Gupta A. Cyanosis in a patient with atrial septal defect. *J Pract Cardiovasc Sci*. 2015;1:74–75.
19. Steiner JM, Cooper S, Kirkpatrick JN. Palliative care in end–stage Valvular Heart Disease**.** *Heart (British Cardiac Society)*. 2017;103(16):1233–1237.
20. Hui D, dos Santos R, Chisholm G, et al. Clinical Signs of Impending Death in Cancer Patients**.** *Oncologist*. 2014;19(6):681–687.
21. Hayk S Arakelyan. Green Man syndrome. 2016.
22. www.sciencedaily.com/releases/2009/07/090727135521.htm
23. Reiter R, Hoffmann TK, Pickhard A, et al. Hoarseness, Causes and Treatments. *Dtsch Arztebl Int*. 2015;112(19):329–237.
24. Jacobi I, Lisette van der M, Huiskens H, et al. Voice and speech outcomes of chemoradiation for advanced head and neck cancer: a systematic review, European Archives of Oto–Rhino–Laryngology. *Eur Arch Otorhinolaryngol*. 2010;267(10):1495–1505.
25. Issa MR, Samuels SE, Bellile E, et al. Tumor Volumes and Prognosis in Laryngeal Cancer. *Cancers (Basel)*. 2015;7(4):2236–2261.
26. Chen W, Lei J, You J, et al. Predictive factors and prognosis for recurrent laryngeal nerve invasion in papillary thyroid carcinoma. *Onco Targets Ther*. 2017;10:4485–4491.
27. Hirakawa Y, Uemura K. Signs and Symptoms of Impending Death in End–of–life Elderly Dementia Sufferers: Point of View of Formal Caregivers in Rural Areas–A Qualitative Study. *J Rural Med*. 2012;7(2):59–64.
28. Agnivesha. Charaka Samhita, with Ayurveda Deepika Commentary of Chakrapanidatta and Vidyitini Hindi Commentary of Pt. Kashinatha Sastri. 1st Edn. The Chowkambha Sanskrit Series, India, Varanasi: Pradhama Bhaga; 1969. p. 864–865.
29. Agnivesha, Charaka samhita, with Ayurveda Deepika Commentary of Chakrapanidatta and Vidyitini Hindi Commentary of Pt. Kasinatha Sastri. 1st Edn. The Chowkambha Sanskrit Series. India, Varanasi: Pradhama Bhaga; 1969. p. 873

30. Agnivesha, Charaka samhita, with Ayurveda Deepika Commentary of Chakrapanidatta and Vidyitini Hindi Commentary of Pt. Kasinatha Sastri. 1st Edn. The Chowkambha Sanskrit Series. India, Varanasi: Pradhama Bhaga; 1969. p. 868

31. Keche P, Nitnaware AZ, Mair M, et al. A Study of Tumours Giving Rise to Unilateral Proptosis. *Indian J Otolaryngol Head Neck Surg*. 2013;65(Suppl 1):6–13.

32. Nambiar KR, Ajith PS, Arjunan A. Unilateral Proptosis as the initial manifestation of malignancy. *J Egypt Natl Canc Inst.* 2017;29(3):159–161.

33. Chand K, Panicker NK. Proptosis–An Unusual Presentation of Metastatic Carcinoma Pancreas. *Med J Armed Forces India*. 1998;54(4):349–350.

34. Athanasiov PA, Prabhakaran VC, Selva D. Non-traumatic Enophthalmos: a review. *Acta Ophthalmol*. 2008;86(4):356–364.

35. Agnivesha, Charaka samhita, with Ayurveda Deepika Commentary of Chakrapanidatta and Vidyitini Hindi Commentary of Pt. Kasinatha Sastri. **1st Edn.** The Chowkambha Sanskrit Series. **India, Varanasi:** Pradhama Bhaga; **1969. p.** 882

36. Jeon YS, Kearney AM, Baker PG. Review *Management of hiccups in palliative care patients. BMJ Support Palliat Care.* 2018;8(1):1–6.

37. Launois S, Bizec JL, Whitelaw WA, et al. Hiccup in adults: an overview. *Eur Resplr J*. 1993;8:583–575.

38. Yuan SM. Myocardial Ischemia Presenting With Hiccups. *J Coll Physicians Surg Pak.* 2019;29(5):469–473.

39. Esther Rantzen. End of life: The facts–A booklet for people in the final stages of life and their careers.

40. Agnivesha. Charakasamhita, Indriyasthanam, with Ayurveda Deepika Commentary of Chakrapanidatta and Vidyitini Hindi Commentary of Pt. Kasinatha Sastri. 1st Edn. The Chowkambha Sanskrit Series. India, Varanasi: Pradhama Bhaga; 1969. p. 883.

41. Melvin Lau, Richard W. Goodgame. A ManWith New Onset of Ascites and Edema. *Medscape J Med*. 2008;10(4):83.

42. Saif MW, Siddiqui IAP, Sohail MA. Management of Ascites due to gastrointestinal malignancy. *Ann Saudi Med*. 2009;29(5):369–377.

43. Rodgers S, Birkholz L, Hebert R. Treatment of lower extremity edema by subcutaneous drainage in a home hospice patient. *BMJ Case Rep*. 2013;2013:bcr2013009787.

44. Best M, Tang E, Buhagiar M. Lower–limb oedema at the end of life: how common is it? *Journal of Lymphoedema*. 2018;13(1).

45. Kattula SRST, Avula A, Baradhi KM. Anasarca. Treasure Island (FL): StatPearls Publishing; 2020.

46. Agnivesha. Charaka samhita, with Ayurveda Deepika Commentary of Chakrapanidatta and Vidyitini Hindi Commentary of Pt. Kasinatha Sastri. 1st Edn. The Chowkambha Sanskrit Series. India, Varanasi: Pradhama Bhaga; 1969. p. 873.

47. Dagnall N, Drinkwater K. Are near–death experiences hallucinations? Experts explain the science behind this puzzling phenomenon. *The Conversation*. 2018.

48. Mohamad EL HAJ, Roche J, Jardri R, et al. Clinical and neurocognitive aspects of hallucinations in Alzheimer's disease. *Neurosci Biobehav Rev*. 2017;83:713–720.

49. Agnivesha. Charaka samhita, with Ayurveda Deepika Commentary of Chakrapanidatta and Vidyitini Hindi Commentary of Pt. Kasinatha Sastri. 1st Edn. The Chowkambha Sanskrit Series. India, Varanasi: Pradhama Bhaga; 1969. p.904

50. https://pharmaceutical–journal.com/article/ld/dealing–with–the–dying–patient–treatment–of–terminal–restlessness

51. John M Thomas, Cooney Leo, Terri R Fried. Prognosis Reconsidered in Light of Ancient Insights—From Hippocrates to Modern Medicine. *JAMA Intern Med*. 2019;179(6):820–823.

52. Thomas M Gill. The Central Role of Prognosis in Clinical Decision Making. *JAMA*. 2012;307(2):199–200.

53. Robert R Hansebout, Sylvie D Cornacchi, Charlie H Goldsmith. How to use an article about prognosis. *Can J Surg.* 2009;52(4):328–336.

54. Mishra Smriti S, Kolarkar Rajesh. The Role of Arishta Parikshan in Clinical Examination. *International Ayurvedic Medical Journal*. 2020.

Citation: Shubhashree MN, Chandrasekharan CNP, Paliwal R, et al. Contemporary view of arishta lakshanas: prognosis based on ominous signs. *Int J Complement Alt Med.* 2022;15(2):108–114. DOI: 10.15406/ijcam.2022.15.00598