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## EDITORIAL

### *Researches in Traditional Systems of Medicine*

Herbal medicines form an important part of most traditional systems of medicine. Majority of the world's population in developing countries still relies on herbal medicines to meet their health needs. They are often used to provide first-line and basic health service to people living in remote and poor areas. Even in areas where modern medicine is available, the interest on herbal medicines has been increasing rapidly in recent years because of many reasons. The significant contribution made by herbal medicines to human health has led to increased official and commercial interest.

Very recently, Centre for Disease Control and Prevention (CDCP) warned that the world is staring at a post-antibiotic era when common infections will no longer have a cure. In addition; drastic changes in life style, increased pollution and industrialization; global population is affecting with various kinds of life style diseases. Unless addressed, the mortality and disease burden from these problems will continue to increase. Though the conventional systems of medicine have ample of drugs to treat such pathologies; these drugs are known to develop certain adverse reactions. Considering these limitations of conventional drugs, emphasis on botanical sources for drug discovery and development of new effective molecules has been realized globally. Vinblastine, Reserpine, Atropine, Artemisinin, Plumbagin, Morphine, Codeine, Curcumin, Berberine, Glycyrrhizin, Digoxin etc. are a few such molecules discovered by contemporary scientists and are being used in conventional system of medicine.

The Sustainable Development Goals (SDGs) of UNDP are the universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and

prosperity. The SDGs work in the spirit of partnership and pragmatism to make the right choices now to improve quality of life, in a sustainable way, for future generations. They provide clear guidelines and targets for all countries to adopt in accordance with their own priorities. WHO also emphasized their priority areas by focusing upon Non-Communicable Diseases (NCDs) and actioned towards providing leadership and evidence base for prevention and control of NCDs and disabilities. Besides NCDs; Antimicrobial Resistance (AMR) that is threatening the effective prevention and treatment of an ever-increasing range of infections caused by bacteria, parasites, viruses and fungi is another concern of WHO. New resistance mechanisms are emerging and spreading globally, threatening ability to treat common infectious diseases, resulting in prolonged illness, disability, and death.

These two areas including NCDs and AMR can be answered by approaches of Ayurveda. Many herbs used in Ayurveda are classed as rejuvenators. They are a rich source of substances that have several therapeutic properties like hepato-protective, nephro-protective, cardio-protective, chemo-preventive and other effects. They are reported to be potential on various systemic disorders of hepatic, cardio-respiratory, endocrinal, neuro-psychiatric, gastrointestinal systems. They are also found to increase quality of life in individuals suffering with various forms of NCDs etc. These can form basis for a healthy and curative nutrition also. Such experiences provide a substantial basis for their safe and effective use. They also can be supplemented as an adjuvant to the main stream of contemporary drugs in specified pathologies. Herbs with Rakshoghna, Jantughna and Krimighna properties can be explored as potential anti-microbial drugs with broad spectrum activities. Under public health outreach activities; Ministry of AYUSH also focussed upon reducing the

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incidences of NCDs.

As most of the diseases have multi-factorial causation, drugs as a whole (against extract of herbs) acting on a number of targets simultaneously is likely to be more effective. Traditional formulations are multi-component, thus have special relevance in such cases. Ayurveda with its armamentarium can answer and provide promising results in many of such situations. Ayurvedic drugs are a big ray of hope and can play crucial role in restricting complications, and improving quality of life of the suffering population.

This rise in the demand for herbal products has given rise to various forms of abuse and adulteration leading to bad reputation to the system. Hence, quality control and validating clinical efficacy for establishment of desired biological activity of herbal medicines becomes an essential aspect that needs to be concentrated. Well

documented observational studies, case reports, case series, pharmaco-epidemiological studies will help in generating evidences on the actual usefulness of herbal formulations in the pathologies afflicting the global population.

Herbs as potential source of therapeutics has attained a significant role in health system all over the world not only in the diseased condition but also as potential material for maintaining health. All such efficiencies of herbal preparations in providing long lasting cure for specific diseases need to be compared, documented and published in standard journals, rather than obscure journals. This is the right time to think and discuss about the impact of Ayurveda practices in maintaining health and preventing chronic diseases. We take the opportunity to appeal all researchers to communicate their researches in the form of Case Reports that disseminate the actual potential of Ayurveda.

Prof Tanuja Nesari

Editor-in-Chief

Journal of Ayurveda Case Reports (AyuCaRe)

All India Institute of Ayurveda,

Gautam Puri, Mathura Road,

Sarita Vihar, New Delhi – 110076

E-mail: tnesari@hotmail.com

## Ayurvedic Management of Diabetic Retinopathy

Krishna Kumar V\*, Manjusha R<sup>1</sup>, Vaghela DB<sup>2</sup>, Deepak K Pawar<sup>2</sup>

Regional Ayurveda Research Institute for Eye Diseases, Central Council for Research in Ayurvedic Sciences, Lucknow;<sup>1</sup> Dept. of Shalakya Tantra, All India Institute of Ayurveda, New Delhi; <sup>2</sup>Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar

\*Correspondence: Email : drkkempran@gmail.com, Mobile: +91 9496329408

### ABSTRACT

#### Keywords:

Diabetic Retinopathy,  
Madhumehajanya timira,  
Nasya, Takradhara.

Diabetic Retinopathy (DR) is an important complication of Diabetes Mellitus (DM). Currently available conventional treatments for DR have certain limitations; considering which options from alternative resources are being searched. In Ayurveda, DR can be compared with *Madhumehajanya timira*, for which treatment modalities have been mentioned elaborately. In this current case of *Madhumehajanya timira*, Ayurvedic treatment was done along with conventional treatment. A male patient of 61 years visited the OPD complaining of defective distant and near vision since six months. Based upon the history and clinical features, he was diagnosed to be suffering from Non Proliferative Diabetic Retinopathy (NPDR) with maculopathy in both eyes. He underwent one sitting of Intra Vitreal Triamcinolone Acetonide injection in both eyes before starting Ayurvedic treatment. *Deepana* (~stomachic) and *Pachana* (~digestant), *Mridu virechana* (~mild therapeutic purgation), *Shiro virechana* (~eliminative nasal medication) and three sittings of *Pratimarsha nasya* (~nasal medication of mild dose) with *Durvadi ghrita* and *Takradhara* (~pouring medicated buttermilk over the scalp) were the treatment procedures adopted in this case. He was prescribed with *Rasayana yoga* and *Pratimarsha nasya* with *Durvadi ghrita* for three months. At the end of the treatment; there was improvement in near vision and visual acuity in both eyes. Ophthalmoscopy revealed reduction in exudates and hemorrhages. HbA1C was reduced to 7.4 from 10.3 after treatment. The observations reveal that Ayurvedic approaches are helpful in managing Diabetic Retinopathy successfully.

**Introduction:** Diabetic Retinopathy (DR), the leading cause of visual disability in diabetics, is an important complication of diabetes mellitus (DM).<sup>[1-5]</sup> Conventional treatment for DR is LASER Photocoagulation, which stops the leakage of blood and fluids into the retina,

but doesn't break the root pathogenesis of DR.<sup>[6]</sup> The use of intra-vitreous pharmacotherapies in the last decade has revolutionized the management of Diabetic Macular Edema (DME) as well as Proliferative Diabetic Retinopathy (PDR).<sup>[7]</sup> These costly procedures improve the vision, but are to be applied at regular intervals and are not affordable by a common man. Hence, it is high time to address the management aspects of DR to develop affordable medical care.

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DR and other diabetic ophthalmopathies, which lead to poor vision, can be taken under the concept of *Madhumeha* leading to *Timira*.<sup>[8]</sup> Ayurvedic treatment targets upon countering pathogenesis from the root level. In case of *Madhumehajanya timira*, it aims at nourishing capillaries enabling the self-maintenance of the system.<sup>[9]</sup> In this case of DR, Ayurvedic treatment was done along with conventional medicines.

## CASE REPORT

A 61 years old, male reported to the OPD on 16-03-2016 complaining of gradual painless diminution of distant as well as near vision since six months. He was a known diabetic and hypertensive and was on oral hypoglycemic and anti-hypertensive medicines since eight years. On his visit to the OPD, glycemic control was poor. He was on Metformin (500mg) twice daily before food and Amlodipine (5mg) twice daily after food. He had history of Left Ventricular Failure that was treated elsewhere by allopathic physicians. He was a chronic smoker, had a habit of smoking for the past 40-years (about 10 cigarettes per day), which he stopped only about a month before the visit to the OPD. There was no family history of DM or DR. Patient had defective vision for distant and near objects and was diagnosed as a case of Non Proliferative Diabetic Retinopathy (NPDR) with maculopathy in both eyes during September 2015. He underwent one sitting of Intravitreal Triamcinolone Acetonide (ITA) injection on 22.02.2016 and on 03.04.2016 for right and left eyes respectively. He visited to the OPD enquiring Ayurvedic solutions for his condition. Ayurvedic treatment was started on 28.05.2016 after taking his consent.

**Clinical findings:** Patient was afebrile. Pulse was 78/minute. Respiratory Rate was 18/minute and Blood Pressure was 150/90 mmHg. No abnormality was noticed in the functioning of respiratory, circulatory or digestive systems.

**Visual examination:** In both eyes distant visual acuity by Snellen chart was 6/60. After ITA, distant visual acuity remained 6/60 in both eyes. Best corrected visual acuity in both eyes was 6/24. Correction for right eye was -1.00 spherical/-2.50 cylindrical at 90 degree. Correction for Left eye was -1.00 spherical/-2.00 cylindrical at 90 degree. Pin hole correction without spectacles in both

eyes was 6/24. Near vision with and without spectacles was N36 in both eyes.

**Ocular examination:** Eyelids, conjunctiva, sclera, cornea and anterior chamber were normal in both eyes. Pupils were of normal size and of normal reaction. Both lens had immature senile cataract (Grade- Cortical -1 by LOCS [Lens Opacities Classification System] III). Intra Ocular Pressure [IOP] by Schiotz Tonometry was 14.6 mmHg in both the eyes. Direct Ophthalmoscopy revealed Non Proliferative Diabetic Retinopathy (NPDR) with maculopathy in both eyes. RAPD (Relative Afferent Pupillary Defect) and Iris neovascularization was absent in both eyes.

**Dashavidha pareeksha (~Tenfold Examination):** *Prakriti* of the patient was *Vatapitta*. *Pitta pradhana tridosha vikriti* such as *Urdhwaga raktapitta* (intra-retinal haemorrhages) was observed during the analysis. *Satwa* (~psyche), *Sara* (~excellence of tissues), *Samhanana* (~compactness of organs), *Ahara shakti* (~power of food intake and digestive functions), *Vyayama shakti* (~power of performing exercises), *Satmya* (~suitability) and *Pramana* (~measurements of body organs) of the patient were of *Madhyama* (~moderate) level.

**Ashtavidha pareeksha (~Eightfold Examination):** *Nadi* (~pulse), *Mutra* (~urine) and *Shabda* (~voice) were *Sadharana* (~normal). Bowels were regular, *Jihwa* (~tongue) was *Anupalepa* (~non-coated), *Sparsha* (~touch) was *Anushna sheeta* (~normal temperature), *Akriti* (body built) was *Madhyama* (~moderate) and *Drik* (vision) was *Heena* (~diminished vision).

**Sroto pareeksha (~Examination of body channels):** *Raktavaha srotas* (~blood circulating channels) is involved in this manifestation and the pathology is *Vimarga gamana* (~flowing abnormal or in opposite directions) that possibly manifested as haemorrhages in retina.

**Diagnostic assessment:** Fasting blood sugar was 126mg/dl, PPBS was 210 mg/dl and HbA1C was 10.3. Urine sugar was nil. Serum triglycerides were 75mg/dl. Other hematological findings were within normal limits. Fundus examination was done that confirmed the diagnosis of NPDR in both eyes [Fig. 1-2]. Optical Coherence Tomography [OCT] reported severe Diabetic



**Table 1: Therapeutic interventions adopted**

	Procedure	Medicine used	Duration	Posology
1.	<i>Deepana pachana</i>	<i>Shiva kshara pachana churna</i> <sup>[10]</sup>	Seven days	Six grams with hot water twice daily before food
2.	<i>Koshtha shodhana</i>	<i>Avipattikara churna</i> <sup>[11]</sup>	Next five days	Five grams with hot water at 6 AM
3.	<i>Shiro virechana</i>	<i>Anu taila</i> <sup>[12]</sup>	Next seven days	Six drops instilled in each nostril at 9 AM
4.	<i>Nasya</i>	<i>Durvadi ghrita</i> <sup>[13]</sup>	After <i>Shiro virechana</i> , a gap of one week was given followed by <i>Nasya</i> for seven days	Six drops instilled in each nostril at 9 AM
5.	<i>Takra dhara</i>	<i>Siddha takra</i>	Next 15 days	30 minutes at 9 AM
6.	<i>Shamana yoga</i>	<i>Rasayana yoga</i>	Started after <i>Koshtha shodhana</i> and was continued along with other procedures for three months	Three grams of powder with two grams of <i>Madhu</i> and five grams of <i>Ghrita</i> at bed time
7.	<i>Pratimarsha nasya</i>	<i>Durvadi ghrita</i> <sup>[13]</sup>	Started along with <i>Takra dhara</i> and was continued for three months	Two drops instilled in each nostril at 5 PM

macular oedema with sub-foveal fluid in both eyes [Fig. 3].

**Therapeutic intervention:** The interventions adopted in the present case are placed at Table-1.

At the end of this treatment procedure; *Nasya* for further seven days and *Takra dhara* for fifteen days was repeated in the next two months. Two follow-ups were done with an interval of 15 days.

## RESULTS:

There was improvement in near vision and visual acuity in both eyes [Table - 2]. Fundus examination revealed reduction in exudates and hemorrhages in both eyes [Fig. 4-5]. HbA1C was reduced to 7.4 from 10.3 after three months of treatment. Visual acuity was maintained during the follow-up period.

## DISCUSSION:

The line of management in *Timira* includes *Snehana* (~oleation), *Rakta mokshana* (~blood-letting), *Virechana*

(~therapeutic purgation), *Nasya*, *Anjana* (~ocular ointment), *Shiro basti* (~retention of medicated oil over scalp), *Basti* (~therapeutic enema), *Tarpana* (~retention of ghee over eyes), *Lepa* (~medicated paste) and *Seka* (~ocular irrigation) that are to be followed repeatedly<sup>[14]</sup> of which *Snehana*, *Virechana* (*koshta shodhana* and *shiro virechana*), *Nasya*, *Pratimarsha nasya* and *Takra dhara* were followed in this case. It is said that, *Snehana* is to be preceded by *Rookshana* (~dehydrating) in conditions of *Kaphamedo vridhi*.<sup>[15]</sup> Considering *Pitta pradhana vikriti* of the patient, *Koshtha shodhana* was done with *Avipattikara churna*. *Koshtha shodhana* expels out accumulated *Kleda* (~moisture) from the body, which possibly helps in reduction of macular oedema. Moreover, as the features of *Madhumehajanya timira* are similar to *Urdhwaga raktapitta*; *Koshtha shodhana* was used as *Pratilomahara chikitsa*.<sup>[16]</sup> *Snehana* was done by administering *Rasayana yoga* along with *Ghrita*. *Rasayana yoga* [Table - 3] is an experience based powdered herbo-mineral combination being practiced at Institute for Post Graduate Teaching and Research in Ayurveda, Jamnagar. *Madhu* was added to *Rasayana yoga* as an adjuvant considering its *Chakshushya* (~congenial to eyes) properties. Different components of *Rasayana*

**Table 2: Improvement in vision**

	Right Eye		Left Eye	
	Before Treatment	After Treatment	Before Treatment	After Treatment
DV	6/60	6/24	6/60	6/24
BCVA	6/24	6/12	6/24	6/12
PH	6/24	6/18	6/24	6/18
NV	N36	N8	N36	N8

DV- Distant Vision; BCVA- Best Corrected Visual Acuity; PH- Pin Hole Correction; NV- Near Vision

**Table 3: Ingredients of Rasayana yoga**

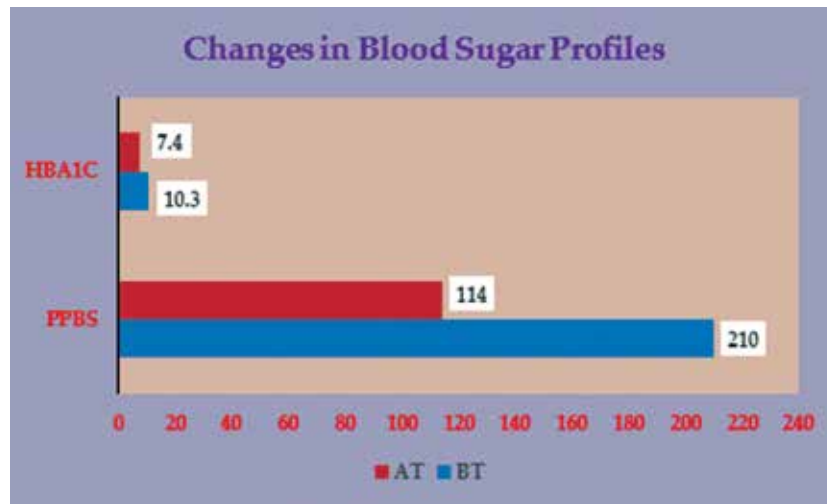
	Drug	Botanical Name	Part Used	Proportion
1	Haritaki	<i>Terminalia chebula</i> Retz.	Dried pericarp	1 part
2	Amalaki	<i>Embilica officinalis</i> Gaertn.	Dried pericarp	2 parts
3	Vibhitaka	<i>Terminalia bellerica</i> Roxb.	Dried pericarp	1 part
4	Haridra	<i>Curcuma Longa</i> Linn.	Dried rhizome	1 part
5	Guduchi	<i>Tinospora cordifolia</i> [Thunb] Miers.	Dried stem	1 part
6	Musta	<i>Cyperus rotundus</i> Linn.	Dried rhizome	1 part
7	Yastimadhu	<i>Glycyrrhiza glabra</i> Linn.	Dried root	1 part
8	Vasa	<i>Adathoda vasica</i> Nees.	Dried leaves	1 part
9	Swarna makshika	-	Calcined copper pyrite	0.041 part



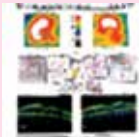

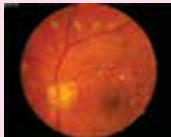
**Table 4: Ingredients of Siddha takra**

	Drug	Botanical Name	Part used	Proportion
1	Musta	<i>Cyperus rotundus</i> Linn.	Dried rhizome	1 part
2	Amalaki	<i>Embilica officinalis</i> Gaertn.	Dried pericarp	1 part
3	Yashtimadhu	<i>Glycyrrhiza glabra</i> Linn.	Dried stem	1 part
4	Daru haridra	<i>Berberis aristata</i> DC.	Dried stem	1 part
5	Lodhra	<i>Symplocos racemosa</i> Roxb.	Dried stem bark	1 part
6	Vasa	<i>Adathoda vasica</i> Nees.	Dried stem, leaves	1 part
7	Chandana	<i>Santalum album</i> Linn.	Dried heartwood	1 part
8	Utpala	<i>Nymphaea caerulea</i> Sav.	Dried flower	1 part

25 gms of powder of the ingredients numbered 1 to 8 of above added in one litre of buttermilk and one liter of water, mixed thoroughly, kept overnight, filtered in the morning and used in the procedure of Takra dhara.

Graph 1: Changes observed in blood sugar profiles



				
Fig.1: Fundus photo Right eye before treatment. Red arrow-Hemorrhage, Yellow arrow-exudates	Fig. 2: Fundus photo Left eye before treatment. Red arrow-Hemorrhage, Yellow arrow-exudates	Fig. 3: OCT Right and Left eye before treatment. Severe DME with sub-foveal fluid was noticed	Fig. 4: Fundus examination of Right eye after treatment showing reduced hemorrhage and exudates	Fig. 5: Fundus examination of Left eye after treatment showing Reduced hemorrhage and exudates

yoga possesses *Pramehaghna* property.<sup>[17-20]</sup> Possibly, this combination might have caused reduction in blood sugar and changes in HbA1C [Graph 1].

*Rasayani daurbalya* (~weakness of vascular channels) is the basic pathogenesis in DR and *Rasayana yoga* might help in strengthening vascular channels and prevent further progression of disease. *Shiro virechana* was done with *Anu taila* owing to its properties of *Indriya sroto pravesha* (~permeating into minute channels).<sup>[21]</sup> *Nasya* was done with *Durvadi ghrita*, that is *Raktapitta hara* and may help in absorption of intra retinal haemorrhages.<sup>[22]</sup> *Takra dhara* with *Siddha takra* [Table - 4] is selected as it has got special indication in *Netra rogas* (~eye diseases).<sup>[23]</sup> The reduction in macular oedema and hemorrhages may be attributed to drugs present in *Siddha takra* like *Chandana*, *Vasa*, *Utpala* and *Lodhra* that can pacify *Shopha* (~inflammation) and *Raktapitta*.<sup>[24-27]</sup> The improvement in near vision may be due to reduction

in macular oedema. *Pratimarsha nasya* strengthens visual acuity (*drishtibala*) by doing *Sroto shodhana* (maintaining the functioning of ocular structures).<sup>[28]</sup> This might be the reason why the visual acuity was maintained in the follow-up period also.

Patient was using conventional anti-diabetic and anti-hypertensive drugs throughout these days of Ayurvedic management. No adverse events or drug-drug interactions were noticed during the course of treatment and follow-up period too. This reveals that the conventional and traditional drugs concomitantly used in this case are not interacting with each other.

## CONCLUSION:

Thus, it can be concluded that Ayurvedic approaches are helpful in managing complications like Diabetic Retinopathy. This study emphasizes on the importance

of integrated approach in healthcare. Considering such beneficial activities of Ayurveda approaches; there is a need to undertake collaborative researches to generate evidences at larger scale in the management of Diabetic Retinopathy.

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## *Picchabasti and Nilotpaladi yoga in the management of Ulcerative colitis*

Ravi Dabas, Sunil Gupta, AC Kar

Department of Vikriti Vigyan, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, UP, India

\*Correspondence: Email : karanukul@rediffmail.com, Mobile: +91 9415381727

### ABSTRACT

#### Keywords:

Ulcerative colitis,  
*Raktatisara*,  
*Nilotpaladi yoga*,  
*Piccha basti*.

Ulcerative Colitis (UC) is a chronic inflammatory bowel disease, which pursues a protracted relapsing and remitting course. Inflammation invariably involves the rectum (proctitis) and may spread proximally to involve sigmoid colon (procto-sigmoiditis) and in some cases, it involves whole colon (pancolitis). The major symptom of ulcerative colitis is blood in stools. Currently there is no medical cure and Ayurveda treatment approaches are helpful in such diseases. A male patient of 27 years old complaining of bleeding per rectum and colicky pain in abdomen visited the OPD. Earlier medical examinations diagnosed him to be suffering from UC. He was on allopathic medicines since three years with remissions and exacerbations in the condition. Due to resemblance of the signs and symptoms; it was compared with *Raktatisara* and accordingly the case was treated. *Nilotpaladi yoga* with Goat milk along with *Piccha basti* was administered for a month, which resulted in complete remission of signs and symptoms. The report of sigmoidoscopy also showed positive findings. This reveals that Ayurveda treatment modalities can play a significant role in such conditions where successful treatment facilities are minimal in other medical systems.

**Introduction:** Ulcerative Colitis (UC) is an inflammatory bowel disease, which can persist for years. Incidences of ulcerative colitis are increasing at an alarming rate due to erroneous dietary habits and faulty lifestyle.<sup>1</sup> Studies reported that prevalence rate of ulcerative colitis is 44.3 per 100000 inhabitants in Punjab and in other parts of North India, which is not much less than that reported from Europe and North America.<sup>2</sup> UC causes rectal bleeding and mucus discharge, sometimes accompanied by tenesmus. In severe cases; anorexia, malaise, weight loss and abdominal pain occur, and the patient becomes toxic with fever, tachycardia and signs of peritoneal

inflammation.<sup>3</sup> The prevalence of age of onset of UC is mainly between 15 and 30 years and second peak prevalence occurs between the age of 60 and 80 years. The male to female ratio for ulcerative colitis is 1:1.<sup>4</sup> The prevalence of UC is increasing at an alarming rate and allopathic line of treatment including administration of steroids in the form of oral high dose of prednisolone and enemas etc. is not proved to be effective in the management and puts a huge burden on the health of the patient.<sup>5-6</sup> It possesses a big challenge for medical health professionals due to its high morbidity and mortality. The highest mortality is during the first years of disease and in long duration due to risk of colon cancer.<sup>4</sup> Hence, there is a need for other modes of treatment that can manage such conditions satisfactorily. Ayurveda described *Raktatisara* (~haemorrhagic diarrhoea), which

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has symptoms similar to ulcerative colitis i.e. *Shula* (~pain in abdomen), *Gudapaaka* (~burning sensation in rectum) and *Trishna* (~excessive thirst).<sup>7</sup> In this current study, *Nilotpaladi yoga* with *Piccha basti* have been used in the management.

## CASE REPORT

A 27 years old hindu, male, married, farmer by occupation visited OPD on 06<sup>th</sup> Feb, 2017 complaining of bleeding per rectum associated with mucus, abdominal pain while taking meal and generalized weakness since 2013. There was no positive family history. Patient had frequent habit of eating spicy, oily and outside junk food.

Colonoscopy and Esophago-gastro duodenoscopy reports confirmed that the patient is suffering from severe diffuse gastritis and ulcerative pancolitis.

He was being managed with daily oral Mesalazine (4.8 g) and Prednisolone (40mg) and Hydrocortisone (Cortenema) rectal enema during bed time for last three years. This treatment didn't provided much relief in his signs and symptoms.

On general examination; no pallor, icterus, oedema,

**Table- 1: Blood investigation reports before treatment**

Parameters	Date
Hb (g/dl)	13.3
RBC (mill/microl)	4.88
TLC (microlite)	5800
Neutrophils (%)	50
Lymphocytes (%)	36
Eosinophils (%)	11
Monocytes (%)	3
HBsAg	Non-reactive
Hepatitis C Virus	Negative
HIV	Negative

clubbing were present. No lymph nodes were palpable. Blood pressure was 90/60 mmHg, pulse rate was 68/min and Respiratory rate was 20/min.

**Systemic examination:** On gastrointestinal examination; pain and tenderness was felt in lower abdomen. No abnormal functioning of Respiratory, Cardiovascular and Central Nervous Systems was noticed.

**Table -2: Histopathology reports before starting the treatment**

Biopsy	Date 13/02/14	Date 11/11/14	Date 17/02/17
Gross	–	Received nine grey white soft tissue bits each measuring 0.2x0.1 cm. A/E in 1 block	Received six pale-white tissue pieces each measuring 0.2 cm
Microscopic	–	Section show fragmentation of colonic mucosa shows extensive ulceration. There is crypt distortion with cryptitis and crypt abscess formation. Lamina propria shows dense infiltrates of lymphocytes, plasma cells, neutrophils and eosinophils. There are no granulomas.	Section shows six fragments of distal colonic mucosal biopsy markedly irregular surface mucosa, dense mixed inflammatory infiltrate of lamina propria with presence of cryptitis, crypt distortion and focal crypt loss. Focal basal plasmacytosis is evident.
Impression	Strongly suggestive of active ulcerative colitis	Features are suggestive of inflammatory bowel disease. Morphology in favor of ulcerative colitis	Suggestive of ulcerative colitis, active phase
Advice	–	Suggested clinical correlation	Clinico-serology correlation

**Table 3: Treatment adopted**

Date		Given Treatment
06/02/17	First 5 days	Powdered combination of <i>Triphala</i> (5gm), 2 gm of <i>Laksha</i> ( <i>Laccifer lacca</i> Kerr.) and 250mg of <i>Shankha Bhasma</i> twice daily after lunch and dinner for 5 days along with 20ml of <i>Tambula patra swarasa</i> (fresh juice of <i>Piper betel</i> Linn.)
		15ml of Syrup <i>Kutaja Bilwa</i> (a proprietary Ayurvedic formulation) twice daily for 5 days after lunch and dinner. The ingredients of the syrup are: <i>Kutaja</i> ( <i>Holarrhena antidysenterica</i> Linn. Wall), <i>Bilwa</i> ( <i>Aegle marmelos</i> Corr.), <i>Mustaka</i> ( <i>Cyperus rotundus</i> Linn.), <i>Dadima</i> ( <i>Punica granatum</i> Linn.), <i>Trapusha</i> ( <i>Cucumis sativus</i> Linn.)
11/02/17	6 <sup>th</sup> to 40 <sup>th</sup> day	<i>Piccha basti</i> in modified form having following ingredients after dinner for 35 days i. 250ml of Goat Milk ii. 20gm of Honey iii. 10gm powder of <i>Kutaja</i> iv. 10gm <i>Mocharasa</i> ( <i>Salmalia malabarica</i> Schott & Endl.) v. 20gm powder of <i>Shatavari</i> ( <i>Asparagus racemosus</i> Willd.) vi. 10gm powder of <i>Pippali</i> ( <i>Piper longum</i> Linn.) vii. 40gm paste of <i>Yasthimadhu</i> ( <i>Glycyrrhiza glabra</i> Linn.) viii. 20ml of <i>Jatyadi ghrta</i>
		<i>Nilotpaladi yoga</i> (3gm) twice daily after lunch and dinner for 30 days along with Goat milk. <i>Nilotpaladi yoga</i> is made up of <i>Nilakamala</i> ( <i>Nymphaea nouchali</i> Burm. f.), <i>Mocharasa</i> ( <i>Salmalia malabarica</i> Schott & Endl.), <i>Lajavanti</i> ( <i>Mimosa pudica</i> Linn.), <i>Kamalakesara</i> ( <i>Nelumbo nucifera</i> Gaertn.)

**Ashtasthana pariksha:** Nadi was Vata pittaja, Mala was of Raktavarna with Ama associated with mucus and Jihva was Ruksha.

## INVESTIGATIONS

Before starting the treatment; routine hematological tests were done. (Table-1). On visit, the patients had histopathology reports with him. Stool for occult blood was done before starting and at the end of 40<sup>th</sup> day of treatment. Colonoscopy and Esophago-gastro duodenoscopy reports were with the patient. A brief of the hematological observations is placed at Table-2.

## TREATMENT:

Table-3 depicts the treatment followed in this case. Besides medicines; patient was advised to consume light diet like *Khichdi* (made up of rice, green gram, water and turmeric powder in a specific proportion) during the treatment period. Spicy, oily and junk food was avoided.

## RESULTS:

Bleeding per rectum was stopped after three days of administration of *Piccha basti*. Severity of abdominal pain was decreased. After 15<sup>th</sup> days of *basti*, patient was discharged from the hospital and advised to continue *Piccha basti* and oral intake of *Nilotpaladi yoga*. Patient's attendant was showed and trained the procedure of administering *Basti* in the hospital and advised to administer it at home for the next 20 days. Oral intake of *Nilotpaladi yoga* was continued during this time.

The patient reported back to OPD after 20 days with no abdominal pain and no bleeding per rectum. He was admitted in the hospital for follow up and condition of investigations. Analysis of stool for occult blood and sigmoidoscopy were done. Stool for occult blood was negative, which was positive before starting the treatment. Considering financial constraints; colonoscopy could not be done. The patient was followed for the next three months and he became free from all symptoms. Table-4 gives a comparison on the findings



**Table 4: Sigmoidoscopy reports before treatment and after treatment**

Sigmoidoscopy	Before treatment	After treatment	
Date	21/10/13	10/02/17	30/03/17
Findings	The mucosae show extensive ulceration, vascular congestion, mucosa are extremely friable and at places show pseudo-polypoid. The submucosa appears firm on punching biopsy suggesting underlying fibrosis	Examined upto sigmoid colon. Loss of vascularity with increased friability with erosion in Rectum. Increased mucosal erythema & oedema in sigmoid colon	Examined upto sigmoid colon. Mucosa / vascularity are normal
Impression	Severe active Chronic Ulcerative Colitis (Grade IV)	Proctocolitis	Normal study

of Sigmoidoscopy done before and after the treatment.

## DISCUSSION

Charaka has described use of *Piccha basti* in *Pravahika* (~dysentery), *Gudabhransha* (~rectal prolapse), *Raktatisara* (~haemorrhagic diarrhoea) and *Jwara* (~fever).<sup>8</sup> If diarrhoea persists in spite of administration of *Anuvasana basti* and *Samsarjana karma*; *Picchabasti* is advocated exclusively when *Vata shlesma vibandha*, *Shula* and *Pravahika* persists.<sup>9-10</sup> Sushruta has also advocated using *Piccha basti* in *Raktatisara* (~haemorrhagic diarrhoea) specially when the patient passes blood in small amounts associated with pain and obstructed flatus.<sup>11</sup>

Before starting the treatment; all the conventional drugs were withdrawn and a powdered combination of *Triphala*, *Laksha* (*Laccifer lacca* Kerr.) and *Shankha bhasma* (calcined conch shell) was administered along with *Tambula patra swarasa* (fresh juice of *Piper betel* Linn.) for the first five days. From the 6<sup>th</sup> day onwards, *Piccha basti* with oral administration of *Nilotpala yoga* was continued for the next 35 days. The composition of *Piccha basti* was modified by replacing *Ghrita* with *Jatyadi ghrita*, considering its wound healing effects.<sup>12</sup>

Ingredients of *Piccha basti* have certain unique properties that helped in healing the ulcers of UC. *Mocharasa* (Resin of *Salmalia malabarica* Schott & Endl.) acts as *Vrana ropaka* (~wound healing) due to its *Kashaya rasa* and *Sheeta virya*.<sup>13</sup> It is one of the drugs categorized under *Shonita sthapaka gana* (a group of drugs that act as haemostatics).<sup>14</sup>

Studies established Antioxidant and Anti-inflammatory actions of *Mocharasa*.<sup>15</sup> *Yasthimadhu* (*Glycyrrhiza glabra* Linn.) is *Vata pitta shamaka* as well as *Shothahara* and is an anti-inflammatory drug.<sup>16</sup>

*Ghrita* stimulates *Agni*, besides possessing properties like *Balya* and *Vrana ropana* (healing effect).<sup>17</sup> Charaka described *Ghrita* as a best *Vata pitta shamaka dravya*.<sup>18</sup> *Jatyadi ghrita* in *Piccha basti* is helpful in cleaning and healing the ulcers which have small openings, situated on vital spots, which have exudation, deep seated, painful and having sinuses.<sup>19</sup>

Time of administration of *Piccha basti* was not mentioned in classical texts. So, we have decided the timings of administration of *Piccha basti* based on the previous experiences in successfully treating UC, where *Piccha basti* was given after dinner. No inconveniences were observed in giving *Basti* after dinner in that case. Giving *Piccha basti* after dinner also helps in retaining the medicaments for a longer duration. In the current case, *Piccha basti* was given at around 8 PM and was retained by the patient for 8 to 9 hours.

After 35 days of administration of *Piccha basti*; abdominal pain while taking food was reduced and patient started taking solid foods like Chapatis. Patient's weight was increased from 45 to 48 kg after 40th day of treatment. Sigmoidoscopy was done before starting *Piccha basti*, which showed loss of vascularity with increased friability with erosion and rectum. Increased mucosal erythema & oedema in sigmoid colon indicating Proctocolitis. After 35 days of the above treatment, normal mucosa and

vascularity was observed. Looking into these changes, *Basti* was stopped.

## CONCLUSION

Ulcerative colitis is a chronic inflammatory bowel disease, whose aetiology is unknown. The dietary habits of the patient i.e. frequent consumption of spicy, oily, junk food may be a predisposing factor of Ulcerative colitis. On the basis of results observed in this case; it can be said that, Ayurvedic management with *Piccha basti* and *Nilotpaladi yoga* are effective in the management of UC. These approaches are safe, cost effective and easy to follow. The patient was followed up for 5 months and there were no recurrences of symptoms. As this is a single case study, there is a need for more number of patients to establish the effectiveness of combination of *Piccha basti* and *Nilotpaladi yoga* in the management of UC. This case report serves as a lead for further researches.

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## Management of Bicytopenia using metal based Ayurvedic formulations

Balendu Prakash\*, Anish Maru<sup>1</sup>, Shikha Prakash, Sneha Tiwari

VCP Cancer Research Foundation, Turner Road, Clement Town, Dehradun,<sup>1</sup>Action Cancer Hospital, Paschim Vihar, New Delhi, India

\*Correspondence: Email : balenduprakash@gmail.com, Mobile: +91 9837028544

### ABSTRACT

#### Keywords:

Ayurveda,  
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Case report,  
Leucopenia,  
Rasa shastra,  
Thrombocytopenia

Bicytopenia is a disorder of hematopoietic system and is reflected by lowering of any two of hemoglobin (below 10 g/dL), white cells (3.5-10.5 billion cells/L) and platelets (below  $100 \times 10^9/L$ ) in peripheral blood. It is usually treated using corticosteroids, growth factors, immune-suppressants, nutritional supplements, periodical blood transfusion and bone marrow transplantation. However, these treatments have limited effects and may cause moderate to severe side-effects. A young Non Resident Indian male of 28 years old opted for Ayurvedic treatment for Bicytopenia as first choice of treatment, with the consent of a leading oncologist. The patient was prescribed a combination of Herbo-Mineral Formulations (HMFs) along with a regulated diet and lifestyle. Patient has completed fourteen months of Ayurvedic treatment and now leads a normal life. No adverse effects were noticed during the treatment and follow-up period too. Further controlled pilot studies are required to establish proof of efficacy in a systematic way.

**Introduction:** Bicytopenia is an haematological disorder marked by reduction of any two of the blood components; Hemoglobin below 10 g/dL, Absolute Neutrophil Count  $1 \times 10^9$  or lower, Platelet count  $100 \times 10^9/L$  or below.<sup>1,2</sup> The etiology of cytopenia is multifactorial and is related to abnormal progenitor stem cells with subsequent bone marrow insufficiency, hematopoietic growth factor deficiency, and hypersplenism. Other clinical manifestations include autoimmune syndrome, which could be manifested as vasculitis or arthritis, osteolytic bone lesions can occur rarely.<sup>1</sup>

The decrease in red blood cells, resulting in low levels of Hemoglobin (Hb) in blood is termed as

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anaemia characterised by exhaustion, fatigue, loss of appetite or shortness of breath. Decrease in platelets or thrombocytopenia often leads to rashes, petechiae, purpura and bleeding tendency and the decrease in white cells may lead to recurrent infections.<sup>3</sup>

The treatment of idiopathic bicytopenia involves the use of growth factors, immunosuppressive therapy, corticosteroids, nutritional supplements and regular blood component therapy.<sup>4</sup> However, such treatments have their own limitations and grave consequences. In such conditions, Bone Marrow Transplantation (BMT) remains the only treatment option. BMT from a matched donor reportedly has a good prognosis in the treatment of cytopenias. In absence of perfectly matched donor; risk for complications is high.<sup>4</sup> The overall survival of patients cannot be predicted.

## Case Report

A 28 years old Indian male, who was living in Saudi Arabia for two and a half years was incidentally diagnosed for bicytopenia during routine blood check-up at a hospital in Saudi Arabia (Hb - 8.6 g/dL, platelet - 20,000/ $\mu$ L). His haematology report showed Anisocytic Anaemia (ICD 10 code: D64.9) with mild to moderate thrombocytopenia (ICD 10 code: D69.6). The patient went for second opinion at another hospital in India and got haematological indices and bone marrow examination done. Flow cytometric analysis did not show any abnormality, deficiency of GPI-linked antigens on granulocytes and monocytes suggesting absence of clone of Paroxysmal Nocturnal Hemoglobinuria (PNH). Serum Lactic Dehydrogenase - 896.60; Lactate Pyruvate - 692.5 U/L. Bone Marrow Aspirate and biopsy report depicted erythroid hyperplasia and adequate megakaryocytes (BMA # 536/2015; Lab Ref No. 1051518; BLK Super Specialty Hospital, New Delhi); peripheral blood film showed microangiopathic haemolytic anaemia. However, no specific cause could be established for bicytopenia. At this point, patient was clinically asymptomatic except unexplained fatigue.

The patient consulted hematologist and other experts who could not established the aetiology of the problem and advised for plasmapheresis and BMT. After deliberate discussion, the patient opted for Ayurvedic treatment (AYT) with the consent of Hemato-oncologist. He underwent *Rogi pariksha* involving *Darshana* (observation), *Sparshana* (touching) and *Prashna* (interrogation).<sup>5</sup> On examination, he was found to have *Pitta* dominant pulse.<sup>6</sup> On palpation, tenderness was found below the costal margin on the right side at the mid clavicular line in right hypochondrium area of abdomen indicating inflammation in gall bladder and at the ilio-caecal junction. The patient was vegetarian, non-alcoholic and non-tobacco user. He was living in Saudi Arabia for the past two and half years. He had

no previous history of any illness and his parents did not share any close kinship. His mother had been diagnosed for Acute Promyelocytic Leukemia (APML) at the age of 42 year and has completed nine years of Ayurvedic treatment, with complete remission. The baseline blood tests for Hemogram and Vitamin D3 at the commencement of the treatment showed Hb - 9.70 g/dL, Platelet count - 56 thou/mm<sup>3</sup> and Vitamin D3 - <10.50 nmol/L. Hemoglobin HPLC test turned out to be normal.

## Management of the disease

The patient was prescribed with an Ayurvedic proprietary formulation Tablet Kidgrow (500 mg) (Table 1) three times a day and *Ajeernari vati*<sup>7</sup> (500 mg) three times a day for *Deepana* and *Pachana* before starting the main course of treatment. From the first day, process of Gall Bladder (GB) flush has been started, which is an eight-day process used in Chinese system of medicine.<sup>8</sup> Besides, he was also given Albendazole 400 mg for deworming on the first and second day at bedtime. Patient had six purgations on the eighth day of GB flush. On Day 9, the tenderness below the costal margin on the right side at the mid clavicular line in right hypochondrium area of abdomen and at the ilio-caecal junction was not felt on palpation. The patient experienced lightness in the body, improved appetite, good sleep and increased energy. He was discharged on Day 9 and was prescribed *Siddha makaradhwaja*<sup>9</sup> powder 125 mg twice, with an Ayurvedic proprietary formulation Capsule Numax (250 mg) three times a day, *Kamadudha rasa*<sup>10</sup> 250 mg twice a day and *Abhraka bhasma*<sup>11</sup> 125 mg twice a day with regulated diet (Table 2). Patient has completed fourteen months of Ayurvedic treatment till date. He was prescribed strict isolation with complete psychological and physical rest. Tea, coffee, aerated drinks, reheated food, packaged foods and drinks, onion, tomato and garlic were restricted in his diet. He was also prescribed Cholecalciferol<sup>12</sup> (Vitamin D3 supplement) 60,000 IU per week with 100gm of milk cream for sixteen weeks and was advised periodical blood examination from the same pathology lab.

**Table 1: Composition of Kidgrow Tablet and Numax Capsule**

Composition of Kidgrow	Composition of Numax
250mg of Kidgrow tablet is made from <i>Piper retrofractum</i> dried seed powder (20mg), <i>Apium graveolens</i> dried seed powder (20mg), <i>Zingiber officinale</i> rhizome powder (15mg), <i>Piper nigrum</i> dried leaf powder (15mg), <i>Piper longum</i> dried fruit powder (15mg), <i>Piper longum</i> dried root powder (15mg), <i>Ferula foetida</i> resin (15mg), <i>Plumbago zeylanica</i> dried bark powder (15mg), rock salt (15mg), <i>Souvarchala lavana</i> (15mg), <i>Bid lavana</i> (15mg), <i>Audbhida lavana</i> (15mg), common salt (15mg), Ammonium chloride (15mg), Potassium carbonate (15mg), Sodium carbonate (15mg), processed in quantity sufficient <i>Matulunga swarasa</i> (fresh juice extracted from <i>Citrus medica</i> ).	250mg Numax capsule contains sugar candy powder (132mg), <i>Bambusa arundinacea</i> gum (65.6mg), <i>Piper longum</i> dried fruit powder (49.5mg), <i>Elettaria cardamomum</i> dried seed powder (32.5mg), <i>Cennamomum zeylanicum</i> dried bark powder (24.5mg), processed Cinnabar (16.3mg), processed Sulphur (16.3mg), <i>Raupyra bhasma</i> (16.3mg), <i>Tamrabhasma</i> (16.3mg), <i>Swarnamakshika bhasma</i> (16.3mg), <i>Shankha bhasma</i> (16.3mg), <i>Suddha suhaga</i> (16.3mg), <i>Zingiber officinale</i> dried root powder (16.3mg), <i>Piper nigrum</i> dried fruit powder (16.3mg), <i>Datura metel</i> dried seed powder (16.3mg), <i>Mesua ferrea</i> dried flower powder (16.3mg), <i>Cinnamomum tamala</i> dried leaf powder (16.3mg), processed in quantity sufficient <i>Bhrigaraja swarasa</i> (fresh juice extracted from <i>Eclipta alba</i> ).

**Table 2: Diet and medicine plan**

Days	Medicines	Daily diet
Day 1 & 2	Albendazole 400mg bed time	400 gm yoghurt, 250 ml milk + <i>Amaranthus</i> seeds, Six green apples smoothie, 600 gm rice + lentil, Two litres water
Day 1-8	<i>Ajeernari vati</i> 500 mg tablet thrice a day and Kidgrow 500 mg tablet thrice a day with GB flush procedure	
Day 9 onwards	<i>Siddha Makaradhwaja</i> powder 125 mg twice wrapped in a tablespoon of <i>Malai</i> (upper layer of boiled milk), One Capsule of Numax thrice a day, 250 mg <i>Kamadudha rasa</i> twice a day and 125 mg <i>Abhraka bhasma</i> twice with equal amount of grinded Mishri (sugar candy)	1600 calorie diet composed of balance of carbohydrates, proteins and minerals Diet is divided into 3 meals and 3 snacks

## Outcome

Periodic Hematological examination showed rise in Hb levels and platelet count within the first few weeks of starting of Ayurvedic treatment (Graph 1-2) and his stamina started building up gradually. Patient did not report any adverse effects and currently leading a normal life. The results of all blood tests conducted after fourteen months of treatment were largely within normal limits, giving a clue regarding safety profile of the medication (Liver Function Test: Total Bilirubin - 0.41 mg/dL, Direct Bilirubin - 0.05 mg/dL, Indirect Bilirubin - 0.36 mg/dL, Alkaline Phosphatase - 86 IU/L, SGOT - 13, SGPT - 28; Lipid Profile: Cholesterol

- 157 mg/dL, Triglycerides - 73 mg/dL; Kidney Profile: Creatinine - 0.69 mg/dL, Uric Acid - 5.0 mg/dL, Blood Urea Nitrogen - 6 mmol/L; Thyroid Profile: Total TSH - 2.389 mIU/L, Free Thyroxine - 1.21 ng/dl). The patient is under regular follow up and his peripheral blood film revealed normocytic normochromic blood picture.

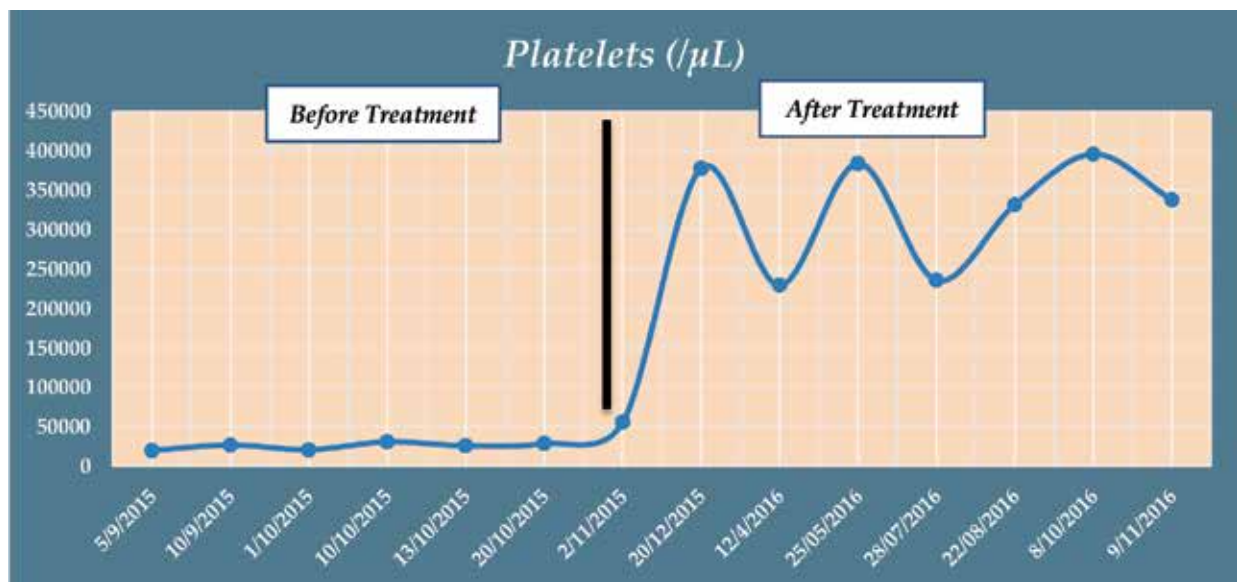
## Discussion

There are anecdotal case reports regarding spontaneous remission in the patients of cytopenias but their rationality and statistics largely remain unknown and unpredictable. Here, a patient, who is well aware of





Graph 1: Periodic changes in Hemoglobin Level



Graph 2: Changes in Platelet Count

the consequences related to diagnosis, treatment and prognosis of his illness opted Ayurvedic treatment after deliberate discussions with close family, friends as well as a senior hemato-oncologist.

Ayurveda considers *Pitta dosha* to be the root cause of hematopoietic disorders. A high risk factor in patients of cytopenia could easily be correlated with the symptoms of *Rakta pitta*.<sup>13</sup> Therefore, the Ayurvedic treatment was primarily focused on restoring the balance in *Pitta* by prescribing *Kamadudha Rasa*,<sup>10</sup> Capsule Numax and

*Abhraka bhasma*. Capsule Numax is a non-iron containing herbo-mineral Ayurvedic formulation, which is a modified form of two classical medicines, *Sootashekhara rasa* and *Sitopaladi churna*. It has shown promising results in treating Nutritional Anaemia and escalating the absorption of iron.<sup>14-16</sup>

Bicytopenia is an outcome of bone marrow suppression (*Majja dosha*), hence, *Siddha makaradhwaja* (SMD), a complex compound prepared on fire using one part *Bhubhukshita parada* (processed mercury), one fourth

part 24-carat Gold and 16 parts of processed Sulphur was prescribed at a dose of 125 mg twice daily. SMD is well known for its *Rasayana* properties and for imparting longevity and rejuvenation.

Ayurveda emphasizes on diet, lifestyle and medicine. Along with the mentioned diet and treatment; the patient was kept in strict isolation to avoid secondary infections. Complete psychological and physical rest was given to attain maximum sleep as half of the diseases can be cured by adequate sleep.<sup>17</sup>

All the above factors brought significant improvement in Hb and platelets without causing any Grade II toxicity (Graph 1-2). Patient leads a normal life after receiving Ayurvedic treatment, which was aimed to restore balance of *Pitta* and strengthen the *Majja* with regulated diet and psychological and physical rest. In this case, amalgamation of other medical systems is done by incorporating modern diagnostic tools, such as bone marrow aspiration and haematological examination; nutrition comprising a balance of carbohydrates, proteins and minerals; and GB flush following Chinese system along with Ayurvedic principles that helped to assess the response to Ayurvedic treatment better. But, these results cannot be explained beyond this point as the chemistry of Ayurvedic formulations, mode of action, dosage schedule and duration largely remain unknown and merely depend on the observation and experience of the treating physician.

Herbo mineral Ayurvedic formulations of Ayurveda are explained in *Rasa Shastra*,<sup>18</sup> which deals with the therapeutics of processed Mercury and substances of mineral, animal and plant origin. Most of these are moderate to severely toxic in their raw form but a tedious traditional methodology converts these into non-toxic and therapeutic form. However, *Rasa shastra* is not much understood for its therapeutic effects. We are reporting this case to impart the therapeutic effects of *Rasa shastra* as potential treatment for hematopoietic disorders. However, there must be intrigue chemistry behind the preparation of these formulations that needs to be understood. Further studies are required to create more evidences and then to move forward to explore the potentials of Ayurveda in the management of hematopoietic disorders.

## Conclusion

Traditional medicines may play crucial role in the treatment of hematopoietic disorders and need in-depth and intensive researches. The basic phenomena of Ayurvedic approaches including chemistry of involved formulations, pharmacokinetics and duration of the treatment etc. is not well understood. A controlled pilot study is required to establish proof of efficacy.

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**Conflicts of Interest:** Both the formulations used in this case are being prescribed by the corresponding author in the clinical practice since years. There is no other conflict of interest.

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## Management of Cerebrovascular Accident (CVA) through Ayurveda

Jitender Kumar Dhiman\*, Prasanth.D, Mahapatra Arun Kumar<sup>1</sup>, Santosh Kumar Bhatted

Department of Panchakarma, <sup>1</sup>Department of Kaumarabhritya, All India Institute Ayurveda, New Delhi

\*Correspondence: E-mail : jitenderk331@gmail.com, Mobile: +91 9873116112

### ABSTRACT

#### Key words:

Cerebrovascular  
Accident, *Pakshaghata*,  
Stroke, *Virechana*

Cerebrovascular Accident (CVA), the third most common cause of death in developing countries, is the term used to describe episodes of focal brain dysfunction due to focal ischemia or hemorrhage. Acute stroke is characterized most commonly by hemiplegia with or without signs of focal higher cerebral dysfunction that has posed a great problem as far as its management is concerned. Ayurveda can help in such conditions. A 54 years old male patient diagnosed with non-hemorrhagic infarct presented with right side hemiplegia and difficulty in speech was admitted in IPD. This manifestation was compared with *Kaphavrita dakshina pakshaghata*. *Panchakarma* procedures including *Rookshana*, *Snehana* and *Virechana* were adopted along with other internal medicines. Assessments were made using National Institute of Health Stroke Scale (NIH-SS), Barthel Index (BI) and Modified Rankin Scale (MRS). At the end of the treatment, there was considerable improvement in the subjective and objective clinical features. The observations reveal that, *Panchakarma* procedures can play a key role in the management of conditions like CVA. The treatment strategies followed in this study can be safely adopted under the supervision of a trained Ayurveda specialist.

**Introduction:** Cerebrovascular Accident (CVA), to the general public means a weakness either permanent or transient on one side, often with loss of speech. It is defined as a focal neurological deficit due to a vascular lesion lasting longer than 24 hours<sup>[1]</sup>. Hemiplegia following middle cerebral arterial thrombo-embolism is the typical example. The global burden of stroke is high with increasing incidences, mortality and economic impact, particularly in low and middle income countries. Of patients presenting with stroke, 85% will have sustained a cerebral infarction due to inadequate

blood flow to some part of the brain<sup>[2]</sup>. The clinical features will be variable and depends on site and extent of infarct. Pure motor stroke caused by an infarct in the internal capsule is the most common lacunar syndrome that result in weakness of the face, arm, and/or leg. Since both motor and sensory fibers are carried in the internal capsule, a stroke to the posterior limb of the internal capsule can lead to contralateral weakness and sensory loss.<sup>[3]</sup> The signs and symptoms of CVA can be correlated with *Pakshaghata* in Ayurveda. The condition affects *Sira* (vascular structures) and *Snayu* (tendons and ligaments) of half of the body and face. The cardinal features of *Pakshaghata* includes *Chestahani* (decreased motor activity), *Ruja* (pain) and *Vakstambha* (slurred speech).<sup>[4]</sup> Such manifestations can be managed in Ayurveda successfully.

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**Case report:** A 54 years old male patient with complete loss of strength in the right side of the body, difficulty in speech since seven days was brought by his relatives to the OPD on 22.02.2017. Initial history revealed that the patient developed sudden weakness in the right side of the body seven days back and was under conventional medical supervision for a week. MRI brain revealed non-hemorrhagic infarct in the posterior limb of left internal capsule. On examination, patient was afebrile, conscious, well oriented, responding to verbal commands but was unable to walk and had dysarthria. Pulse was 76/min, blood pressure was 130/90 mmHg. Muscle tone was hyper, muscle strength in right upper and lower limbs was zero (as estimated by Medical Research Council Scale for Muscle Strength). Babinski sign was positive.

**Ayurveda perspective:** The patient showed *Kaphaavruta*

*vata lakshana* like *Shaitya* (cold to touch), *Guruta* (heaviness)<sup>[5]</sup> along with *Chestahani* (impaired motor activity in the right side), *Ruja* (pain), *Vakstambha* (slurred speech) based on which *kaphaavruta vatajanya dakshina pakshaghata* was diagnosed. The symptoms resembles with acute CVA. The prognosis of this manifestation is *kruchra Sadhya* (difficult to cure)<sup>[6]</sup>. *Prakriti* of the patient was *Vata pitta*. He has *Pravara satva*, complained of *Vibandha* (constipation) and *Agni mandya* (poor appetite). As per treatment principles *Panchakarma* procedures and internal medicines were planned (Table 1-5).

**Previous treatment history:** Patient was known hypertensive with history of Myocardial Infarction and underwent percutaneous transluminal coronary angioplasty 9 years back. Since then, he was on Amlodipine 5 mg OD under medical supervision. No other significant medical history was observed.

**Table 1: Panchakarma procedures adopted**

	Procedure	Duration
1	<i>Rookshana</i> ( <i>Rooksha choorna pinda sveda</i> , <i>Takra dhara</i> , <i>Kshara basti</i> ) and <i>Talam</i> ( <i>Rasnadi choorna</i> ) <sup>[7]</sup> with <i>Ksheerabala taila</i> 101) <sup>[8]</sup>	1 <sup>st</sup> to 18 <sup>th</sup> day
2	<i>Snehapana</i> (with <i>Kalyanaka ghritam</i> ) <sup>[9]</sup>	19 <sup>th</sup> to 23 <sup>rd</sup> day
3	<i>Sarvanga abhyanga</i> (with <i>Kottamchukkadi taila</i> ) <sup>[10]</sup> followed by <i>Bhashpa Swedana</i> (with <i>Dashmoola kwatha</i> ) <sup>[11]</sup>	24 <sup>th</sup> to 27 <sup>th</sup> day
4	<i>Virechana</i> (with <i>Trivrut avaleha</i> ) <sup>[12]</sup> , <i>Eranda taila</i> <sup>[13]</sup> , <i>Triphala kashayam</i> ) <sup>[14]</sup>	28 <sup>th</sup> day

**Table 2: Rookshana procedure**

Procedure	Drugs used	Duration
<i>Rooksha choorna pinda sveda</i>	Two Pottalis (each 250gm) made-up of <i>Jatamayadi choorna</i> <sup>[15]</sup>	These three procedures were followed simultaneously during the first 18 days. 25-30 min of Pinda sveda followed by 30 min Takra dhara and Kshara basti
<i>Takra dhara</i> <sup>[16]</sup>	2 liters of Takra (buttermilk) was processed with 50gm each fine powders of <i>Musta</i> ( <i>Cyperus rotundus</i> ) and <i>Amalaki</i> ( <i>Embolica officinalis</i> )	
<i>Kshara basti</i> <sup>[17]</sup>	320ml <i>Goumutra arka</i> was mixed with 100gm each of <i>Guda</i> (Jaggery) and <i>Imlika kalka</i> (paste of <i>Tamarindus indica</i> ) and 10 gm each of <i>Saindhava lavana</i> and fine powder of <i>Shatapushpa</i> ( <i>Anethum sowa</i> )	

Besides these procedures; 500mg of *Kaishora guggulu*<sup>[18]</sup> thrice a day with 10ml of *Guduchayadi kashayam*<sup>[19]</sup> with 30ml of lukewarm water thrice a day before food, 10ml of *Amrutottaram Kashayam*<sup>[20]</sup> mixed with 10ml

*Abhayarishta*<sup>[21]</sup> thrice a day after food added with 5g of *Hingwashtaka choorna*,<sup>[22]</sup> 10ml *Eranda taila* bed time with lukewarm water were administered during the first 7 days of the management.

**Table 3: Kshara basti schedule**

Day	Pratyagamana Kala*	Symptoms / Observations
1	5 min	1-2 bowel movements
2	2 min	
3	10 min	
4	5 min	Single bowel movements and a feeling of lightness in the body.
5	2 min	
6	5 min	
7	20 min	Single bowel movements and a feeling of lightness in the body. Appetite has been increased.
8	10 min	Single bowel movements and a feeling of lightness in the body. Appetite and digestive power has been increased. Had comfortable Vatanulomana (flatulence).
9	5 min	
10	10 min	Adduction and abduction movements in right lower limb was noticed.
11	5 min	In addition to the above; adduction and abduction movements in right upper limb was noticed.
12	2 min	
13	10 min	
14	5 min	
15	15 min	Movements against gravity in lower limb was noticed.
16	10 min	
17	5 min	
18	5 min	Bowel frequency once, Lightness present, Taste in food, walking small distance with support

\* Pratyagamana – evacuation of basti dravya, **Note:** 400ml of Kshara basti dravya was administered on each day before 11.30 AM.

**Table 4: Schedule of Snehapana with Kalyanaka Ghritam**

Dose	Onset of hunger	Symptoms observed
30ml	12.00 PM	Had comfortable Vatanulomana (flatulence).
50ml	12.30 PM	Had comfortable Vatanulomana (flatulence).
70ml	2.00 PM	Had comfortable Vatanulomana (flatulence), appetite was increased. Soft and unctuous bowel movements.
100ml	2.00 PM	In addition to the above, softness of body parts was observed.
130ml	4.00 PM	In addition to the above, lightness of body was observed.

**Note:** Kalyanaka Ghritam was administered for five days in increasing dose before 7 AM.

**Table 5: Schedule of Virechana adopted**

Drug	Vegas*	Symptoms observed
80gm of Trivrit avaleha was administered along with 80ml Triphala kwatha and 30ml Eranda Taila. Ushnodaka pana at an interval of 15 to 20 minutes was advised.	14	Increased appetite, lightness of the body and a feeling of weakness were observed.

\*Vega- Number of times patient passes stools after Virechana

This was followed by 500 mg *Kaishora guggulu* and 10ml *Ashtavargam kashayam*<sup>[23]</sup> thrice before food, 10ml *Punarnavasava*<sup>[24]</sup> added with 10ml *Abhayarishtha* and 5gm *Hingawashtaka choorna* thrice after food. 10ml of *Gandharvahastadi eranda tailam*<sup>[25]</sup> at bed time for next 11 days until *Samyak Deepana Pachana lakshanas*<sup>[26]</sup> were observed.

#### Criteria for selection of procedure / medicine:

The present case was diagnosed as *Kaphaavruta vatajanya pakshaghata* in which *Kaphaghna* and *Vatanulomana* procedures are preferred.<sup>[27]</sup> *Rookshana* was adopted first to alleviate *Kapha* by *Jatamayadi Rooksha Choorna Pinda Sveda*, *Kshara basti* and *Takra dhara*. *Mastishka* (application of medicated oil over anterior frontanallae) is specially mentioned in the treatment of *Pakshaghata*.<sup>[28]</sup> *Virechana* is indicated in the treatment of *Kaphaavruta vata*<sup>[29]</sup> and also in the management of *Pakshaghata*.<sup>[30]</sup> Oral medication was selected on the basis of the properties of ingredients in the respective formulations that help in pacifying

aggravated *Pitta kapha dosha* keeping *Vata* under control.

Assessment criteria: Before and after treatment, assessment was made using National Institute of Health Stroke Scale (NIH-SS)<sup>[31]</sup>, Modified Rankin Scale (MRS)<sup>[32]</sup> and Barthel Index.<sup>[33]</sup> (Table 6-8).

**Observations:** After a week of treatment, adduction and abduction movements were observed in the right lower limb. After two weeks, patient was able to lift his leg slightly and walk with support. Appetite was increased and bowel movements were regular. After 2 weeks of *Virechana*; patient was able to move his right upper limb at elbow joint and was able to walk for some distance without support. On NIH-SS scale maximum improvement was noted in right lower and upper extremity functions. MRS scale was 4 before treatment indicating severe disability was reduced to 2 after treatment indicating slight disability. Barthel Index showed maximum improvement on mobility, toilet use, grooming and bathing domains.

Table 6: National Institute of Health Stroke Scale (NIH-SS)

Score	NIH Scale	Range of score	BT	AT
1-a	Level of Consciousness (LoC)	0 to 3	0	0
1-b	LoC Questions	0 to 2	0	0
1-c	LoC Commands	0 to 2	0	0
2	Best Gaze	0 to 2	0	0
3	Visual	0 to 3	0	0
4	Facial Palsy	0 to 3	1	0
5	Motor arm	Right 0 to 4	4	2
		Left 0 to 4	0	0
6	Motor leg	Right 0 to 4	4	0
		Left 0 to 4	0	0
7	Limb ataxia	0 to 2	0	0
8	Sensory	0 to 2	1	0
9	Best language	0 to 3	0	0
10	Dysarthria	0 to 2	1	0
11	Extinction and in attention (formerly neglect)	0 to 2	0	0
	<b>Total</b>	<b>42</b>	<b>11</b>	<b>2</b>

0= No stroke, 1-4= Minor stroke, 5-15= Moderate stroke, 15-20= Moderate/severe stroke, 21-42= Severe stroke

BT: Before Treatment, AT: After Treatment

**Table 7: Modified Rankin Scale**

Score	Domain
0	No symptoms at all
1	No significant disability despite symptoms; able to carry out all usual duties and activities
2	Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance
3	Moderate disability; requiring some help, but able to walk without assistance
4	Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance
5	Severe disability; bedridden, incontinent and requiring constant nursing care and attention
6	Dead

**Table 8: Barthel Index**

	Domain name	Range of Scores	BT	AT
1	Feeding	0= unable 5= needs help in cutting, spreading butter, etc., or requires modified diet 10= independent	5	5
2	Bathing	0= dependent 5= independent (or in shower)	0	5
3	Grooming	0= needs to help with personal care 5= independent face / hair / teeth / shaving (implements provided)	0	5
4	Dressing	0= dependent 5= needs help but can do about half unaided 10= independent (including buttons, zips, laces etc.)	5	5
5	Bowel	0= incontinent (or needs to be given enemas) 5= occasional accident 10= continent	10	10
6	Bladder	0= incontinent or catheterized and unable to manage alone 5= occasional accident 10= continent	10	10
7	Toilet use	0= dependent 5= needs some help, but can do something alone 10= independent (on and off, dressing, wiping)	0	5
8	Transfers (bed to chair and back)	0= unable, no sitting balance 5= major help (of one or two people, physical), can sit 10= minor help (verbal or physical) 15= independent	5	10
9	Mobility (on level surfaces)	0= immobile or < 50 yards 5= wheelchair independent, including corners, > 50 yards 10= walks with help of one person (verbal or physical) > 50 yards 15= independent (but may use any aid; for example, stick) > 50 yards	0	15
10	Stairs	0= unable 5= needs help (verbal, physical, carrying aid) 10= independent	0	5
	<b>Total</b>		<b>35</b>	<b>75</b>

BT: Before Treatment, AT: After Treatment



## Discussion:

Cerebrovascular accident or stroke is defined by this abrupt onset of a neurological deficit that is attributed to a focal vascular cause<sup>[34]</sup>. A stroke can be ischemic or hemorrhagic. The present case was a typical example of ischemic stroke caused by occlusion in lenticulostriate arteries (branch of middle cerebral artery) that supplies posterior limb of internal capsule [35]. Since both motor and sensory fibers are carried in the internal capsule, a stroke to the posterior limb of the internal capsule can lead to contralateral weakness and sensory loss. Patient showed similar symptoms like weakness of right side of the body with dysarthria. Patient also had symptoms like *Shaitya* (cold to touch), *Guruta* (heaviness), and *Shula* (pain) which indicates towards the *Kapha avarana*. *Virechana* was planned because *Virechana* is the gold standard treatment of *pakshaghata*. *Virechana* is best to remove the *avarana* of *vata* by *kapha*. Before *Virechana*, *rookshana* was done with *Rooksha Choorna Pinda Sveda*, *Kshara Basti* along with *Takra Dhara* because *rookshana* would be the procedure of choice to remove *Kapha avarana*. *Jatamayadi choorna* was chosen for *Rooksha Choorna Pinda Sveda* considering its *karmukata* as *rooksha guna* opposite to the *snigdha* of *kapha* and *ushna guna* opposite to *sheeta guna* of *kapha* and *vata*. *Takra Dhara* is specially indicated in Hemiplegia<sup>[36]</sup>.

*Kaishora guggulu*<sup>[18]</sup> considering its action on *Vata* and *Pitta*, *Guduchayadi kashayam*<sup>[19]</sup> which is known to have *Pitta kapha hara* effect. As the patient had *Agnimandhya Amrutottaram Kashayam*<sup>[20]</sup> was also given due its *Agni deepaka* nature. For *Vatanulomana*; *Abhyarishta*<sup>[21]</sup> along with *Hingwashtaka choorna*<sup>[22]</sup> followed by *Eranda taila*<sup>[13]</sup> at bed time

Later this was followed by 500 mg *Kaishora guggulu* and 10ml *Ashtavargam kashayam*<sup>[23]</sup> thrice before food, 10ml *Punarnavasava*<sup>[11]</sup> added with 10ml *Abhayarishta* and 5gm *Hingwashtaka choorna* thrice after food. 10ml of *Gandharvahastadi eranda tailam*<sup>[25]</sup> at bed time for next 11 days until the appearance of *Samyak Deepana Pachana lakshanas*<sup>[26]</sup>.

After *rookshana*, patient was able to lift his leg slightly and walk with support. After observing *Samyak Deepana Pachana lakshana*<sup>[26]</sup>, *Snehapana* with *Kalyanaka ghrutam* was started, as preparatory procedure of *Shodhana*. *Kalyanaka*

*ghritam* provides nourishment, bestows strength and also beneficial in persons *Swara Vikruti* (Slurred speech) the management of *Vata vyadhi*. After observing *samyaka snigdha lakshana*<sup>[37]</sup> *Sarvanga Abhyanga* (full body oil massage with *Kottamchukkadi Taila*) was done followed by *Sarvanga Nadi Sveda* (full body fomentation with *Dashamoola Kwatha*). This was followed by *Snigdha Virechana* (Therapeutic purgation along with oil) by administering a blend of *Trivrut avaleha*, *Triphala kwatha* and *Eranda taila*. *Trivrut Avaleha* has *Kaphapittahara* properties and it can be easily tolerated by the patient. *Eranda* is best to remove *vata*<sup>[38]</sup>. *Triphala kwatha* was given as *anupana*. *Triphala* is *Kaphapittahara* and *agnideepaka* in nature. 14 *Virechana vegas* were obtained indicating *Madhyama Shuddhi* (medium level of purification). No complication occurred after *virechana* and during *samsarjana karma*. *Virechana* helps in eliminating *Pitta* followed by *Kapha* and *Vata* was well tolerated by the patient. After 2 weeks of *Virechana*; patient was able to move his right upper limb at elbow joint and was able to walk for some distance without support. Later on follow up after 36 days with continuation of same internal medicines showed very good remission of clinical symptoms and improved quality of life. Patient was on Tab amlodipine 5mg for hypertension during and after the treatment.

## Conclusion:

This case study shows effectiveness of stage wise Panchakarma management in Cerebro Vascular Accident (CVA) comparable to *Pakshaghata*. Whilst there is enormous scope for further research but still it proves that with proper diagnosis and proper treatment protocol. Ayurveda can be beneficial in such cases of CVA. Recovery in the present case was promising and worth documenting.

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**Conflicts of Interest:** Nil

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## Management of Alcoholic Liver Disease through Ayurveda

Kiran Kumar V Mutnali\*, Rashmi Patil

Dept. of Kayachikitsa, KLE University's Shri B M Kankanawadi Ayurveda Mahavidyalaya, PG Studies and Research Centre, Shahapur, Belagavi, Karnataka, India

\*Correspondence: E-mail : drkiranmutnali@gmail.com, Mobile: +91 9164648888

### ABSTRACT

#### Keywords:

Alcoholic liver disease,  
Ascites,  
Jalodara,  
Virechana,  
Yakriddalyudara

Alcoholic Liver Disease (ALD) involves a process of progressive destruction and regeneration of liver parenchyma leading to fibrosis and cirrhosis. About 30% adult Indians use alcohol of which 4 - 13% are daily users. The commonest cause of ALD is use of excess alcohol in terms of quantity, duration and patterns of drinking. A 38 years old male visited OPD complaining of anorexia, distended abdomen after food, yellowish discoloration of eyes and yellow urine since five months. He developed distention of abdomen since three months and pedal edema since one month. Bilirubin, SGOT and Alkaline Phosphatase were elevated. USG showed hepatomegaly with fatty changes suggestive of chronic liver disease, moderate ascites and right sided minimal pleural effusion. Based on the history and clinical examination, the condition was diagnosed as *Jalodara* manifested due to *Yakrddalyudara*. The choice of treatment in this condition is *Nitya virechana* that eliminate accumulated *Dosha* from *Koshtha* and help in *Agni deepana*. Considering this, *Virechana* with *Haritaki churna* and *Go-mootra arka* and *Shamana* medications were administered in this case. At the end of the treatment; improvement was noticed in appetite, pedal edema and abdominal girth was reduced. Total bilirubin, direct bilirubin and SGOT were reduced and urine color became normal. These observations infer that Ayurveda treatment approaches are beneficial in cases where hepatic functions are altered and manifest in complications like ascites.

**Introduction:** Alcoholic Liver Disease (ALD) involves a process of progressive destruction and regeneration of liver parenchyma leading to fibrosis and cirrhosis. Excess alcohol intake can lead to a spectrum of liver diseases collectively known as ALD. Quantity and duration of alcohol intake are the most important risk factors involved in the development of ALD. Alcohol

intake of more than 60gm by men and 20gm by females per day will have high risk of ALD.<sup>[1]</sup> Daily intake of alcohol for more than 6 to 8 years significantly increases the risk of ALD. Indians develop cirrhosis with relatively lesser quantity and duration of alcohol intake, which may be due to other factors such as Hepatitis B and C co-infection etc.<sup>[2]</sup>

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The patho-physiology of ALD involves three stages viz, lipogenic hit, inflammatory hit and fibrogenic hit. Fatty liver is the earliest change and is almost universally

present in heavy alcoholics. It is generally a benign condition and usually reverses with abstinence. Alcoholic Hepatitis (AH) is a syndrome of necro-inflammation of liver due to heavy alcohol intake and occurs in 10 to 35% of such patients. Patients with more severe AH usually present with fever and signs of hepatocellular failure such as jaundice, ascites, encephalopathy and cirrhotic changes presents with jaundice, ascites and peripheral edema.<sup>[3]</sup>

Jaundice is usually due to failure of hepatocytes to excrete bilirubin resulting into conjugated hyperbilirubinemia. The normal parenchyma of liver is replaced by scar tissue in cirrhosis thereby increasing resistance to blood flow and higher pressure in portal venous system finally resulting in portal hypertension. Ascites is accumulation of fluid in the peritoneal cavity, which is sequel of portal hypertension.<sup>[4]</sup> The management of ascites in conventional science is by appropriate use of diuretics, paracentesis and other medications depending upon the cause and symptoms manifested.

Ayurveda describes *Jalodara* as a condition characterized by accumulation of fluid in *Udara* that may also manifest in association with conditions like *Yakridalyudara* (~Hepatomegaly).<sup>[5-6]</sup> Excessive consumption of *Ushna* (~hot), *Lavana* (~salty), *Kshara* (~alkaline), *Vidahi* (~improperly baked foods), *Amla* (~sour), *Ruksha* (~dry), *Viruddha ahara* (~incompatible foods) etc. in persons with *Mandagni* (~decreased digestive functions) aggravates *Pitta*, *Kapha* and *Vata* that obstructs *Udakavaha* and *Swedavaha srotas* drawing fluid into the *Udara* by *Upasneha nyaya* (~osmosis and altered capillary pressure) leading to accumulation of fluid in *Udara* and manifesting different forms of *Udara rogas*.<sup>[7-8]</sup> *Nitya virechana*, *Agni*

*deepana* and surgical interventions are the recommended procedures in the management of *Jalodara*.<sup>[9-10]</sup>

## CASE REPORT

A 38 years old, non-hypertensive, non-diabetic, male patient approached the OPD with chief complaints of *Kshudha alpata* (~decreased appetite), *Peeta netrata* (~icterus) and *Peeta mutrata* (~yellowish urine) since five months. *Udara utsedha* (~distended abdomen) since three months and *Pada shotha* (~pedal edema) since a month. He is known alcoholic and consumes minimum 90ml alcohol daily since three years. The quantity was increased to 180ml during the last year.

**Examination:** General examination reveals *Peeta netrata*, *Tandra* (~drowsiness) and *Ubhaya pada shotha* (~bilateral pedal edema). On examination; weight was 56kg, pulse rate was 74/minute and blood pressure was 110/60 mm Hg. On inspection; *Udara utsedha* with transverse umbilicus was observed. On palpation, abdomen was *Mridu* (~soft and non-tender). On percussion, *Udaka poorna druti sankshobha* (~fluid thrill), shifting dullness and horse shoe dullness were observed. USG abdomen revealed hepatomegaly with fatty changes suggestive of chronic liver disease, moderate ascites and right sided minimal pleural effusion. Liver function tests presented with elevated Bilirubin, SGOT and Alkaline Phosphatase. The *Satva* and *Samhanana* of the patient were of *Madhyama*. *Prakriti* was *Vata pradhana pittaja*, while *Sara* was *Rakta*.

**Diagnosis:** Based on the clinical presentation and examination with radiological and laboratory tests; the patient was diagnosed with chronic liver disease with

**Table No.1: Medicines used in the management**

	Medicine	Dosage	Duration
1	<i>Swarasa</i> of <i>Nimba patra</i> , <i>Guduchi</i> , <i>Bhringaraja</i> , <i>Bhumyamalaki</i> with 3gm <i>Katuki churna</i>	50ml twice on empty stomach at 10 am and at 6 pm	15 days
2	Cap. Cytozen (2.5gm)	Two capsules twice a day after food	15 days
3	Syrup Kalamegha strong	15ml thrice a day before food	15 days
4	Tab. Silybon (seed extract of <i>Silybum marianum</i> )	A tablet twice a day after food	15 days

Table No.2: Observations of abdominal measurements

Date	Circumference At umbilicus	1"above umbilicus	1"below umbilicus	Distance from Xiphisternum to umbilicus	Distance from Umbilicus to pubic symphysis
03.09.2016	35.7 inch	36.5 inch	34.5 inch	10.2 inch	5 inch
09.09.2016	35 inch	35.8 inch	33 inch	8.7 inch	4.9 inch
14.09.2016	35 inch	31.5 inch	31 inch	7 inch	4.5 inch

moderate ascites. This manifestation is compared with *Jalodara* due to *Yakriddalyudara*.<sup>[11]</sup>

**Treatment adopted:** *Nitya virechana* with 10ml *Go-mootra arka* (distilled Cows urine) added with 5gm of *Haritaki churna* (fine powder of *Terminalia chebula*) and 50ml of warm water was administered on empty stomach. *Udara lepa* (~application of a herbal paste over the abdomen) made up of fine powders of *Palasha beeja* (seeds of *Butea monosperma* (Lam.) Taub.), *Arka moola twak* (root bark of *Calotropis procera* (Aiton) W.T.Aiton), *Shigru moola twak* (root bark of *Moringa oleifera* Lam.), *Ashwagandha* (*Withania somnifera* (L.) Dunal), *Pippali* (*Piper longum* Linn.), *Devadaru* (*Cedrus deodara* (Roxb.) G.Don), *Vacha* (*Acorus calamus* Linn.) triturated with quantity sufficient of *Go-mootra arka*. *Shamana* medications include 50ml *Swarasa* (~fresh juice) extracted from equal parts of *Nimba patra* (leaves of *Azadirachta indica* (A. Juss.) Brandis), *Guduchi* (*Tinospora cordifolia* (Thunb.) Miers), *Bhringaraja* (*Eclipta prostrata* Linn.) and *Bhumyamalaki* (*Phyllanthus niruri* Linn.) added with 3gm powder of *Katuki* (*Picrorhiza kurroa* Royle ex Benth.), Cap. Cytozen (a proprietary formulation of Charak Pharma Pvt. Ltd.), Tab. Silybon-70 (extract of *Silybum marianum*) and Syrup *Kalamegha strong* (Table 1) for 15 days. The observations in the changes of abdominal girth and Liver Function Tests during and after the treatment are mentioned at Table 2 - 3.

**Discussion:** Ayurveda considers *Yakriddalyudara* under *Udara roga* comparable to hepatic enlargement in conventional system. In cirrhosis, liver is palpable in early stages, but as the condition progresses, it starts to shrink and cannot be palpable in advanced stages. Excess alcohol consumption, as seen in the current case leads to vitiation of *Pitta* and *Vata dosha*, *Rasa* and *Rakta*

*dushya* that in turn leads to accumulation of toxins in liver. The deranged *Rakta dhatu* gets accumulated in liver and spleen that are the *Raktavaha sroto moola* leading to their *Vridhhi* (~hepato-splenomegaly).<sup>[12]</sup> When the *Kapha dosha* blocks the vitiated *Rakta* in liver and spleen, hyperactivity of these organs results in altered blood profile leading to the manifestation of *Pandu* (~anaemia), *Kamala* (~jaundice) etc.<sup>[13]</sup> Persistent vitiation of *Dosha* get mobilized to the skin, where it get obstructed by *Vata dosha* producing *Shotha* (~inflammation).<sup>[14]</sup>

The treatment principle of *Udara roga* is *Nitya virechana* and *Dipana chikitsa*. *Nitya virechana* was planned to eliminate the *Sanchita dosha* (~accumulated toxins). As the patient is of *Madhyama bala*, *Vatapitta prakriti*, *Madhyama satva*; *Go-mootra arka* added with *Haritaki churna* was used for *Nitya virechana*. The patient was presented with bilateral pitting pedal edema, where *Kapha* plays a predominant role, demanding *Rukshana chikitsa*. A combination of *Haritaki* and *Go-mootra arka* also suits and can pacify this condition. 50ml *Swarasa* of *Guduchi*, *Nimba*, *Bhringaraja* and *Bhumyamalaki* mixed with 3gm of *Katuki churna* was administered twice daily on empty stomach for 15 days. *Guduchi* pacifies vitiated *Tridosha* and additionally it has *Rasayana* effect. *Guduchi* also has hepato-protective properties that prevents fibrous changes and promotes regeneration of parenchymal tissue.<sup>[15]</sup> *Punarnava* is



Fig 1. Before treatment



Fig 2. After treatment

Table No.3: Liver Function Tests

	Parameters	Before treatment on 04.07.2016	During the treatment on 19.08.2016	After treatment on 14.09.2016
1	Total bilirubin (mg/dl)	7.5	7.2	1.1
2	Direct bilirubin (mg/dl)	5.8	6.2	0.7
3	Indirect bilirubin (mg/dl)	1.7	1	0.4
4	SGPT (IU/L)	18	19	18
5	SGOT (IU/L)	193	99	25
6	Serum Albumin (g/dL)	3	2.6	3.0
7	Sr. Total Protein (g/dL)	5.9	6.5	6.8
8	A/G ratio	1.0	0.6	1.2
9	Alkaline phosphatase (IU/L)	126	156	131

preferred in the management of *Shotha* and *Pandu*.<sup>[16]</sup> It also has hepato-protective properties and help in decreasing albuminuria and increasing serum protein.<sup>[17]</sup> All these herbs being *Tikta rasa pradhana*, pacify aggravated *Kapha* and *Pitta dosha* that play major role in disease manifestation. *Bhringaraja* is also an hepato-protective drug and is indicated in *Kaphaja shotha* and *Pandu*.<sup>[18-19]</sup>

*Bhumyamalaki* is *Yakriduttejaka* (~hepato-stimulant), *Rakta shodhaka* (~blood purifier) and *Pitta rechaka* (~eliminates exacerbated *Pitta*).<sup>[20]</sup> Cap. Cytozen contains 56.25mg of *Mandura bhasma*, 112.5mg of *Arogyavardhini ras*, 67.5mg each of *Kakamachi* (*Solanum nigrum* Linn.) fruit and *Chitraka* (*Plumbago zeylanica* Linn.) root, 112.5mg each of pericarp of *Triphala* (*Terminalia chebula* Retz., *Terminalia bellerica* (Gaertn.) Roxb. and *Emblica officinalis* Linn.), 337.5mg each of *Punarnava* (*Boerhavia diffusa* Linn.) root, *Kumari* (*Aloe barbadensis* (L.) Burm.f.) leaf, *Kasni* (*Cichorium intybus* Linn.) seed, *Katuki* (*Picrorhiza kurroa* Royle ex Benth.) rhizome, *Bhunimba* (*Andrographis paniculata* (Burm.f.) Wall.) whole plant and *Sharapunkha* (*Tephrosia purpurea* (L.) Pers.) whole plant. *Katuki* possesses hepato-protective,<sup>[21]</sup> anti-viral and anti-oxidant activities. *Punarnava* exhibits anti-inflammatory activity, thus help in modulating inflammatory

responses and is advised in the management of *Shotha* and *Pandu*.<sup>[22]</sup> *Amalaki* is potent antioxidant and protects liver cells from free radical damage. In *Kalamegha* strong, *Bhunimba* is the potent drug, which reverses the altered hepatic biochemical parameters.<sup>[23]</sup> Tablet *Silybon* is made-up of *Silybum marianum* seed extract. It provides hepatocellular protection by stabilizing hepatic cell membranes. It alters the structure of the outer cell membrane of the hepatocytes in such a way as to prevent the penetration of the liver toxins into interior of the cell,<sup>[24]</sup> and helps in normalizing hepatic functions.

500ml of boiled milk per day in divided doses is advised in diet as it is *Sadya santarpaka*, *Snigdha virechaka* and is a good source of protein. 250ml of *Mudga amalaka yusha* twice daily is indicated as *Mudga* also is rich source of protein and light for digestion, thus compensates albumin depletion. *Amalaki* has hepato-protective activity and helps in elevating the serum protein levels.<sup>[25]</sup>

With the intervention of all these *Shodhana* and *Shamana* procedures; liver function tests showed marked improvement (Table 3), appetite was improved, abdominal girth at one inch above the umbilicus was



reduced from 36.5 inches to 31.5 inches (Fig 1-2). Pedal edema was also reduced significantly.

On discharge; the condition of the patient was good. Appetite and general health were improved. Direct, Indirect bilirubin and SGOT and Alkaline phosphatase levels were reduced considerably. Icterus was reduced slightly, pedal edema was completely reduced, urine color was changed from dark yellow to light yellow. On discharge, patient was prescribed with Syrup *Kalamegha* strong (15ml thrice in a day before food), Cap. Cytozen (two capsules twice a day) and *Punarnavadi kashaya* (15ml twice a day) for next 15 days. He has advised to avoid all precipitating etiological factors and follow dietary restrictions at least for three months. On the next follow-up visit, he was free from any of the complaints.

**Conclusion:** *Mandagni* and *Vaatadi dosha prakopa* is the main cause for *Udara* hence the basic principle to treat the *Udara* is *Deepana*, *Pachana* and *Tridosha shamaka kriya* along with *Nitya virechana*. Results observed in this case are encouraging and reveal importance of Ayurveda treatment modalities in the management of manifestations like Alcoholic Liver Disease.

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## Ayurvedic management of Chronic Scleritis (Sirajala)

Pundareekaksha Rao Punna\*, Prem Sankar<sup>1</sup>

Dept. of Shalakya Tantra, Ayurveda College, <sup>1</sup>Ayurvedic Physician, AVP (Netra), Coimbatore, Tamilnadu 641 402, India.

\*Correspondence: E-mail : dr.pundareeyash@gmail.com Mobile: +91 9492500902

### ABSTRACT

#### Key words:

*Lekhana anjana,*  
Scleritis,  
*Sirajala*

Scleritis is a systemic manifestation of sclera. Topical eye drops frequently are ineffective in this condition and systemic therapies can have serious adverse effects. No satisfactory treatment modalities are available in modern medicine for this condition. A case of 24 years old male, having severe red eye, conjunctival congestion extending from nasally and temporally towards cornea was attended successfully in this case. The patient was diagnosed to be suffering from *Sirajala* (~scleritis) and was treated with a combination of *Lekhana anjana* (~a type of collyrium) with oral Ayurvedic medicines for a month. *Mridu virechana* was done to eliminate *Doshas* of systemic level before starting the main treatment. After 15 days of treatment; redness and discomfort were disappeared. Pain, headache, discomfort were decreased, with slight redness around the nodule in the right eye, while left eye was normal after a month of treatment.

**Introduction:** Scleritis is a chronic inflammatory condition that primarily involves the episclera and sclera. Fifty percent of patients with Scleritis are diagnosed with an associated systemic disease including auto-immune conditions and infections.<sup>1</sup> The inflammatory process may extend to adjacent structures, causing several complications that may lead to loss of vision.<sup>2</sup> Topical eye drops are ineffective in this condition. Systemic administration of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), corticosteroids, non-steroidal immuno-suppressive agents or a combination of these drugs, is the mainstay of treatment given for Non-infectious Scleritis.<sup>3-4</sup> Though these therapies are beneficial, can lead to serious adverse effects. Systemic corticosteroids are often accompanied by a poor safety profile characterized by multiple adverse effects, such as fluid retention, hypertension, hyperglycemia, greater

susceptibility to infections, mood changes, osteoporosis, psychosis etc.<sup>4-5</sup> The systemic immuno-suppressive therapy for eye diseases has shown data regarding treatment with Biological Response Modifiers (BRM) for inflammatory diseases.<sup>6-7</sup> No satisfactory treatment modalities are available in modern medicine for this condition, further uncontrolled conditions may settle in complications. Considering which, satisfactory treatment modalities in other systems of medicines is being explored. This current case was successfully treated on the line of Ayurvedic management of *Sirajala*, one among the curable *Shuklagata rogas* (~diseases involving Sclera).

#### Case Report:

A 24 years old, non-smoking, non-alcoholic male reported to the OPD with progressive binocular redness, lacrimation, pain and photophobia along with mild discomfort and headache since one month. None of

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the family members had a history of Scleritis. He was suffering with similar symptoms since past three years, where remissions and exacerbations of the symptoms were experienced at the intervals of two months, each episode continuing for a fortnight. The condition was diagnosed as Scleritis by the Ophthalmologist for which, he was advised Prednisolone (1%) eye drops four times a day, atropine (1%) eye drops two times a day and Ofloxacin eye drops (0.3%) four times a day. Topical Moxifloxacin eye drops three times daily, oral Doxycycline 100 mg/day were also used by the patient under the supervision of an ophthalmologist. However, no significant relief was noticed in his condition; considering which, he stopped using allopathic medicines.

**Table 1 - Gradation of clinical features**

Redness of eye	
No redness, normal vessels	0
Poorly visible vessels (mild)	1
Clearly visible vessels (moderate)	2
Intensely congested vessels (severe)	3
Ocular pain	
Not present	0
Not disturbing (mild)	1
Disturbing (moderate)	2
Painful (severe)	3
Discomfort	
No discomfort	0
Slight discomfort	1
Moderate discomfort	2
Severe discomfort	3
Headache	
Not present	0
Mild headache	1
Moderate headache	2
Severe headache	3

On examination, the patient was found to be anxious, had disturbed sleep, moderate appetite, unstable digestive functions, hard stools and normal micturition.

Patient was of *Vatakapra prakriti* with medium stature. Respiratory, Cardio vascular functioning was normal. Pulse rate was 76/min, Blood pressure was 130/90 mmHg and Respiration rate was 18/min. No features of systemic autoimmune diseases, joint pain, oro-genital or skin ulcerations, rashes or photosensitivity to sunlight were observed. General grading of clinical features of Scleritis are presented at Table-1.

On slit lamp examination; eye lids and adnexa of both eyes were normal. Conjunctival congestion extending from nasally and temporally towards cornea was noticed. Pupils were round and reactive. A small nodule of around 3-4 mm diameter was noted in the right eye, at 4° clock position, little away from the limbus that was freely movable with the conjunctiva and episcleral tissue. Episcleral vessels on the same side were congested. No abnormality was noticed in cornea, iris or in anterior and posterior chambers. Extra-ocular movements were normal. There were no relative afferent pupillary defects. Intra-ocular pressure was normal in both the eyes. Fundus examination of both eyes did not reveal any pathology. The best corrected visual acuity was 6/9 in right eye and 6/6 in left eye. Hematological investigations were done in April 2017 (Table 2). C-Reactive Protein was negative, Human Leukocyte Antigen (HLA-B27) was positive and Urine routine examination revealed presence of Albumin, 1-2 pus cells/HPF and traces of Urine bile pigment. RA factor, uric acid and Anti Neutrophilic Cytoplasmic Antibody (ANCA) were within the normal limits. Written informed consent was obtained from the patient before starting the treatment.

**Table 2: Hematological investigations before treatment**

Parameter	Values
Hb (g/dL)	11.6
TLC (cumm)	6700
ESR (mm/h)	60
CT (min)	9
BT (min)	3

#### Treatment:

*Mridu virechana* with 3gm of *Avipattikara churna* and 10 ml of *Eranda taila* (Castor oil) followed by lukewarm

water was done at 5 AM during the first three days that helped him to pass bowels smoothly followed by *Vata anulomana* (~downward movement of *Vata*) without any complications. After *Mridu virechana*, the patient was applied with one drop of *Chandanadi anjana* in both eyes in the morning and evening along with a tablet (250 mg) of *Saptamruta loha* followed by 15 ml of *Pathyakshadhatryadi kashaya* thrice a day before food and *Triphala guggulu* (250 mg) and *Gandhaka rasayana* (325 mg) along with milk thrice a day after food. These medicines were administered for thirty days. During the treatment period; the patient was advised to foment his eyes with a clean cotton fabric soaked in lukewarm water. In addition; patient was advised not to consume mustard oil, other oily foods, diet predominant in *Amlarasa* (~sour in taste), exposure to dust and awakening till late nights.

**Results:** After one month of treatment; more than 80% reduction was noted in pain, headache and discomfort in both eyes except mild redness around the nodule in right eye. Changes observed in the symptoms before and after treatment are placed at Table 3.

**Follow up:** After 30 days of treatment; patient was followed-up on 3<sup>rd</sup>, 7<sup>th</sup> and 15<sup>th</sup> day and examined by Slit lamp and ophthalmoscope. Hematological examination revealed non-significant changes in all parameters except ESR that is reduced to 20 mm/hr from 60 mm/hr. On 3<sup>rd</sup> day, discomfort in left eye and headache were reduced but pain and redness were continuing. On 7<sup>th</sup> day, change was observed in the redness and there were no complaints of pain or headache. Reduced congestion up to 80% percent and no discomfort were noticed by

the end of 15<sup>th</sup> day. At this stage, a few episcleral vessels were observed around the nodule in Right eye.

## Discussion:

Scleritis is a chronic, painful, and potentially blinding inflammatory disease that is characterized by oedema and cellular infiltration of the scleral and episcleral tissues.<sup>8</sup> *Maha jalabha kathina sira* (~red and extensive network of hardened veins) spreading over the *Shukla mandala* (sclera) is seen in *Sirajala* as observed in the current case.<sup>9</sup> In right eye a *Sirapidaka* (~a white nodular growth near the limbus covered over the veins) was also noticed.<sup>9</sup> *Sirotpata* [characterized by *Shukla mandala* full of *Akshiraja* (~corneal congestion) associated with *Daha* (~burning sensation), *Vedana* (~pain)] and *Siraharsha* [characterized by *Ati akshiraja* (~intense corneal congestion), *Asra sravana* (~blood stained discharge), *Na shaknotyabhivikshitam* (~unable to see objects)] were the conditions differentiated from the current case.<sup>10</sup> According to *Susruta*; *Sirajala* and *Sirapidaka* are *Shuklagata rogas* (diseases of sclera),<sup>11</sup> while *Sirotpata* and *Siraharsha* are *Sarvagata roga* (diseases involving entire eye).<sup>12</sup> *Vagbhata* mentioned all these diseases under *Shuklagata roga*.<sup>13</sup> *Chedana*, *Lekhana anjana* and oral medicines are the main line of treatment in *Sirajala*.<sup>14</sup>

*Avipattikara churna*<sup>15</sup> (3gm) mixed with 10ml of *Eranda taila* (Castor oil) was given for initial three days. It causes *Mridu virechana* (~mild purgation) and *Dosha anulomana* thus employed before treatment for elimination of exacerbated *Doshas*.

Ingredients of *Chandanadi anjana* possesses *Tikta*,

**Table 3: Scoring of different parameters observed during the treatment**

Clinical features	Before treatment		On 3 <sup>rd</sup> day		On 7+ day		On 15 <sup>th</sup> day	
	RE	LE	RE	LE	RE	LE	RE	LE
Redness	3	3	3	2	2	1	1	1
Pain	2	2	2	1	0	0	0	0
Discomfort	2	2	1	0	0	0	0	0
Headache	2		1		0		0	

RE - Right Eye, LE - Left Eye

*Kashaya*, *Madhura rasa*, *Laghu*, *Ruksha guna*, *Ushna virya*, *Tridosha hara* mainly *Kapha vatahara*.<sup>16</sup> Ingredients of *Pathyakshadhatryadi kashaya* possesses *Tikta*, *Kashaya rasa* and *Rasayana*, *Vrana ropana* properties.<sup>17</sup> *Tikta rasa* is *Pitta hara* and *Kashaya rasa* is *Vrana ropaka*.<sup>18-19</sup> Besides pacifying the aggravated *Doshas*, contents of *Triphala guggulu* will be helpful as Anti-oxidant and anti-inflammatory agents that also play a crucial role in the management of Scleritis.

*Gandhaka rasayana* is useful in pathologies manifested due to aggravated *Vata* and *Kapha* and in cough, dyspnea, dyspepsia etc.<sup>20</sup> This is equally effective in pathologies of skin and mucous membrane, eye diseases and is useful as a potent *Rasayana*. Ingredients of *Saptamruta loha* pacifies all the three *Doshas* predominantly of *Pitta*.<sup>21</sup> The ingredients are useful as *Rasayana*, *Sroto shodhaka*, *Rakta shodhaka*, *Vrana ropaka* and possesses Anti-oxidant and Anti-inflammatory activities. Various glycol proteins, lipids, essential amino acids, glycerol, gallic acid, chebulic acid, tannin, vitamin C (of *Amalaki*), B Complex (of Honey), A (of Cow ghee), E (of Honey and cow ghee) also may play a crucial role in breaking the pathology at different levels. Currently, the patient is under follow-up and taking *Gandhaka rasayana*, and *Triphala guggulu*. No relapses have been noticed after the treatment.

## Conclusion:

Ayurvedic treatment approaches followed in the current case including *Lekana anjana* and oral drugs after *Mridu virechana* are beneficial in treating Scleritis. Such approaches may be taken into consideration in large scale population to evaluate the efficacy through well-designed protocols.

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#### Composition of Avipattikara churna

	Ingredient	Botanical Name	Part used	Proportion
1	Shunthi	<i>Zingiber officinale</i> Roscoe.	Processed Rhizome dried	1 part
2	Maricha	<i>Piper nigrum</i> Linn.	Dried fruit	1 part
3	Pippali	<i>Piper longum</i> Linn.	Dried fruit	1 part
4	Haritaki	<i>Terminalia chebula</i> Retz.	Dried pericarp	1 part
5	Vibhitaki	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Dried pericarp	1 part
6	Amalaki	<i>Phyllanthus emblica</i> Linn.	Dried pericarp	1 part
7	Musta	<i>Cyperus rotundus</i> Linn.	Dried rhizome	1 part
8	Vid lavana	–	Salt	1 part
9	Vidanga	<i>Embelia ribes</i> Burm.f.	Dried fruit	1 part
10	Ela	<i>Amomum subulatum</i> Benth. & Hook.f.	Dried seed	1 part
11	Patra	<i>Cinnamomum tamala</i> Buch.-Ham.	Dried leaf	1 part
12	Lavanga	<i>Syzygium aromaticum</i> (L.) Merrill & Perry	Dried flower bud	11 parts
13	Trivrit	<i>Operculina terpeethum</i> (L.) Silva Manso	Dried root	44 parts
14	Sharkara	-	Sugar candy	66 parts

**Composition of Chandanadi anjana**

	<b>Ingredient</b>	<b>Botanical Name</b>	<b>Part used</b>	<b>Proportion</b>
1	<i>Rakta chandana</i>	<i>Pterocarpus santalinus</i> Linn. F.	Dried heart wood	1 part
2	<i>Amalaki</i>	<i>Phyllanthus emblica</i> Linn.	Dried pericarp	1 part
3	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Dried pericarp	1 part
4	<i>Vibhitaki</i>	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Dried pericarp	1 part
5	<i>Puga</i>	<i>Areca catechu</i> Linn.	Dried fruit	1 part
6	<i>Palasha</i>	<i>Butea monosperma</i> (Lam.) Taub.	Dried seeds	1 part

**Composition of Triphala guggulu**

	<b>Ingredient</b>	<b>Botanical Name</b>	<b>Part used</b>	<b>Proportion</b>
1	<i>Amalaki</i>	<i>Phyllanthus emblica</i> Linn.	Dried pericarp	1 part
2	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Dried pericarp	1 part
3	<i>Vibhitaki</i>	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Dried pericarp	1 part
4	<i>Pippali</i>	<i>Piper longum</i> Linn.	Dried fruit	1 part
5	<i>Guggulu</i>	<i>Commiphora wightii</i> (Arn.) Bhandari	Processed oleo-gum resin	5 parts

**Composition of Saptamruta loha**

	<b>Ingredient</b>	<b>Botanical Name</b>	<b>Part used</b>	<b>Proportion</b>
1	<i>Amalaki</i>	<i>Phyllanthus emblica</i> Linn.	Dried pericarp	1 part
2	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Dried pericarp	1 part
3	<i>Vibhitaki</i>	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Dried pericarp	1 part
4	<i>Yashtimadhu</i>	<i>Glycyrrhiza glabra</i> Linn.	Dried stem	1 part
5	<i>Loha bhasma</i>	-	Calcined iron	1 part
6	<i>Madhu</i>	-	Honey	Quantity Sufficient
7	<i>Ghrita</i>	-	Ghee	

**Composition of Gandhaka rasayana**

	<b>Ingredient</b>	<b>Botanical Name</b>	<b>Part used</b>	<b>Proportion</b>
1	<i>Suddha gandhaka</i>	–	Processed Sulfur	1 part
	<i>Twak</i>	<i>Cinnamomum zeylanicum</i> Blume.	Dried stem bark	Processed Sulfur is to be sequentially levigated eight times each in the liquids of these drugs
	<i>Ela</i>	<i>Amomum subulatum</i> Benth. & Hook.f.	Dried seed	
	<i>Patra</i>	<i>Cinnamomum tamala</i> Buch.-Ham.	Dried leaf	
	<i>Nagakesara</i>	<i>Mesua ferrea</i> Linn.	Dried fruit	
	<i>Guduchi</i>	<i>Tinospora cordifolia</i> (Thunb.) Miers	Dried stem	
	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Dried pericarp	
	<i>Vibhitaki</i>	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Dried pericarp	
	<i>Amalaki</i>	<i>Phyllanthus emblica</i> Linn.	Dried pericarp	
	<i>Aushadha</i>	<i>Zingiber officinale</i> Roscoe.	Processed dry Rhizome	
	<i>Brungaraja</i>	<i>Eclipta alba</i>	Dried whole plant	
	<i>Ardaraka</i>	<i>Zingiber officinale</i> Roscoe.	Dried rhizome	
2	<i>Sharkara</i>	–	Sugar candy	Equal to the Sulfur remained at the end of legation process

**Composition of Pathyakshadhatryadi kashaya**

	<b>Ingredient</b>	<b>Botanical Name</b>	<b>Part used</b>	<b>Proportion</b>
1	<i>Amalaki</i>	<i>Phyllanthus emblica</i> Linn.	Dried pericarp	1 part
2	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Dried pericarp	1 part
3	<i>Vibhitaki</i>	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Dried pericarp	1 part
4	<i>Bhunimba</i>	<i>Andrographis paniculata</i> (Burm.f.) Wall.	Dried whole plant	1 part
5	<i>Haridra</i>	<i>Curcuma longa</i> Linn.	Dried rhizome	1 part
6	<i>Guduchi</i>	<i>Tinospora cordifolia</i> (Thunb.) Miers	Dried stem	1 part
7	<i>Nimba</i>	<i>Azadirachta indica</i> A.Juss.	Dried stem bark	1 part





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An Autonomous Organization under the Ministry of AYUSH, Govt. of India  
Mathura Road, Gautam Puri, Sarita Vihar, New Delhi - 110076

Phone: 011-29948658

**[aiiaayucare@gmail.com](mailto:aiiaayucare@gmail.com)**