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Dr. Rupashri Nath

Ph.D. Scholar, PG Department of
Roga nidana and Vikriti vigyana,
National Institute of Ayurveda,
Jaipur, India

Dr. Sisir Kumar Mandal

Assistant Professor, PG
Department of Roga nidana and
Vikriti vigyana, National Institute
of Ayurveda, Jaipur, India

Correspondence:

Dr. Rupashri Nath

Ph.D. Scholar, PG Department of
Roga nidana and Vikriti vigyana,
National Institute of Ayurveda,
Jaipur, India

An analytical study of different clinical presentation of Diabetes mellitus: Ayurveda perspective

Rupashri Nath*, Sisir Kumar Mandal

Abstract

Introduction: Ancient *ayurveda* scholars have opined the nomenclatures of all the diseases may not be available in transcript but these can be managed through the *daushika* concern. Similarly, diabetes mellitus is a metabolic disorder, which has not mentioned in classical texts but it can be diagnosed based on *yukti pramana*. Present study aimed to analyze the various diagnosed cases of diabetes mellitus through the light of *ayurveda* pathogenesis. **Methodology:** Six diagnosed cases of diabetes mellitus admitted in IPD of NIA hospital with different clinical symptoms were critically analyzed with the help of *ayurveda* principle of diseases pathology. Secondary data from various published journal were also utilized to draw the conclusion. **Result and observation:** Study interpreted case no.1-presented with drug history and diabetes can be diagnosed as *dushi visha*. Case no.2 presented with overweight and diabetes can be diagnosed as *medo vaha srota dusthi*. Case no.3 itching and blister in external genitalia can be diagnosed as *vrishana kacchu*. Case no.4 burning and tingling sensation over the extremities can be diagnosed as *purvarupa of prameha*. Case no.5 multiple joint pain with family history of diabetes can be diagnosed as *beeja dosha*. Case no.6 diabetes with fever, vomiting, burning micturation etc. can be diagnosed under *upadrava of kaphaja and pittaja prameha*. **Discussion and Conclusion:** Present study revealed laboratorial investigation could provide only a supportive media for proper diagnosis and treatment. For serving, the novel healing approach of *ayurveda* diagnosis of diseases through *ayurveda* is a prime phenomenon.

Keywords: *Ayurveda* diagnosis, *Prameha*, *Dosha*.

INTRODUCTION

Hetu (aetiology), *linga* (sign and symptoms), *oushadha* (drug and therapy) are the *trisuotra* (principles) of *ayurveda*^[1]. Without the knowledge of *hetu* (cause of a disease) and *linga* (sign and symptoms), the insinuation of *oushadha* (drug and therapy) is not feasible. In the present Era, many novel diseases are emerging with varied features; all of these has not mentioned in our compendium but based on *dosha*, *dushya*, *srota*, *agni* etc. (tools for diagnosis of diseases in *ayurveda*) we can make out the disease as well as management. Ancient *ayurveda* scholars have opined the nomenclatures of all the diseases may not be available in transcript but these can be managed through the *daushika* concern. A disease is caused due to specific causative factors followed by the pathogenesis with the materialization of sign and symptoms and if it is ignored the complication is the next fate^[2]. Likewise, diabetes mellitus is a metabolic disorder, which has not mentioned in our classical text. However, we may diagnose the condition based on *yukti pramana* (logical inference). According to the modern science, the diagnoses of diseases are depending on laboratorial investigation and the nomenclature is depending on some basic elements. On the other hand, to reveal this process, *nidana* (cause), *purvarupa* (prodromal symptoms), *rupa* (sign and symptoms), *upashaya* (association) and *samprapti* (pathogenesis) are considered as the basic tools. The diagnosis and nomenclature is depends on *bala*, *prabhava*, *udhaba sthana*, *dosha*, etc^[3]. Present study aimed to analyze the various diagnosed cases of diabetes mellitus through the light of *ayurveda* pathogenesis.

METHODOLOGY

Detailed history of diagnosed cases of diabetes mellitus with different presentations admitted in IPD of NIA hospital of was taken and scrutinized with the various pathological phenomenon of *ayurveda* mentioned in classical texts. Secondary data resources from various journal and internet sources were also analyzed to draw a solid discussion.

MATERIALS AND METHODS

Result and Observation:

Case no. 1: A 60-years-old woman with a 3-year history of diabetes complained for worsening dyspnoea with walking one third of a block and a persistent cough for last 15 days. She was suffering from chronic obstructive pulmonary disease (COPD) since age 55. Her type 2 diabetes was under control with diet and exercise. Physical exam: revealed an anxious look with blood pressure 130/70mm Hg, pulse 120/minute and regular, respiratory rate 24/minute, and weight 180 lb. Lungs cleared to percussion, but wheezing was present bilaterally.

Pathological pathway:

Drug taken repeatedly for long period → Drug acts as a *dushi visha* (*vyabichari nidana*)

↓
Situated in different *srota* in dormant stage

↓
Vitiates the particular *srota* in appropriate time

↓
Makes several pathological conditions

Case no.2: A 48-years old woman came to doctor for getting advice about her weight gain. She was married, had two children in school and worked full time as a bookkeeper. She used to take breakfast and dinner at home and lunch at various locations. Clinical profile: Age: 48 years, Weight: 178lbs or 81kg, Height: 5'3", BMI: 31.5, anaemia, jaundice, cyanosis etc. all were absent. No such family history regarding obesity. Laboratorial investigation: Glucose monitoring last HbA_{1c}: 8.2%, Fasting blood sugar: 158 mg/dl, Random: 219mg/dl, Lipid Profile Total: 230 mg/dl, LDL:145mg/dl, HDL:45 mg/dl, Triglycerides: 200 mg /dl, Kidney Profile Creatinine :1.0 mg/dl, Micro-albuminuria:

Pathological pathway:

Intake of *nidana*

↓
Meda vaha srota is vitiate

↓
Formation of *Abadha* (unformed) and *badha* (formed) *meda* in excessive amount.

↓
**Several disease phenomenon's
Like *Meda roga*, *Prameha purvarupa* etc**

Case no.3: A 40 years Muslim male farmer, belonging to lower socioeconomic status from Ramgar, Rajasthan, came to OPD, NIA, with complains of itching and blister formation over the external genitalia for last 15days. This condition was gradually progressive. On Personal history: Appetite was less, Bowel: not passed regularly, solid and yellowish in colour, Bladder- regular, frequency normal, pale yellowish in colour, Sleep: disturbed, 6 hours /day. On physical examination: Face was anxious, Pallor, jaundice, cyanosis, edema, clubbing etc. was absent, Weight- 75 kg. Height-52", BP was 120/80 mm of Hg, pulse rate was 80 beats/min, regular, low volume; Tongue examination revealed coated. On Systemic examination, Genito-urinary system showed mild tenderness, scratching marks with discharge and blister formation over the scrotum. G.I. system showed mild tenderness over the right hypogastric region. On routine laboratorial investigation: CBC within

Cyanosis was not present. Laboratorial investigation: ABG: 7.46; pO₂:60; pCO₂:40; O₂ Sat: 88%. Chest X-ray: flat diaphragms hyper inflated no infiltrates. Spirometry: Forced vitality capacity (FVC):3.2; Forced expiratory volume in 1 second (FEV₁): 1.4. Last glycosylated hemoglobin measured, 1 month ago was 6.8%. She has started albuterol and begun on a course of prednisone at 40 mg /day for 3 days, tapering over 2 weeks. On day 3, she reported that her blood glucose level is 350 mg /dl at 4:00 p.m. She was repeatedly taking this medication for last 5 years when such types of problems used to come.

Ayurveda interpretation: Present case in *ayurveda* can be diagnosed under the concept of *dushi visha*.

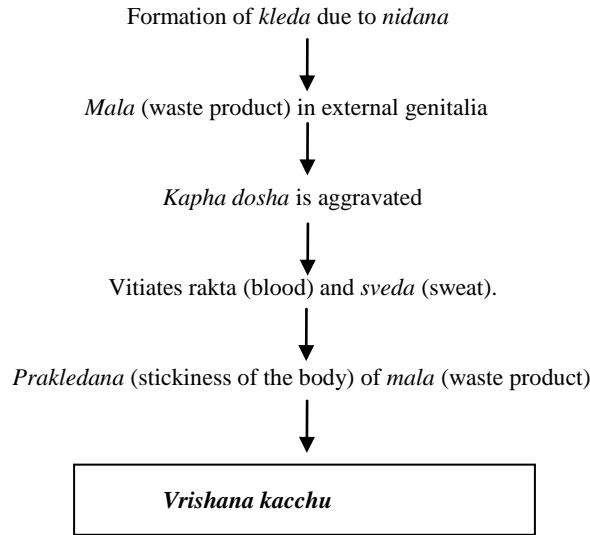
negative, Liver Function ALT: normal, AST: normal, Blood pressure- 130/82 mm of Hg, Cardio vascular condition normal, Eye Exam: Normal, Foot Exam: normal pulses and sensation. Life style: No such compliance with meal plan. Limited activity and rare exercise. Medications: For blood glucose: none. For other conditions: Antihistamines for nasal allergies, Non steroidal Anti-inflammatory Drugs (NSAIDs) for joint pain.

Ayurveda interpretation: Present case in *ayurveda* can be diagnosed under the concept of *Medo vaha srota dusthi*.

normal limit, HbA_{1c}: 6.7%, FBS was 131 mg/dl, and PPBS was 183 mg/dl on 22/8/16. Urine examination showed on physical character; colour –pale yellow, sugar- trace, 10/9/2016. In addition, he had diagnosed by the doctor of allopathic system of medicine as a type 2 diabetes mellitus.

Ayurveda interpretation: Present case in *ayurveda* can be diagnosed as *vrishana kacchu*.

Pathological pathway:

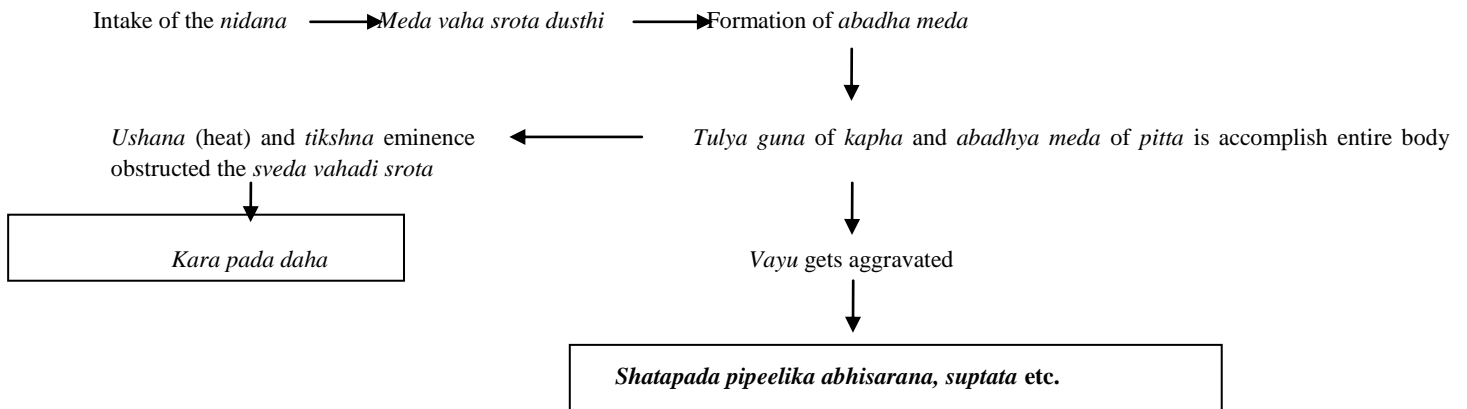


Case no.4: The patient was slightly overweight, sedentary 68 years old male with a 15 year history of impaired glucose tolerance. He stopped smoking and alcohol 16 years ago. The patient retired from a sales job three years ago. Other medical problems were hypertension and hypercholesterolemia, which were treated with an angiotensin converting enzyme inhibitor and astatine respectively. The patient had no such drug allergies. His glucose in tolerance was discovering with routine laboratory testing. He referred for diabetes education, learned home glucose monitoring and followed a diet and exercise program suggested by the diabetes educator approximately four months ago; suddenly he noticed a burning and tingling in his hands and feet. The patient also felt that his sense of balance was diminishing but thought it was merely a sign of aging and was reluctant to see a doctor. His

physical examination was unremarkable except for some hyperesthesia of hands and feet as well as decreased vibratory sensation. The patient had no open lesions over his foot and hand, intact protective sensation for both feet. Reflexes were normal and pedal pulses were palpable. On examination: slight ataxia was present. The patient had no clinical signs of depression. Laboratory studies revealed normal except for fasting blood glucose of 136mg/dl. His HbA_{1c} was 7.6%, up from 7.1% six months earlier. A complete blood count, lipid profile, liver screening and a renal profile were normal, as well as prostate specific antigen (PSA) test too revealed normal. Serum levels of B₁₂, T₃, T₄ thyroid stimulating hormone (TSH) were within normal limits.

Ayurveda interpretation: Present case in *ayurveda* can be diagnosed under the concept of *Purvarupa* of *Prameha*.

Pathological pathway:

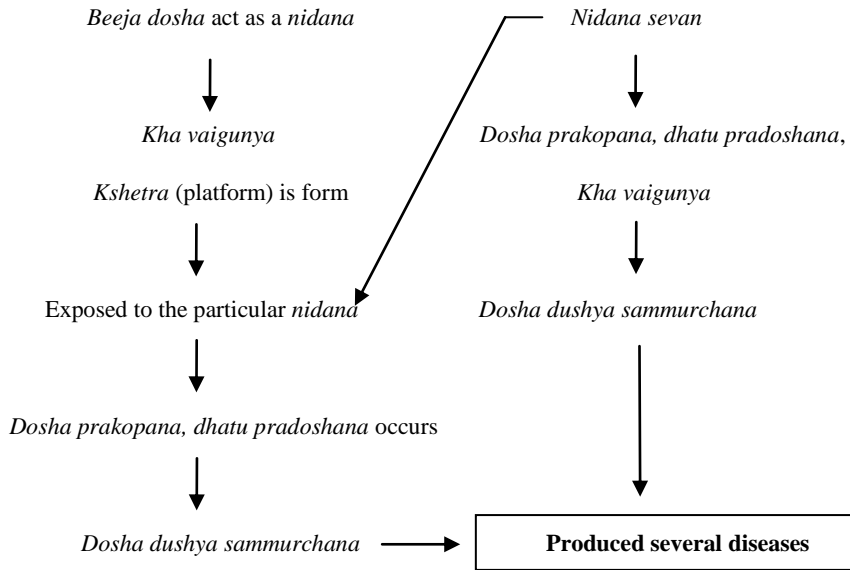


Case no.5: A 60 years Hindu female house wife, belonging to middle socioeconomic status from Phulera, Rajasthan, admitted in IPD, bed no.58/KC, case no.5304, room no.16, complains that pain in multiple big joints with morning stiffness (1/2 hours) for last 6 years associated with pain in upper abdomen for last 6th month and cough for last 4-5 days. This condition was gradually progressive. She had past H/O of Hysterectomy at 20 years back. Parents, brother sisters all were suffering from the disease Diabetes mellitus. On menstrual history menopause was occurs at 20 years beck. On Personal history : Appetite was less, Bowel: 1 days alternately, hard, yellowish in colour, Bladder-regular, frequency increases, yellowish in colour, foul smell with burning micturation, Sleep: disturbed, 3-4 hours /day. On Physical examination: Face was anxious , Pallor, jaundice, cyanosis, edema,

clubbing etc. was absent , Weight- 84 kg. Height- 5'2", BP was 140/80 mm of Hg, pulse rate was 88 beats/min, regular, low volume; Tongue examination revealed moist. On Systemic examination, Locomotors system showed no such deformity over the joints, swelling in left knee joint and left wrist joint, veins were prominent over the both leg, crepitation was present in both knee joints and pain radiates from low back region to towards leg. G.I. system showed mild tenderness over the right hypochondriac region and liver was palpable. Laboratorial investigation: USG: Enlarged and fatty liver on 11/9/2016. FBS: 200 mg/dl and PPBS 210 mg/dl on 17/11/2016 and now FBS is 192 mg/dl on 17/12/2016.

Ayurveda interpretation: Present case in *ayurveda* can be diagnosed under the concept of *Beeja dosha*.

Pathological pathway:

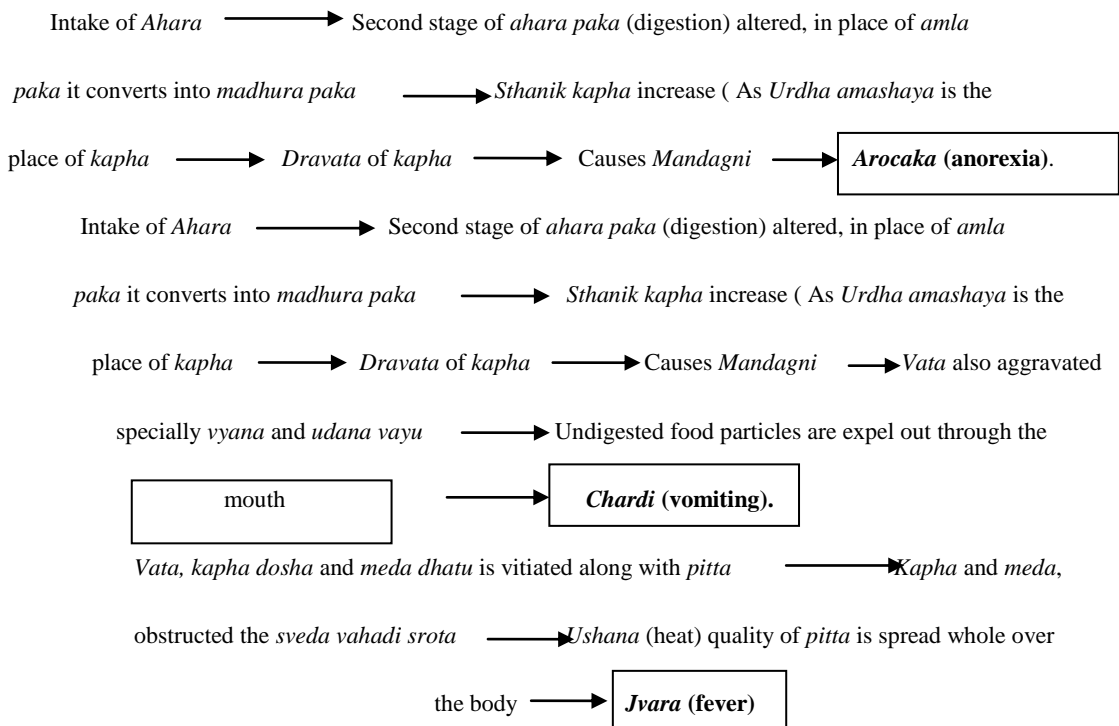


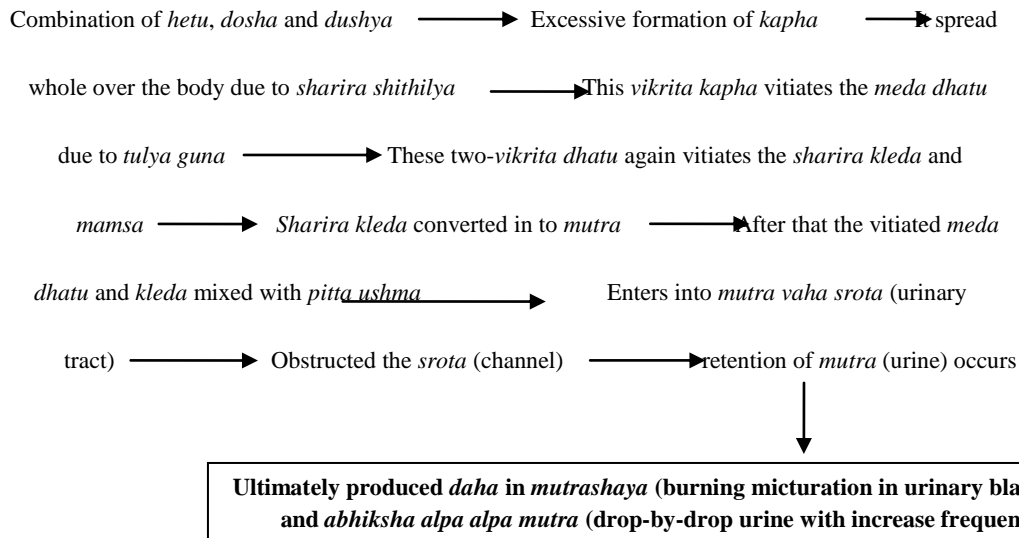
Case no.6: A 50 years Hindu male labour, belonging to lower socioeconomic status from Ramgar, Rajasthan, was admitted in IPD, bed no.155/KC, with complaints of raising body temperature with chill and rigor for last 8 months associated with loss of appetite and vomiting for last 20 days. This condition was gradually progressive. He had past H/O of Hypertension and Diabetes mellitus for last 5 years. On Personal history : Appetite was less, Bowel: regular but solid with foul smell and yellowish in colour, Bladder- regular, frequency increases and passes drop by drop, pale yellowish in colour with burning micturation, Sleep: disturbed, 3-4 hours /day. On Physical examination: Face was anxious, Pallor, jaundice, cyanosis, edema, clubbing etc . was absent , Weight- 65 kg. Height- 6, BP was 130/80 mm of Hg, pulse rate was 100 beats /min, regular, low volume; Tongue examination revealed

dehydrated and coated. On Systemic examination, Genito-urinary system showed mild tenderness over the right hypogastric and low back region. G.I. system showed mild tenderness over the right hypochondriac region and liver was palpable. Laboratorial investigation: CBC within normal limit, blood urea was 45.5 mg/dl, HbA_{1c}: 7.9%, FBS was 326 mg/dl, Liver function test showed S.G.O.T- 54.6 mg/dl S.G.P.T- 39 mg/dl and others were within normal limit on 7/11/16. Urine examination showed on physical character colour –pale yellow, sugar- trace, on microscopic examination showed Pus cell 7-8 HPF, Epithelial cells -2-3 HPF, USG showed Hepatomegaly on 9/11/2016.

Ayurveda interpretation: Present case in ayurveda can be diagnosed under Upadrava of Kaphaja and Pittaja Prameha.

Pathological pathway:





DISCUSSION

In the case no.1, patient used to take various synthetic drugs repeatedly for long period. Such type of drugs acts like a *dushi visha*. As we know *dushi visha* is a type of *visha* which can gradually manifests in the body within a stretched period [4]. In context of *dushi visha* it is mentioned that due to its low strength it does not act immediately in the formation of disease, like *vyabhichari nidana*. It has situated in different *srota* in dormant stage. After a certain period, it is vitiates the particular *srota* and makes several pathological conditions in our body [5]. Therefore, the condition has occurred due to effect of *dushi visha* (case no.-1)

One important physiological perceptible fact mentioned in *ayurveda* i.e. *dhatu poshana nyaya*. In case no.2, some pathological changes are find out in *dhatu poshana nyaya*. Normally *sapta dhatu* gets nutrition by sequential order but in this case, the other *dhatu* like *rasa* (plasma); *rakta* (blood) etc. are not nourished properly only the *meda dhatu* (fat tissue) take maximum nutrients [6]. This changes are occurring due to vitiation of *meda vaha srota* and this *srota* (channel) is directly vitiates by the *nidana* (etiological factor) like food habit, life style, limited activity, rare exercise etc. and produced *abadha* (unformed) and *badha* (formed) *meda* which is excessive in amount and instigate several disease phenomenon like *Meda roga*, *Prameha purvarupa* etc [7]. Therefore, it has diagnosed as *Meda vaha srota dusthi* (case no.-2).

In case no.3, it was observed due to *nidana* (etiological factor) there was formation of *kleda* (stickiness) by which the *mala* (waste product) accumulated into the external genitalia. From which the *kapha dosha* was annoyed and vitiates the *rakta* (blood) and *sveda* (sweat). *Rakta* (blood) and *sveda* (sweat) both have *drava* (liquid) quality by which *prakledana* (stickiness of the body) of *mala* (waste product) occurs very easily and the external genitalia becomes wet in nature. Thus, there was excessive *kandu* (itching), formation of blister and discharge [8]. Therefore, it has been diagnosed as *Vrishana kacchu* (case no.-3).

In case no.4, all the *tridosha* (basic elements of body) and *meda* (fat), *asra* (blood), *sukra ambu* (body fluid), *vasa* (muscle fat), *lasika* (lymph), *majja* (bone marrow), *rasa* (plasma), *oja* (vital strength) and *mamsa* (muscle) are responsible factors for the causation of this condition [9]. In this condition *abadha meda* (unformed) was produced due to *Meda vaha srota dusthi*. This *srota* was vitiates by *tridosha* (basic elements of body) due to intake of the *nidana* (etiological factor) like food habit, addiction etc. Due to *tulya guna* of *kapha* and *abadha meda*, there was obstruction of *sveda vahadi srota* and eventually the *ushana* (heat) and *tikshna* eminence of *pitta* accomplished entire body

and produced *daha* (burning sensation). Due to *vyadhi prabhava* the *daha* was utmost comprehended in *kara pada* (hand and feet) [10]. In this case particular pathological process “*rasa sveda vahini srotamsi pidhaya...*” perhaps takes place. When there is obstruction *vayu* gets aggravated and produced numerous symptoms like *shatapada pipeelika abhisarana* (some hyperesthesia of both hand and feet), *suptata* (decreased vibratory sensation) etc. Thus, this presented condition can be diagnosed under the *purvarupa* of *Prameha* (case no.-4).

In case no.5, it was observed from her history that the conditions were occurred due to *beeja dosha*. Scholars of ancient *Ayurveda* described regarding the concept of *beeja dosha*. In such case, persons are more susceptible for formation of disease as *kha vaigunya* takes pro position in the pathogenesis of diseases progress due to presence of *beeja dosha* in body. The basic component of *roga* is *dosha prakopana*, *dhatu pradoshana* and *kha vaigunya* [11]. As we know, *nidana* (etiological factor) is a responsible factor for *kha vaigunya*. In this case *beeja dosha* act as a *nidana* (etiological factor). By which there is already prepared a platform for formation of diseases. On the other hand, in every person have some weak points in body from very beginning. In this case, *dosha* (basic elements of the body) remains inactive in the *dhatu*s and when a preferable condition appears then it may be flourished and produced several diseases, as a seed remains dormant on the soil until suitable time when it germinates [12]. It is the case of *vyadhi sankar*. As there is an already prepared *kshetra* (platform) for the progression of disease pathogenesis, therefore if persons exposed to the particular *nidana* (etiological factor) pathological process of particular disease occurs promptly. Based on this phenomenon case no.5 was diagnosed under the effect of *Beeja dosha* (case no.-5).

The ailment, which is associated with a disease and is manifested after the manifestation of the main diseases, is called *upadrava* (complication) [13]. In case no.6, patients was presenting the features like *jvara* (fever), *arocaka* (anorexia), *chardi* (vomiting), *daha* (burning micturation), and *abhiksha alpa alpa mutra* (increased frequency of urine and urinary incontinence) etc. All of these are the *upadrava* (complication) of *Kaphaja* and *Pittaja Prameha* [14]. In this case all the symptoms has generated under the following pathogenesis. *Prameha* is a *tridoshaja vyadhi*, in this disease the *vahu drava sleshma* is the primary *dosha* [15]. There is alteration in physiology of *ahara paka*, the second stage of *ahara paka* is converted into *madhura paka* instead of *amla paka* and *sthanik kapha* become increased in *amashaya*. Specifically *drava* (liquidity in nature) quality increased and altered the *agni* (digestive fire) from which *arochaka* (aversion of food) is

manifested. In *Kaphaja Prameha*, *vata*, *pitta* and *meda dhatu* get vitiated specially along with *kapha*^[16]. *Dravata* of *kapha* vitiates the *agni* (digestive fire) as well as *vata* (specially *vyana* and *udana vayu*) those are responsible factor for *cestha* (movement) which expels the undigested food particles through the mouth^[17]. In *Pittaja prameha*, *vata*, *kapha dosha* and *rakta*, *meda*, *dhatu* are vitiated along with *pitta*^[16]. Due to *tulya guna* of *kapha* and *meda*, there is obstruction of *sveda vahadi srota*, hence the *ushma* (heat) quality of *pitta* is stretched all over the body and produced *jvara* (fever). Due to combination of *hetu*, *dosha* and *dushya* there is excessive formation of *kapha* that may spread all over body due to *sharira shithilya*. Further, this *vikrita kapha* vitiates the *meda dhatu* due to *tulya guna* and together vitiates the *sharira kleda* and *mamsa*. This vitiated *kleda* converted into *mutra* (urine). After that the vitiated *meda dhatu* and *kleda* mixed with *pitta ushma* enters into *mutra vaha srota* (urinary tract) and obstructs the *srota* (channel). Therefore retention of *mutra* (urine) occurs which ultimately produced *daha* in *mutrashaya* (burning micturation) and *abhiksha alpa alpa mutra* (drop by drop urine with increased frequency)^[18]. Therefore, case no.6 has diagnosed as *upadrava* condition of *Kaphaja* and *Pittaja Prameha* (case no.-6).

CONCLUSION

So from the above case study it is clear that understanding of pathophysiology of diseases is very essential. Without the knowledge of *pancha nidana* (etiological factor), diagnosis is relatively impossible. Only based on laboratorial investigation diagnosis is not possible properly. Laboratorial investigation can provide only a supportive media for a proper diagnosis and treatment.

No conflict of interest: Nil

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