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**FUNDAMENTAL IDEA OF CERTAIN SIGNS AND SYMPTOMS
REPRESENTING ARISTA (NEAR FATALITY) WITH REGARDS TO
PRAMEHA (DIABETES MELLITUS)**

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ABSTRACT

Introduction: "Swasthasya Swasthya Rakshanam, Aturasya Vikara Prashamanam," or "Maintaining the normal health status of the body and curing the diseased," is the original purpose of the science of Ayurveda. A person may exhibit a variety of signs and symptoms that point to various diseases. Thorough examination of patients not only help physician to diagnose the disease but also help in planning the treatment as well as predicting the prognosis. In *Ayurveda Prameha* is generally key symptoms like Prabhoota Mutrata, which means increased frequency and volume of urination, and Avila Mutrata, which means murky urine. *Prameha* is considered as *Chirakaaleena vyadhi* (chronic disease) which is *Anushangi* [1] (recurring) in nature. It is due to vitiation of *tridoshas* (*vata-pitta-kapha*) especially *Kapha dosha* which can be considered as important components of protoplasm [2] which governs all the activities of body and also represents the physico-biological characteristics of substances created by combining distinct Panchamahabhootas, namely Akasha (space), Vayu (electrons), Teja (energy), Jala (proton), and Prithvi (neutron) [3].

Arista lakshanas are the warning signs and symptoms that death is imminent or that something fatal is close at hand. Understanding this Arista is crucial for good therapy since only when one is properly informed on the Ayu (life span) of the patient is the treatment effective. If a doctor uses Arista lakshanas to treat patients, this will have an impact on the doctor's Dhana (Money/Property), Yasha (Success/Fame), and Vidhya (Knowledge).

Aim & Objective:

To understand the basic concept of few *Arista lakshanas* in *Ayurveda*

To analyze *Arista lakshanas* in *Prameha*

Methodology: Review of literature from classic and modern Ayurvedic works, textbooks on modern medicine, reviews in journals and other online sources.

Observation & Result: The *Arista* (Fatal signs and symptoms) explained in *Ayurveda* demonstrate the *Yukti* (intellectual aptitude) of our Acharyas during those times, when significant discoveries were made even in the absence of any advanced technology help. Only an immense curiosity in studying about the human body made this feasible. It set the path for the advancement of a scientific understanding of *Arista* (Fatality) that continues to hold up.

Conclusion: It can be concluded Significant advances in technology and medicine have made it possible for us to identify illness symptoms quicker and to treat or manage the majority of fatal symptoms that were previously accounted for.

Keywords: *Arista, Fatality, Prameha*

INTRODUCTION:

This ancient Indian system of medicine explained several diseases and its treatment which is due to the enormous contribution from the *Acharyas* (Scholars) and their followers. Several unimaginable and marvellous observations and examination findings like differentiating layers of skin and naming them without presently available tools like microscope, diagnosing the disease based on mere observation Similar to how Pipeelika attracted to the mutra in *Prameha* (Ants attracted to urine in diabetes/urinary disorders), this shows a desire to comprehend the human body and illnesses.

In *Ayurveda Roga Pariksha* (Examination of disease) and *Rogi Pariksha* (Examination of diseased i.e patient) plays a vital role in diagnosis. These examinations are done basically for understanding *Ayushaha*

Pramana Jnana Hetu and *Bala Dosha Pramana Jnana Hetu* [4] i.e to estimate the life span and also to realize the severity of the dosha i.e defect. These doshas (*Vata, Pitta & Kapha*) are three endogenous factors which govern the body activities right from the conception till death.

Examination of the disease includes knowing the *Nidana* (Etiology), *Purvaroop* (Premonitory symptoms), *Samprapti* (Pathogenesis), *Roopa* (Clinical features), *Upashaya* (Relieving factors), *Upadrava* (Complications) and *Arista* (Features of death).

The signs and symptoms which indicates the oncoming death, the signs and symptoms indicating near fatality are called as *Arista* (Features of death) *lakshanas*. This is beautifully explained with a simily i.e Just as the flowers indicate the next coming fruit,

the smoke indicate fire and the cloud indicate rain similarly manifestation of *Arista lakshanas* indicate nearing death [5]. It is also explained that there is no death without *Arista lakshanas* and there will be no life after their appearance.

We should always keep in mind that all these above scenarios of *Arista* were explained during ancient time centuries before were neither modern sophisticated diagnostic equipments were available nor any emergency medicine was developed or even discovered.

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OBSERVATION & RESULT:

As many of the diseases lands up in the stage of *Upadrava* (Complication) due to factors like improper treatment, abstaining from the treatment, nature of the disease etc even before the appearance of *Arista lakshanas*.

Basically *Upadrava* (Complication) can be understood as the signs and symptoms which can occur during the course of the disease, associated with the main disease or even during the end phase of the disease which basically is of 2 varieties like *Sthoola* (Major) and *Anu* (Minor).

Minor complications may get resolved with maximum efforts form the physician but usually major complications lands up in formation of *Arista* in maximum incidences. By considering the fact initially certain complications especially in *Prameha* (Diabetes) is explained further.

Upadrava of Prameha in brief:

Prameha(Diabetes) in its aggravated state the degree of *Dushti* (Vitiation) of *Medas* (Adipose) goes on increasing along with *Sarva Dhatu Kshaya i.e* body building components resulting in *Pravrudha Vata Avastha* (Exagerrated vata) producing various *Upadravas* (Complication). *Madhumeha* (?IDDM) can be taken as a final stage of *Prameha* (Diabetes Mellitus) or a stage of *Prameha* (Diabetes Mellitus) reached to complication. *Upadrava* (Complication) like *Makshika Upasarpana* (Flies getting attracted), *Alasya* (*Laziness*), *Mamsopachaya*, *Pratishyaya* (Rhinorrhea), *Shaiithilya* (Looseness of body), *Arochaka* (Loss of taste), *Avipaka*(indigestion), *Kapha Praseka*(Salivation), *Chardi* (Vomitting), *Nidra* (Sleep), *Kasa* (*Cough*) and *Swasa* (*Dyspnoea*) are of *Kaphaja* in origin. *Vrushanayo Avadaranam* (Cracking of scrotum) *Vasti Bheda* (Cutting pain in bladder), *Medra Toda* (Penile pain), *Hrit Sula* (Cardiac pain), *Jwara* (Pyrexia), *Atisara* (Dirrohea), *Daha* (Burning sensation), *Moorcha* (Giddiness), *Pipasa* (Polydipsea), *Pandu Roga* (Anaemia), *Pitta*

Vit Mutra Netrata (Yellowish discoloration of bowel, urine and eye) comes under *Pittaja* and *Vataja* includes *Hrut Graham* (Catching pain in cardiac region), *Anidra* (Insomnia), *Sthambha* (Stiffness), *Kampa* (Tremor), *Shula* (Pain) and *Baddhapurishatwam* (Constipation) [6].

Complications of Diabetes Mellitus in

brief: Hyperinsulinaemia may increase the insulin action through other pathways potentially accelerating diabetes related conditions such as atherosclerosis. Islet function may be worsened by chronic hyperglycaemia causing glucose toxicity and elevation of free fatty acid levels and dietary fat causing lipotoxicity. The metabolic syndrome, the insulin resistance syndrome or syndrome x are the terms used to describe a constellation of metabolic derangements that includes insulin resistance, hypertension, dyslipidaemia, central or visceral obesity, Type2 DM and accelerated cardiovascular disease. Diabetic ketoacidosis and hyperglycemic hyperosmolar state are acute complications of diabetes. Both disorders are associated with absolute or relative insulin deficiency, volume depletion and acid-base abnormalities. Ketosis results from a marked increase in free fatty acid release from adipocytes, with a resulting shift toward ketone body synthesis in the liver [7]. Chronic complications can be further divided into the vascular and non vascular

complications. The vascular complications are further subdivided into microvascular which includes retinopathy, neuropathy, nephropathy and macrovascular complications like coronary artery disease, peripheral arterial disease and cerebrovascular disease. Non vascular complications include problems such as gastroparesis, infections and skin changes. The risk of chronic complications increases as a function of the duration of hyperglycaemia. Since Type2 DM has a long asymptomatic period of hyperglycaemia many individuals have complications at the time of diagnosis. Despite long standing DM some individuals never develop nephropathy like complications suggesting that there is a genetic susceptibility for developing particular complications. Although chronic hyperglycaemia is an important etiologic factor leading to complications of DM, the mechanism by which it leads to such diverse cellular and organ dysfunction is unknown. To explain this, four prominent theories have been proposed. One theory is that increased intracellular glucose leads to the formation of advanced glycosylation end products (AGEs) via the non enzymatic glycosylation of intra and extracellular proteins. AGE's have been shown to cross link proteins eg: collagen, extracellular matrix proteins accelerate atherosclerosis, promote glomerular dysfunction, reduce

nitric oxide synthesis, induce endothelial dysfunction and alter extracellular matrix composition and structure. The serum level of AGEs correlates with the level of glycemia and these products accumulate as glomerular filtrate rate declines. A second theory is based on the observation that hyperglycaemia increases glucose metabolism via the sorbitol pathway. Intracellular glucose is predominantly metabolized by phosphorylation and subsequent glycolysis. But when increased some level of glucose is converted to sorbitol by the enzyme aldose reductase. Increased sorbitol concentration alters redox potential, increased cellular osmolarity, generate reactive oxygen species and likely leads to other types of cellular dysfunction. A third hypothesis proposes that hyperglycaemia increases the formation of diacylglycerol leading to activation of protein kinase C. Among other actions protein kinase C alters the transcription of genes for fibronectin, type IV collagen, contractile proteins and extracellular matrix proteins in endothelial cells and neurons. A fourth theory proposes that hyperglycaemia increases the flux through the hexosamine pathway, which generates fructose-6-phosphate, a substrate for O-linked glycosylation of proteins such as endothelial nitric oxide synthase or by changes in gene expression of transforming growth factors beta or plasminogen activator inhibitor105.

Ophthalmologic complications include progressive diabetic retinopathy and clinically significant macular oedema [8].

Renal complications are produced by the effects of soluble factors (like growth factors, angiotensin II, endothelin, AGEs), hemodynamic alterations in the renal microcirculation (glomerular hyperfiltration or hyperperfusion, increased glomerular capillary pressure) and the structural changes occur in the glomerulus (increased extracellular matrix, basement membrane thickening, mesangial expansion and fibrosis). Smoking accelerates the decline in renal function [9].

The most common form of diabetic neuropathy is distal symmetric polyneuropathy, frequently present with distal sensory loss. Symptoms include a sensation of numbness, tingling, sharpness or burning that begins in the feet and spreads proximally. Diabetic polyradiculopathy is a syndrome characterized by severe disabling pain in the distribution of one or more nerve roots accompanied by motor weakness. DM related autonomic neuropathy can involve multiple systems including the cardiovascular, gastrointestinal, genitourinary, sudomotor and metabolic systems. The most prominent GI symptoms are delayed gastric emptying (gastroparesis) and altered small and large bowel motility (constipation and diarrhoea). Gastroparesis may present with symptoms of anorexia, nausea, vomiting, early satiety

and abdominal bloating. Genitourinary dysfunction includes cystopathy, erectile dysfunction and female sexual dysfunction. Study conducted related to cardiovascular system in Type1 and 2 DM reveals a marked increase in peripheral arterial disease, congestive heart failure, coronary artery disease, myocardial infarction and sudden death due to silent ischemia. Risk factors for macrovascular disease in diabetic individuals include dyslipidaemia, hypertension, obesity, reduced physical activity and cigarette smoking [10].

Foot ulcers and infections are also a major source of morbidity in individuals with DM. Disordered proprioception causes abnormal weight bearing while walking and subsequent formation of callus or ulceration. Motor and sensory neuropathy leads to abnormal foot muscle mechanics and to structural changes in the foot like hammer toe, claw toe deformity, prominent metatarsal heads, charcot joint. Autonomic neuropathy results in anhidrosis and altered superficial blood flow in the foot, which promote drying of the skin and fissure formation. Peripheral arterial disease and poor wound healing impede resolution of minor breaks in the skin, allowing them to enlarge and to become infected. Individuals with DM have a greater frequency and severity of infection. The reasons for this include incompletely defined abnormalities in cell mediated immunity and phagocyte

function associated with hyperglycaemia, as well as diminished vascularization. Hyperglycemia aids the colonization and growth of a variety of organisms. Complications of urinary tract infections include emphysematous pyelonephritis and cystitis with frequent bacteriuria. Diabetic individuals have an increased rate of colonization of staphylococcus aureus in the skin folds and nares [11].

Depression and eating disorders, including binge eating disorders, bulimia and anorexia nervosa appear to occur more frequently in individuals with Type1 or Type2 DM [12]. Here are some examples to analyse interesting *Arista lakshanas* mentioned by our *Acharyas* in different contexts of diseases and probable correlation in present developed medical field.

1. "*Satatam Spandamananam Shareeradeshanam Aspandanam* [13] - Absence of Pulsation in pulsating areas.

This can be interpreted by considering the pulsations of arteries. We know that pulse is a waveform felt regularly over an artery due to expansion and elongation of the arterial walls passively produced by pressure changes during ventricular systole and diastole.

Ex: Radial pulse, Brachial pulse, Carotid pulse etc.

Normal rate: 60-100/min

Bradycardia: Rate <60/min Pathologically in Complete AV block which may be life threatening if not taken care.

The most common causes for the weak or absent pulse are the cardiac arrest and shock which definitely indicates future death due to non availability of tools for investigating and also no medications available.

2. “Nityoshmanam Sheetebhavaha” [14]- Coldness in body which otherwise remains warm.

Conditions which can cause coldness either in extremities or entire body pathologically like

Head injury

Near drowning

Alcohol intoxication

Drug overdose-Sedatives and hypnotics

Severe Hypothyroidism

Shock

Raynaud’s disease etc

If we go through above diseases most of them are life threatening which can cause instant death.

3. “Viparyayena Yo Vidhyaat Gandhanam Sadhvasadhutam

Na Va Taan Sarvasho Vidhyattam Vidhyat Vigha Ayusham” [15]

Conditions were one perceives the smell good as bad or vice versa and sometimes fails to perceive the smell at all. Some of the diseases like severe Alzheimer’s, Multiple sclerosis, head injuries, Huntington’s chorea

and malignant growths can lead to these conditions.

4. “Naanaa Pushpopamo Gandho yasya bhaati Divaanisham

Pushpitasya Vanasyeva Naanadruma lataavataha....” [16]

If the person is emitting odour/smell of different flowers throughout from his body then he is going to die soon is what stated in our *samhitas*.

Presently we can try to correlate it to Diabetic Ketoacidosis which is one of the complication of DM were person will be emitting fruity smell (Acetone) especially from his breath.

Diabetic Ketoacidosis (DKA) is almost exclusively a complication of Type-1 DM. It can develop in patients with severe insulin deficiency combined with glucagon excess. Failure to take insulin and exposure to stress are the usual precipitating causes.

It remains a major medical emergency still now. The average mortality in the developed countries is 5-10% and is higher in the elderly [17]. Most of the deaths are due to delay in diagnosis and treatment. Symptoms include:

Polyuria, weight loss, nausea, vomiting, leg cramps, dehydration, cold extremities, air hunger (Kussmaul breathing), Smell of acetone, hypothermia, coma in 10%.

Dhoota vishayaka: If the physician come across *dhoota* carrying water or a near a pond, than it is *arista* for a *pramehi*.

Swapna Vishayaka: If a *pramehi* dreams about drinking a different varieties of *snehas* in the company of *chandalas* he dies of *prameha*. If he dreams of drinking water, it is *arishta* [18].

A *Mandotsahi*, *Atisthoola*, *Atisnigdha*, *Mahashani* falls as a prey to the disease at the earliest [19].

If the *pramehi* is suffering from all *upadravas* with *pidaka*, *Atiprasruta mootra* and if the disease is *gaadha* (deep seated), then the patient will die [20].

A *Snata*, *Anulipta gatra pramehi*, attracting *Makshika* (insects) is sure to die [21].

A person who likes *Abhyavaharana* and hates *Snana* and *Chankramana* (walk) will fall victim to the disease *prameha* just like the *Needadruma* which attracts the *Grudra pakshi* to build its nest [22, 23].

5. If patient of *Rajyakshma* which is commonly compared to Tuberculosis have further *balakshaya* (weakness), loss of appetite, rhinitis & increased cough.

6. Observation of black coloured stool is the sign of fatality as explained in *samhita*.

Now we can correlate it with the term *Malena* which is nothing but the black tarry stool due to upper GI bleeding. Definitely it might be fatal sign during those days when no micro examination of stool or endoscopy etc. techniques present.

Several other signs and symptoms which indicate fatality has been explained like:

-Fatality related to dreams dreamt by patient.

-Premonitory signs and symptoms indicating fatality

-Complexion and lustre of individual indicating fatality

-Attitude, dressing style etc. of bystander indicating fatality

-Abnormally placed vessels indicating fatality etc.

Interestingly and for my surprise I had come across with few cases till date were I had found exactly same explanations of fatality related to dreams as mentioned in *samhitas* out of which one I want to share here:

A male patient aged around 60yrs admitted with complaints of multiple, scaly, brownish and itchy skin lesion throughout the body since 35yrs. He was diagnosed as patient of Psoriasis and underwent treatment form all system of medicine since the onset. He had no relief from complaints and the lesions further was getting worsened with increased itching hampering his all routines. The fatality related to dream mentioned in *Kusta* (Psoriasis & other skin diseases) is-If he dreams of getting himself anointed with ghee and offering oblations to flameless fire. When patient was asked by me of any kinds of dream what he used to get he revealed the same as explained above which supported the *samhita* version.

CONCLUSION:

Arista (Fatal signs & symptoms) explained in *Ayurveda* proves the *yukti* (intellectual capacity) of our *Acharyas* during those days were even without any developed technological support several discoveries were done. This was possible only by keen interest in learning human body. It paved a way for developing such a scientific understanding of *Arista* (Fatality) which still proves to be right. Improvement in technology and medicine helped us in earlier recognition of disease and to make previously explained fatal signs and symptoms as curable or manageable now.

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