Cloud Publications
International Journal of Advanced Ayurveda, Yoga, Unani, Siddha and Homeopathy
2016, Volume 5, Issue 1, pp. 310-321, Article ID Med-282
ISSN: 2320 – 0251

Research Article | Open Access

Kovidar- A Holistic Ayurvedic Approach

Ankita Abhijeet Shirkande[1] and Abhijeet Sarjerao Shirkande[2]

[1]Department of Rasashastra, D.Y. Patil College of Ayurveda, Pimpari, Pune, India
[2]Department of Dravyaguna, D.Y. Patil College of Ayurveda, Pimpari, Pune, India

Publication Date: 15 March 2016

Article Link: http://medical.cloud-journals.com/index.php/IJAAYUSH/article/view/Med-282

Abstract Maharashtra is part of mega diverse country India. Internally, it is richly diverse in itself. From biodiversity to cultural diversity, Maharashtra has unmatched variety. Festivals in this state are varied too. One of the festivals is Dassera. This is celebrated by greeting each other with leaves of Shami. Apart from festive importance, Kovidar or Kanchanar has immense medicinal value too. Ayurveda people routinely use this drug by many aspects. Present paper elaborates use of Kovidar by Vaidyas and tribal people.
Keywords Kovidar; Kachnar; *Bauhinia Variegate; Vata; Pitta; Kapha; Gandmala*

1. Introduction

1.1. *Kovidar (Bauhinia variegata Linn.)*

Nighantu View

Bhavmishra described Kovidara & Kanchanarnas two varieties. But Dhanvantari & Raj Nighantu mention the two names synonymous. However Tamrapushpa synonym is given to Kovidara by bhavmishra. In Shivadatta Kosha, it is described that Kanchanara possess red flowers & grown to limited height, on the other hand, kovidara possess the white flowers, strong branches.

Kanchan means Suvarna (Gold). The plant used in incineration process of Suvarna Bhasma is named as Kanchnar. According to Bhavprakash Nighantu, Kanchnar is classified as Kanchanar and Raktakanchanar (Kovidar) depending on Flower color whereas Kovidar is explained as a synonym for Kanchanar by Rajnighantu. Again Kovidar is stated as synonym for Ashmantak by Bhavprakash. Kanchanar is classified in to 3 types by Nighantu ratnakar as Peeta, Rakta and Shweta.

Veda & Samhita View

Kovidar is the original name of Kanchanar during Vedic and Samhita period.
Vedic literature considers its stems are forbidden for rituals. Its utility is relatively less in the Bruhat trayi Period. Charak considered it as Vamanopag while Sushruta also described it as vamana

(Urdhvabhaghara). Shushrut also clarified that the root is useful part of Kovidar (S.S.Su. 39/3). While the practice at present is to use stem bark. Another important aspect about Kovidar is that it is described along with Karbudar i.e. white variety of Kovidara. This variety is identified as Bahuhinia alba. Karbudara is described only once by Vagbhata (A.H.K. 1/7). It is mainly known for its action on lymphadenitis. Hence the name Gandari.

Controversial Studies

There is some controversy in the identity of Karbuudarasince Dalhana treated it as a variety of Kanchanara or as Shleshmantaka (Bahuvara). In one content it is described along with Selu (S.S.Su. 46/249). Selu is the synonym of Shleshmantaka. Thakurji consider it as B. Variegata Linn. He opines that it may be another plant since a plant Rajjudara described in the Vedic literature is identified by the commentators with Karbudara. It is described as possessing a fruit resembling penis (Shishna) in appearance. This plant may be Olare sccindes Roxb.

In general B. Purpura is less available when compared with B. Variegata. In my opinion that another species B. Tomentosa possessing yellow flowers & yellowish bark is Kanchanar. Since it is traditionally used by some vaidyas.

Different Varieties

Kovidara & Karbudara are described in the samhitas. Chakrapani quoted that the flowering of Kovidar & Karbudara occurs in Sharada & Vasant rutu respectively. (C.S.K.2)

Mostly used Bauhinia variegata Linn. (Fabaceae) is a valued medicinal plant. Besides this, B. tomentosa Linn., B. racemosa Lam., B. retusa Roxb., B. vahlii Wight and B. purpurea Linn. have also been reported to have medicinal value. Kachnar is a Vrikshya i.e. medium sized deciduous tree with dark brown, smooth bark. Flowers large, fragrant, white or purplish, appearing when the tree is leafless. Young shoots brown-pubescent. It is distributed in sub-Himalayan tract and outer Himalayas of Punjab, ascending to 1300 m from the Indus eastwards, Kumaon between 200-2000, in Sikkim, extending from India to Burma and China. Abundantly available all over India & Shrilanka.

1.2. Common Name: Mountain Ebony

Sanskrit: Ashmantaka, Asphota, Chamari, Chamarika, Champavidala, Gandari, Girija, Kanakaprabha, Kanchanala, Kanchana, Kanchanara, Kanchanaraka, Kantar, Karaka, Karbudara, Karbudara, Kovidara, Kuddala, Raktapushpa, Shonapushpaka, Suvarnara, Svalpakkesara, Tamrapushpa, Uddalaka, Yamalachada, Yugapatraka, Yugmapatra

Marathi: Kanchan, Raktakanchan, Koral
Hindi: Barial, Gurial, Gwiar, Kachnar, Kandan, Kaniar, Khairwal, Khawairaal, Koliar, Padrian
Konkani: Kanchan
Gujarati: Champakati
Bengali: Raktakanchan
Malayalam: Kovidaram, Suvannamandaram, Unna, Chuvannamandaram
Mundari: Burju, Buruju
Tamil: Mandarai, Segappumandarai, Semmandarai, Vellaippuvatti.
Telugu: Bodanta, Devakanjanamu, Kanjanamu, Mandara, Mandari
Urdu: Kachnal
Uriya: Boroda, Kosonaro, Kanjoni, Ronga-Konjono.

Kol: Juraju, Buja, Vuranga
Kannad: Keyumandar

1.3. Across the World, Kovidar is Known As

Burmese: Bwaycheng, Bwechin
Canarese: Arisinantige, Ayata, Bilikanjivala, Irkubalitu, Kanjivala, Karalabhogi, Kempukanjivala, Kempumandara, Mandara, Ulipe
French: Arbe de saint Thomas, Bauhinie panachee (Kirtiker and Basu, 1935).

Known to Tribal and Non-Tribal People As

Santhals: Kouar, Buriju-dar
Saora: Boda, Rovilara
Lodhas: Koch-nar

Ayurveda view

Rasa- Kashaya
Veerya- Sheeta
Vipaka- Katu
Doshakarma- Kapha-Pittashamaka
Guna- Laghu, Ruksha

2. Charak Samhita and Sushruta Samhita

The root is prescribed in combination with other drugs for the treatment of snakebite (Anonymous, 1963).

Ayurveda employs kovidar in the preparation of several medicines/formulations/decoctions for the treatment of various ailments. Fresh bark of kovidar mixed with dry ginger pounded with sour gruel is an excellent remedy for goiter. Decoction of Kachnar and pippali (*Piper longum* Linn.) powder or swarna bhasma is also beneficial (Sharma, 1996).

_ ***Bhavprakash***

Both types are Sheet (Cold Potency) and useful in Malavrodha (Constipation), Krumi (Worms), Kushtha (Skin Diseases), Gudabhransha (Rectal Prolapse), Gandmala (Cervical lymphadenitis), Raktapradar (Menorrhagia), Kshaya (Tuberculosis), Kasa (Cough), Apachi (Neck Swelling).

In Vrana (Wound), Kanchanar decoction along with Guggul is used internally as well as externally for prakshalana.

Flowers with sugar used as mild laxative.
Root powder is used in Arsha (Haemorrhoids) with buttermilk.
Root decoction is used in Apachana & Adhmana (Indigestion).
In Masurika (Chickenpox), its decoction is advised along with Suvarnabhasma.
Gargles of Kovidar, Khadirphala, Dadimpushpa decoction is useful in excessive salivation & throat diseases.

Flower powder & honey linctus is given in Raktapitta (Haemorrhage) even its leaves in form of vegetable, are also advised.

Excess dose may be responsible for Vomiting or loose motions.

_***Vanoushadhi Gunnadarsha***

Grossly Kanchanar is classified in 3 types as Red, white & Yellow.

Rakta (Red) Kanchanar bark has Sheeta (Cold Potency), Sarak, Agnideepan (Increase digestion) properties. It is used in Vrana (Wound), Krumi (Worms), Gandamala (Cervical lymphadenitis), Raktapitta (Haemorrhage), Kushtha (Skin disease), Gudabhransha (Rectal Prolapse). Whereas flowers are used Pradar (Menorrhagia), Kasa (Cough), Raktavikaras (Blood purifier).

Shweta (White) variety is used in Shwas (Asthama), Kasa (Cough), Raktavikara (Blood purifier), Vrana (Wound), Pradar (Menorrhagia)

Peet (Yellow) Kanchanar is basically used in Mutrakruccha (Dysuria) & pacify Kaphavata. Its bark decoction along with Shunthi powder is to be administrated for 42 days in Gandmala (Cervical lymphadenitis).

_ ***Aushadhi Sangrah***

According to Vd Vaman Ganesh Desai, Kanchanar's principle action is on Skin & Lymphatic channels.

_***Gharguti Aushadhe***

Vd Aapashastri Sathe explained that it can be used in any types of Cysts, for regulation of menstrual cycle, in treatment of Prameha pitika (Diabetic Carbuncle).

3. Therapeutic Use

Cures intestinal worms, leprosy, tumour, wounds, ulcers and goiter.

It also cures diarrhoea, dysentery, inflammations, scrofula, proctoptosis, haemorrhoids, haemoptysis, menorrhagia and diabetes. Kanchanar is good for the skin & also benefits in prolapsed of anus. Kanchanar is specially recommended for extra growth in thyroid. There are two varieties of Bauhinia- red and white**.**

3.1. Red Flowered Variety

The bark acrid, cooling, laxative, appetising, astringent to bowels in lower doses, cures biliousness, ulcers, tuberculosis and leprosy. The flowers are acrid, dry, sweet, cooling, astringent, galactagogue, cure diseases of the blood, bronchitis, consumption, vaginal discharges, biliousness and headache. The juice of the root is given internally in snakebite.

3.2. White Flowered Variety

The bark is acrid, sweet, appetising, cooling, astringent to the bowels, cures biliousness, leucoderma, anal troubles, tuberculosis, cough, asthma, diseases of the blood, ulcers, vaginal discharges; anthelmintic, used in strangury, thirst and burning sensation (Kirtiker and Basu, 1935).

_ Roots carminative, decoction prevents obesity. Bark tonic and anthelmintic, used in scrofula and cutaneous troubles; bark as well as flowers used as pot herbs; flower buds pickled. Leaves and pods eaten as a vegetable. Leaves used for bidi manufacturing. Wood used for agricultural implements (Anonymous, 1986).

The tribal and non-tribal people of different areas use the plant in several ways for the treatment of skin diseases (leucoderma and leprosy), wounds, ulcers, cough, dysentery, snakebite, tumors, flatulence, indigestion, piles and also lots of other ailments.

_ Lodhas prescribe root bark decoction, about 15 ml per day for reducing obesity. They apply stem bark paste in the treatment of leucoderma and take fresh flower paste with sugar (2: 1 w/w) as a laxative (Plate-4-I).

_ Mundas give flower decoction 20 ml to women as a galactogogue and prescribe dried flower bud powder with water (1: 3 w/v) as vermifuge.

_ Santhals give powder of flower buds with paste of black peppers (5: 3 w/w) to women to regulate vaginal discharge.

_ Andh and Bhil use the leaf as laxative.

_ Chakma use the flower for the treatment of women's diseases.

_ Bhoxas of U.P. use the flower for cure of diarrhoea and dysentery and bark for the cure of malaria and bleeding piles. The bark is also used for the treatment of snakebite and ulcers; the flower and bark both for curing tumors and root and root bark both for the treatment of obesity and indigestion in different parts of Uttar Pradesh (Shah and Joshi, 1971; Sharma et al., 1979; Bhalla et al., 1982 and Megoneitso and Rao, 1983).

_ The flower is used to cure diarrhoea and both leaves and flowers are eaten in North-Eastern regions of the country (Bhargava, 1959; Gupta, 1962; Jain and De, 1966; Ball, 1967; Rajwar, 1983; Pal, 1984 and Negi et al., 1985).

_ Plant bark is used for the treatments of leprosy and scrofula in Maharashtra, Madhya Pradesh and Andhra Pradesh.

_ The young unopened flowers of *Bauhinia purpurea* and *Bauhinia variegata* find way to tribal marekts of Garo, Kuki and Mizo tribe along with the flowering twigs (acidic in taste) of *Vaccinum serratum* Wight and are eaten cooked (Jain, 1997).

_ In the Konkan, the juice of the fresh bark is given as an expectorant and the bark is used with dried ginger (*Zingiber officinale* Rosc) as an internal remedy for scrofula (Kirtiker and Basu, 1935) (Plate-4-I).

_ In Indo China and Philippine islands, an infusion of the new flowers is given in dysentery.

_ South Indians use decoction of the leaves to allay headache in malarial fever.

_ Its bark reported to be used in dyeing to obtain various fast shades of brown colour. The plant is good fodder for cattles (Anonymous, 1956)

_ According to ancient Hindu literature, red flowers of Kachnar are compared with women's beauty.

_ Kachnar is considered as sacred to Buddha (Pal and Raychaudhary, 1982). *Bauhinia variegata* is widely used in Ayurvedic and Yunani medical system. Ayurvedic literature describes the plant in Sanskrit in the form of a poem. Review Article ISSN 2250-0480 Vol 2/Issue 4/Oct-Dec 2012 L – 72 Life Science Ethno botany Kachnar is astringent, cool and acrid in taste.

4. Specific Action

- Constipating, depurative, anthelmintic, vulnery and anti-inflammatory.

- The alcoholic extract of B Variegata (bark) showed C.N.S. activity. Besides producing hypothermia in mice. It also responded to amphetamine hyperactivity test.

- Th alcoholic extract of B. Racemosa (bark) was found to have anti – cancer activity against human epidermal carcinoma of the nasopharynx in tissue culture.

- Its used in the treatment of experimental goiter in rats.

_Yunani

The bark is astringent to the bowels, liver tonic, cures bilousness, leucoderma, leprosy, dysmenorrhoea, menorrhagia, impurities of the blood, tuberculosis, asthma, wounds and ulcers; used as a gargle in stomatitis. The buds are acrid; indigestible; used in piles, cough, eye diseases, liver complaints; astringent to the bowels, styptic in haematuria and menorrhagia.

5. Bauhinia Purpurea Linn

5.1. Common Name: (Purple Mountain Ebony)

Hindi: Gairal, Kaliar, Kandan, Katniar, Khairwal, Koilari, Koinar, Sona
Sanskrit: Raktapushpakovidara
Marathi: Atmatti, Deva Kanchana, Rakta Kanchan
Tamil: Kalavilaichi, Mandarai, Peddiari
Telugu: Bodanta, Kanjanamu
Bangali: Devkanchana, Raktakanchana
Uriya: Boroda, Debokanjoro
Burma: Mahahlegani

5.2. It is known by Various Names by Different Tribes

Bhil: Kanchana
Santhals: Baper

Lodhas: Kochner, Sing-ara
Mundas: Sapidanka

_ Lodhas prescribe root bark paste with rice water (water obtained after washing rice) (3:1 w/v) for ripening of boils. They use pounded stem bark in the treatment of rheumatism and give dried flower powder as laxative.

_ Oraons give dried root powder with water (2:3w/v) to patients suffering from rheumatism.

_ Mundas prescribe dried root powder with Brassica oil (1:1w/v) as balm on cuts and wounds. They apply stem bark paste for healing bone fracture (Pal and Jain, 1998).

_ Bhoxa use the bark as an astringent.

_ Khasi tribe and non-tribal people of Assam region use stem in bone fracture, flower in indigestion and bark is used for curing of small pox.

_ In South India, Sikkim, Bengal, Bihar and Orissa, leaf is used for the treatment of jaundice and for cure of wounds and tumour in stomach (Jain and De, 1966; Sharma et al., 1979; Kumar et al., 1980; Karnick et al., 1981; Rao and Jamir, 1982 and Apparanantham and Chelladurai, 1986).

_ It is eaten as vegetable in different parts of India like U.P., North-East region and central part of India (Gunjatkar and Vartak, 1982).

_ Naga use the plant as an antidote to certain toxins and poisons (Bedding, 1927; Jain and Tarafder, 1970 and Rao and Jamir, 1982).

6. *Bauhinia vahlii Wight and Arn.*

6.1. Common Name: *Malucreeper Bauhinia or Camel's Foot Climber*

Sanskrita: Kovidar, Yugmapatra, Pruthakparni
Marathi: Chambal, Chambil, Chambura, Charbor, Maljan
Hindi: Jallur, Malghan, Maljan, Maljhan, Mahul, Malo, Malu, Maulein, Maurain
Bangali: Chehur
Tamil: Mandarai
Telugu: Adattige, Madapu, Muduka
Uriya: Shiali, Shioli, Siyali

6.2. It is known by Various Names by Different Tribes

Saora: Addotige
Santhals: Birgungunari, Siharichop
Lodhas: Sehari, Jomlar
Oraons: Lamaklar

Oraons prescribe root juice with curd (2:1 v/v) as cure of dysentery.

Lodhas give stem bark paste with butter milk and rice beer (2:1:1) thrice a day, in the treatment of diarrhoea. They apply leaf paste with paste of black peppers (2:1w/w) on boils for suppression. They

apply mucilage of stem bark to cattle for healing bone fracture. These people extract vegetable tannin from stem bark and use it for tanning the skin of coldblooded animals.

Lodhas and Santhals use the dichotomous tendrils as magical safeguard against evil activities of supernatural powers. Santhals use the plant in stomachache and dysentery (Jain and Tarafder, 1970).

Flower is used as an antifertility agent in Bihar.

Bhoxa tribe and non-tribal people of Tehri Garwal region use the seeds as an aphrodisiac and tribes of Terai region of Gorakhpur district use the seeds as vermifuge (Sharma *et al.,* 1979).

Bhumiya and Agariya tribe of Madhya Pradesh use the leaf for making cigarettes Review Article ISSN 2250-0480 Vol 2/Issue 4/Oct-Dec 2012 L – 74 Life Science Ethno botany (bidis) and the seeds as tonic (Jain, 1963; Sharma et al., 1979 and Roy and Chaturvedi, 1987)

Fruits are eaten in West Bengal, Maharashtra and Goa.

Seeds are also eaten as vegetable in Morni and Kalesar of Haryana, Bastar district of M.P. and Kumaon (Jain, 1963, 1964; Ball, 1967; Vartak, 1981; Maji and Sikdar, 1982; Gunjatkar and Vartak, 1982; Jain, 1984 and Bhujel et al., 1984). According to Ayurvedic literature, the seed possesses tonic and aphrodisiac properties. Leaves are demulcent and mucilaginous.

7. *Bauhinia Racemosa Lamk.*

7.1. Common Name: *Common Mountain Ebony*

Hindi: Ashta, Asoda, Dhorara, Ghila, Kachnal, Marvil, Maula
Sanskrit: Anupushpaka
Marathi: Apata, Apta, Kanraja, Seyara, Shiara
Tamil: Ar, Arai, Aram
Telugu: Adiviyavise, Are
Uriya: Omborda

7.2. Names known by Different Tribes

Santhals: Beriju
Lodhas: Kaimu
Oraons: Ambulata

_ Lodhas use dried root bark powder as vermicide and they prescribe stem bark decoction with that of Gara-Ratan (*Terminalia arjuna* (Roxb.)Wt.and Arn.) (2:1) in the treatment of throat diseases. They give this gum along with long pepper decoction (1:1) to patient in brain tumours. Decoction of leaves is taken in the treatment of malarial fever.

_ Santhals give root bark decoction with paste of black peppers (3:1) to epileptic patients. They rear fine fibres from the stem bark and use it for stitching of deep cuts on animal body (Pal and Jain, 1998).

_ Oraons use fresh leaf paste as a remedy for urinary diseases.

_ Some ethnic communities give stem bark extraction with cow milk (3:2) as cure of glandular inflammation.

_ Bhils use the stem fibre for making baskets (Joshi, 1982).

_ Tribes of Western region of country use the leaf in making Bidi (Mittre, 1981).

_ Bhils of Rajasthan use the plant bark in diarrhoea and dysentery and eat the fruits.

_ ***Ayurveda***

Stem bark is used for dysentery and diarrhoea and as an astringent. Leaf is used for malaria and headache. The fibre is used to stitch wounds. The plant is also used to cure skin diseases like leprosy and leucoderma. The gum is used medicinally in South India (Kirtiker and Basu, 1935).

8. *Bauhinia Retusa Roxb.*

8.1. Common Name: *Semla*

Hindi: Kanalla, Kandalu, Kandla, Kanla, Kwayral
Telugu: Goddukura, Godduyare, Godi-sep
Soara: Are

8.2. This Plant is also Medicinally Important

_ Santhals use the plant for curing cholera and snakebite (Jain and Tarafder, 1970).
_ Gum is applied on sores and leaf bud is eaten in Garhwal region of U.P.
_ Some Indian practitioners consider it as an emmenagogue and diuretic.

9. *Bauhinia Tomentosa Linn.*

9.1. Common Name: *Wild Champak*

Sanskrit: Aswamantaka, Phalgu
Marathi: Sona
Hindi: Kachnar, Kanchana
Tamil: Kanjini
Bark Consist of tannin also it secrets resin.

In the Malabar Coast, a decoction of the root bark is administered in inflammation of the liver. Review Article ISSN 2250-0480 Vol 2/Issue 4/Oct-Dec 2012 L – 75 Life Science Ethno botany. The native practitioners in Southern India prescribe the small dried buds and young flowers in dysenteric affections.

The decoction of the root bark is also used as vermifuge.

The bruised bark is externally applied on tumours and wounds.

The fruit is diuretic; an infusion of the bark is used as an astringent gargle (Kirtiker and Basu, 1935).

Sushruta Samhita: All parts of the plant are recommended in combination with other drugs for the treatment of snakebite and scorpion sting. In the case of snakebite, the fresh seeds are made into a paste with vinegar and applied externally to the affected part.

_ *Bauhinia malabarica* Roxb.and *Bauhinia macrostachya* Wall are also medically valued species as they cure several ailments like dysentery, diarrhoea and skin lesions.

10. Chemical Constituents

Stem: Beta sitosterol, lupeol, kaempferol, 3 glucoride.

Dose (Matra) - Twakchurna- 2-4 gm
Pushpachurna- 1-2gm

References

Apparanantham, T. and V. Chelladurai. *Glimpses on Folk Medicines of Dharamapuri Forest Division, Tamil Nadu.* Anc. Sci. Life. 1986. 5; 182-185.

Ball, V. *Notes on Principle Jungle Fruits Used As Articles of Food by the Natives of the Districts of Maunbhoom and Hazaribagh.* J. Asiat. Soc. 1967. 11; 73-82.

Bedding, P.O. *Studies in Santal Medicines and Connected Folklore.* Mern. Asist. Soc. Bengal. 1927. 10; 1-427.

Bhalla, N.P., Sahu, T.R., Mishra, G.P. and Dakwale, R.N. *Traditional Plant Medicines of Sagar Distt. Madhya Pradesh.* India. J. Econ. Tax. Bot. 1982. 3; 23-32.

Bhargava, K.S. *Unusual and Supplementary Food Plants of Kumaon.* J. Bombay Nat. Hist. Soc. 1959. 56; 26-31.

Bhujel, R.B., Tamang K.K., and Yonzone, G.S.. *Edible Wild Plants of Darjeeling district.* J. Bengal Nat. Hist. Soc. 1984. 3; 76-83.

Chunekar Shastri, K., 2010: Bhavprakash Nighantu.Chaukhambha Bharati Acadami, Varanasi.

Desai, V.G. Aushadhisangraha, Rajesh Prakashan, Kothrud, Pune.

Garde, G.K., 2008: Sarth Vagbhat, Anmol Prakashan, Budhawarpeth. 02.

Dutt, U.D., 1989: The Materica medica of the Hindus. Mittol Publications. Delhi. 132-134. Glimpses of Indian ethnobotany, (S.K. Jain, ed.). Oxford and IBH Publishing Co. New Delhi. 37-58.

Gunjatkar, N. and Vartak, V.D. *Enumeration of Wild Edible Legumes from Pune District, Maharashtra State.* J. Econ. Tax. 1982. Bot. 3; 1-9.

Gupta, R.K. *Some Unusual and Interesting Food Plants of the Garhwal Himalaya.* J.D. Agric. Torp. Bot. Appl. 1962. 9 (11-12) 532-535.

Harshberger, J.W., 1896: *The Purpose of Ethnobotany.* Bot. Caz. 21: 146-154. Industry). CSIR, New Delhi.

Jain, S.K. *Studies in Indian Ethnobotany. Plants Used In Medicine by the Tribals of Madhya Pradesh.* Bull. Reg. Res. Lab. 1963. 1; 126-127.

Jain, S.K. *Wild Plant Foods of the Tribals of Bastar (Madhya Pradesh).* In: Proc. Nat. Inst. Sci. India. 1964. 30B; 56-80.

Jain, S.K., 1991: *Dictionary of Indian Folk Medicine and Ethonobotany*. Deep Publication. New Delhi. 261-296.

Jain, S.K., 1997: *Contribution to Indian Ethnobotany.* Scientific Publishers. India. 29-312.

Jain, S.K. and C.R. Tarafder. *Medicinal Plant Lore of the Santhals.* Econ. Bot. 1970. 24; 241-278.

Jain, S.K. and De, J.N. *Observations on Ethnobotany of Purulia district, West Bengal.* Bull. Bot. Surv. India. 1966. 8; 237-251.

Jain, S.P. *Ethnobotany of Morni and Kalesar (Ambala-Haryana).* J. Econ. Tax. Bot. 1984. 5; 809-813.

Joshi, P. *An Ethnobotanical Study of Bhils*. J. Econ. Tax. Bot. 1982. 3; 257-266.

Karnick, C.R., Tiwari, K.C., Majumdar, R. and Bhattacharjee, S. *Newer Ethnobotanical and Folklore Studies of Some Medicinal Plants of Gauhati and Surrounding Areas.* Nagarjun. 1981. 24; 240-245.

Kirtiker, K.R. and Basu, A.D., 1935: Indian Medicinal Plants Oriental Enterprises. Dehradun. India.

Kumar, Y., Haridasan, K. and Rao, R.R. *Ethnobotanical Notes on Certain Medicinal Plants among Some Garo People around Balphakram Sanctuary in Meghalaya*. Bull Bot Surv India. 1980. 22; 161-165.

Maji, S. and Sikdar, J.K. *A Taxonomic Survey and Systematic Census on the Edible Medicinal Plants among Some Garo People.* Review Article ISSN 2250-0480. Oct-Dec 2012. 2 (4). L – 76 Life Science Ethno Botany around Balphakram Sanctuary in Meghalaya. Bull. Bot. Surv. 1982. 22; 161-165.

Megoneitso and Rao, R.R. *Ethnobotanical Studies in Nagaland-Sixty Two Medicinal Plants Used by the Angami Nagas.* J. Econ. Tax. Bot. 1983. 4; 167-172.

Mittre, Vishnu. 1981. *Wild Plants in Indian Folk Life – A Historical Perspective. In: Glimpses of Indian Ethnobotany.* Jain, S.K. (ed.) New Delhi: Oxford and IBH Publ. Co. 37-58.

Negi, K.S., Tiwari, J.K. and Gaur, R.D. *Economic Importance of Some Common Trees in Garhwal Himalaya. An Ethnobotanical Study.* Indian J. Forestry. 1985. 8; 276-289

Padeshastri, S.D. Vanaushahi Gunadarsh, Rajesh Prakashan, Kothrud, Pune. 38.

Pal, D.C. and Raychaudhary, E. *Some Folklore about Plants.* Folklore. 1982. 23 (11) 248-250.

Pal, D.C. and Jain, S.K., 1998: Tribal Medicine. Naya Prakash. Calcutta. 317.

Pal, G.D. *Observations on Ethnobotany of Tribals of Subansiri, Arunachal Pradesh.* Bull. Bot. Surv. India. 1984. 26; 26-37.

Panashikar, V.L., and Soman, K.V. Nighantaratnakar. Chaukhambha Sanskrit Pratishthan, Delhi.

Prof. Vd. Joshi, Y.G. Charaksamhita 2, Vaidyamitra Prakashan, Sadashivpeth, Pune. 30.

Rajwar, G.S. *Low Altitude Medicinal Plants of South Garhwal.* Bull. Medicoethnoboty. Res. 1983. 4; 14-28.

Rao, R.R. and Jamir, N.S. *Ethnobotanical Studies in Nagaland-1: Medicinal Plants.* Econ. Bot. 1982. 36; 176-181.

Roy, G.P. and Chaturvedi, K.K. *Less Known Medicinal Uses of Rare and Endangered Plants of Abujhmarh Research Area, Bastar (Madhya Pradesh).* J. Econ. Tax. Bot. 1987. 9; 325-328.

Shah, N.C. and Joshi, M.C. *An Ethnobotanical Study of Kumaon Region of India.* Econ. Bot. 1971. 25; 414-422.

Sharma, P.K., Dhyani, S.K. and Shanker, V. *Some Useful and Medicinal Plants of the District Deharadun and Siwalik.* J. Sci. Res. Pl. Med. 1979. 1; 17-43.

Sharma, P.V., 1996: *Classical Uses of Medicinal Plants.* Chaukhambha Vishwa Bharti. Varanasi. 93-397.

Van-Zeist, W. and Casparie, W.A., 1984: Plants and ancient Man, studies in Palaeoethnobotany. Balkema. Rotterdam.

Vartak, V.D., 1981: *Observations on Wild Edible Plants from Hilly Regions of Maharashta and Goa.* In: Glimpses of Indian ethnobotany, (S.K. Jain, ed.). Oxford and IBH Publishing Co. New Delhi. 261-271.

Vd. Borkar D.B. Sarth Sushrut Samhita, Rajesh Prakashan, Kothrud, Pune. 38.

Vd. Sathe A. 17th edition, Ayurved Bhavan, Mumbai, 04. Wild Plants of Midnapore District, West Bengal. J. Econ. Tax. Bot. 2008. 3; 717-737.

Cloud Publications
International Journal of Advanced Ayurveda, Yoga, Unani, Siddha and Homeopathy
2016, Volume 5, Issue 1, pp. 304-309, Article ID Med-284
ISSN: 2320 – 0251

Research Article | Open Access

The Role and Impact of Multidisciplinary, Integrated Approach in Health Care Delivery

Malagi K.J. and Kamath M.

Department of Ayurveda, Kasturba Medical College, Manipal University, Manipal, Karnataka, India

Publication Date: 9 February 2016

Article Link: http://medical.cloud-journals.com/index.php/IJAAYUSH/article/view/Med-284

Abstract Enlightening the capability of health care systems to answer to the public demands of all ages is one of the greatest challenges of our time. This is the right time to think over multidisciplinary, integrated approach in health care delivery. To study the role of multidisciplinary, integrated approach towards the effective healthcare delivery based on systematic reviews. Survey Technique using empirical, cross-sectional method. Randomized control study with Literature review from January 1996 to December 2014.around 200 articles with key words Multidisciplinary, integrated, CAM, and health care delivery using electronic databases. Multidisciplinary, integrated health care delivery having their own strength and weakness. Integrated multidisciplinary medical care may provide a cost effective quality care with the patient centric approach.
Keywords *Multidisciplinary; Integrated Care; CAM; Health Care Delivery*

1. Introduction

1.1. Background

Medical Science is a combination of both diagnostic tools and treatment modalities. Ageing population, lifestyle as well as non-communicable diseases is a big challenge to the health care professionals [1]. The same can be observed in patient care and teamwork of multidisciplinary professionals and integrated approach [2], and the present day health care system requires a multidisciplinary approach plans which involves literature review, evidence based studies [3 ,4] by integration of conventional ones with different systems of medicine like Ayurveda, Tibetian, Chinese and advanced scientific disciplines like nanotechnology, pharmacogenomics, chronopharmacology, reverse pharmacology, proper use of information technology etc. Accreditation and legal bodies must work on implementation of proper Quality Polices in various levels from manufacturing and marketing of pharmaceuticals to health care delivery.

1.2. Objective

To study the role of multidisciplinary, integrated approach towards the effective healthcare delivery based on systematic reviews.

2. Materials and Method

Survey Technique using empirical, cross-sectional method.

2.1. Study Design

Literature review done by screening of literature from January 1996 to December 2014. Various articles like review, research, protocols, articles in various health care journals ranging from medical, nursing and pharmacy, health care management journals. Along with Dissertation, conference proceedings and abstracts pertaining to the health care management especially in the multidisciplinary integrated area [5, 6], using electronic databases like Medline, CINAHL, Cochrane Library, Ovid SP, Research gate, and Web of Science.

3. Observation

As we are in the era of globalization, patients are consulting their family or general physician not only for medical help, also for kindness and moral support and standard care delivery, reduced number of prescribed drugs and shorter period of medication, less painful as well as noninvasive surgical operations and diagnostic tools, short period of hospital stay etc. For all these we are supposed to pay tribute to advances in science and technology, which deliver health care more affordable and easily available. The multidisciplinary, integrated approach will help to deliver standard, quality and holistic health care. Scientific advances in the fields of Nanotechnology, Chronopharmacology, Genetics, and Reverse Pharmacology play a vital role in advances in medical knowledge.

Multidisciplinary care involves various scientific advances for preventive, curative and promotive aspects of health. Nanotechnology plays a significant role in everyday life in areas like Chemistry, Medicine, Electronics and Communication. Nano particles (Nano crystals) may be used to develop devices like diagnostic tools and dosage forms ranging from 1 to 100 nm. There are many evidences available regarding usage of Nano technology to prepare metallic preparations in Ayurvedic system of medicine in India like Swarna bhasma which is therapeutic form gold ash with particle size 56nm and possess anti stress activity [7] .While Tamra bhasma or ash of Copper is having antioxidant property [8]. Nano technology and Nano particles like Silver Nano particle helps in the management of multi drug resistant bacteria [9] Nanotechnology also plays vital role in Nanomedicine, Nanopharmaceuticals, Cosmeceuticals and Nutraceuticals. One more emerging discipline in the medical field is chronopharmacology. The main objective of Chronopharmcology is Auto induction and Auto inhibition [10] which plays a vital role in drug optimization. It deals with drug effects like chronokinetics, chronodynamics with rhythm and function of the biological clocks [11], and maintains standard drug delivery in disease conditions like Myocardial infarction, Asthma, Peptic ulcer, and Mood disorders, etc. For instance, in peptic ulcer like disease condition H 2 antagonists are suggested at bedtime as the rate of gastric acid secretion level is more at night, while gastric emptying is also slow at night [12]. It also influence disease manifestation and its treatment [13], it can be a safe and well-organized disease management in the future [14]. In gist scholars from various medical fraternities like biology and pharmaceutics, clinicians must be aware about Chronopharmacology, and about importance of Chronobiological cycles [15]. From the period of Gregor Johann Mendel evolution on science of genetics, Genetics reveals the many unknown facts of

disease cause to treatment. Now, genetics potentials are much more involved in common disease. Revolution in Medical genetics, the super specialty discipline of medicine contributes to the diagnosis and management of hereditary disorders, like metabolic disorders, galactosemia, cancer etc. Genomics is fast growing basic science of medical research [16]. Recent study reveals that Pharmacogenomics may reduce the Adverse Drug Reactions [17].

One more area to focus in health care delivery is Integrative approach. It has been observed that the use of CAM and its components is more common in both developed and developing countries. Influenced by the preoccupied thought that they are beneficial and safe, and economical.

There are hundreds of complementary and alternative therapies that exist in the world today, most popular and commonly used ones are traditional Chinese medicine, Ayurveda, Reiki ,Mind-body techniques, meditation, electromagnetic-based therapies, Massage therapy , Reflexology, and hypnosis. These are habitually optional ones in life style disorders like coronary artery disease, diabetes, asthma, arthritis, stress and pain.

The complementary and alternative medicine is one which is not taught widely at U.S. medical institution [18] But today it get attention as it is massive and rapidly growing industry, in which major pharmaceutical giants are now participating [19]. It shows the potency of CAM users as a complement [20, 21]. The term “CAM” has been substituted progressively with “integrative” medicine. The CAM has their own philosophies for an example Prakruthi, a unique concept of Ayurveda, which represents body constituent of individual [22] can be solved by using tools like molecular genomics.

There are two main CAM modalities which survive since the beginning of human civilization are massage therapy and herbal medicine. The main issue and the need of the present day CAM is uniform standardization of both conventional and traditional medicines. We must look into the ‘CAM’ and its components which have their own philosophy which requires scientific evaluation.

Massage therapy is one of the most widely used complementary and alternative medicine (CAM) therapies in the US [23]. It helps with hypertension [24] backache [25], dementia [26] etc.

Large local and tribal population uses Herbal medicines for various ailments like Jaundice, asthma, gastric ulcer etc. [27]. Even WHO shows great interest in documentation and promotion of herbal products [28]. Alternative systems of medicines like Indian, Tibetan, Chinese traditional systems of medicines use mainly drugs of herbal origin. It has been observed since last two decades, there is a significant rise in the use of natural products [29, 30] especially the herbal ones [31]. Both healthy individuals and patient take these products in combination with prescribed drugs without any medical knowledge. This may result in herb drug interactions. [32]. For instance. Aspirin, A NSAID, processes interact with Garlic.

4. Results

The strength of the Multidisciplinary, integrated approach is quality health care delivery to give Holistic approach ,while weakness is lack of awareness about these philosophies principals and issues like herb –drug interaction etc.

5. Discussion

There are many initiatives that have been introduced in the past three decades to improve quality health care delivery and patient care Multidisciplinary, integrated health care delivery facilitate the

Evidence based clinical exercise and encourage patient centric care .It also requires management support, While the main drawback are consumption of money [33, 34] and time, the laws of land, interpersonal politics etc. The multidisciplinary, integrated approach is a combination of skilled people of different discipline which is a highly articulated interdisciplinary, team of conventional medicine and complementary and alternative health care that deliver patient centric quality health care [35]. The institution or set up or the health care professional must be aware of the research and development in various scientific advances [36], in areas like Regenerative medicine ,Genetics ,Nano technology, Chronopharmcology etc. and take initiative for, proper strategic level planning and coordinating the various disciplines by giving proper direction to deliver integrative approach by keeping in mind the Doctor – Patient relation , quality health care delivery as well as patient satisfaction [37,38].

6. Conclusion

It is observed that deprived inter professional teamwork may negatively influence, or affect the health care delivery. This is right time to compare the effectiveness of various disciplines and their cost and their role in quality Integrated health care delivery. Multidisciplinary Integrative Medicine is meant to provide the best possible health care in particular demographic area, for both the doctor and the patient, by creating the golden triangle of traditional medicine, modern medicine and modern science. The big challenge that lie before us is, how achievements of advanced conventional medical system and CAM can be used to prevent and cure the diseases by understanding the disease pattern, molecular genomics, DNA sequencing etc This may be achieved by carrying out integrated research. It is quite observed in our earlier circumstances, which did not permit us to take up the studies on multidisciplinary integrated health care delivery, but inherent passion of scientific folk enabled us to achieve the highest level by proper strategy planning of the Ideology to meet the challenges, results in reality, into opportunities.

References

[1] Committee on Quality of Health Care in America IoM, 2001: *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington: National Academy Press.

[2] Plochg, T., and Klazinga, N.S. *Community-Based Integrated Care: Myth or Must?* Int J Qual Health Care. 2002. 14; 91-101.

[3] Thomson, R., Lavender, M., and Madhok, R. *How to ensure that Guidelines are Effective.* BMJ. 1995. 311; 23742.

[4] Scottish Intercollegiate Guidelines Network (SIGN). 1995: *Clinical Guidelines: Criteria for Appraisal for National Use*. Edinburgh: SIGN.

[5] Hofmann, Peg A. *Critical Path Method: An Important Tool for Coordinating Clinical Care.* J Quality Improvement. 1993. 19; 23546.

[6] Heymann, T. *Clinical Protocols are the Key to Quality Health Care Delivery.* Int J Health Care Quality Assurance. 1994. 7; 147.

[7] Shaha, Z.A., Gilani, R.A., Sharma, P., and Vohra, S.B. *Attenuation of Stress-Elicited Brain Catecholamines, Serotonin and Plasma Corticosterone Levels by Calcined Gold Preparations Used in Indian System of Medicine.* Basic Clin Pharmacol Toxicol. 2005. 96 (6) 469-474.

[8] Tripathi, T.B., Singh, V.P. *Role of Tamra Bhasma, an Ayurvedic Preparation, in the Management of Lipid Peroxidation in Liver of Albino Rats*. Indian J Exp Biol. 1996. 34; 66-70.

[9] Grangease, C., Obadia, B., Mijakovic, I., Deutscher J., Cozzone, A.J., and Doublet, P. *Autophosphorylation of the Escherichia coli Protein Kinase Wzc Regulates Thyrosine Phosphorylation of Ugd, Audp-glucose Dehydregenase.* J Bio. Chem. 2003. 278; 39323.

[10] Maurya, K.K. et al. *Chronopharmacology: A Tool for Therapy of Diseases.* IRJP. 2012. 3 (5) 128-132.

[11] Saranya, M. Subalakshmi., K. Dhanaraj., M. Umamaheswari., S. Kavimani., and R. Murali. *Diseases and Conditions Requiring Chronotherapy: An Overview.* J. Pharm. Res. 2013. 2 (12) 1-5.

[12] Kaur, M., and Bala, R. *Chronotherapy: A Review*. Int J Pharm Sci Res. 2013, 4(1); 90-102.

[13] Vinay, P., and Sarasija Suresh. *Emerging Role of Biorhythms in Optimizing Treatment of Diseases.* Indian Journal of Novel Drug Delivery. 2009. 1 (1) 2-10.

[14] Bairy, L.K. *Chronotherapeutics: A Hype or Future of chronopharmacology?* Indian J Pharmacol. 2013. 45 (6) 545-6.

[15] Vidyavati S. Koppisetti, Nikhil Chandra, Bhagvan Raju, M. *Vital Role of Chronopharmacology and Chronopharmacotherapy in Human Life.* 2010. 1 (2) 36-40.

[16] Guttmacher, Alan E., and Francis S. Collins. *Genomic Medicine—A Primer.* N Engl J Med. 2002. 347 (19) 1512-1520.

[17] Phillips, Kathryn A., et al. *Potential Role of Pharmacogenomics in Reducing Adverse Drug Reactions: A Systematic Review.* JAMA. 2001. 286 (18) 2270-2279.

[18] Eisenberg, D.M., Kessler, R.C., Foster, C., Norlock, F.E., Calkins, D.R., and Delbanco, T.L. *Unconventional Medicine in the United States -- Prevalence, Costs, and Patterns of Use.* N Engl J Med. 1993. 328; 246-252.

[19] Canedy, D. *Real Medicine or Medicine Show? Growth of Herbal Remedy Sales Raises Issues about Value.* New York Times. July 23, 1998. D1.

[20] Astin, J.A. *Why Patients Use Alternative Medicine: Results of a National Study.* JAMA. 1998. 279 (19) 1548-53.

[21] Druss, B.G., and Rosenheck, R.A. *Association between Use of Unconventional Therapies and Conventional Medical Services.* JAMA. 1999. 282 (7) 651-6.

[22] Bhushan, P., Kalpana, J., and Arvind, C. *Classification of Human Population Based on HLA Gene Polymorphism and the Concept of Prakriti in Ayurveda.* Journal of Alternative & Complementary Medicine. 2005. 11 (2) 349-353.

[23] Eisenberg, D.M., Davis, R.B., Ettern, S.L., Appel, S., Wilkey, S., Van Rompay, M., et al. *Trends in Alternative Medicine use in the United States, 1990–1997.* JAMA. 1998. 280; 569-75.

[24] Christine, M.O. *The Effect of Therapeutic Back Massage in Hypertensive Persons: A Preliminary Study.* Biol Res Nurs. 2005. 7; 98-105.

[25] Daniel C. Cherkin, Karen J. Sherman, Richard A. Deyo, and Paul G. Shekelle. *A Review of the Evidence for the Effectiveness, Safety, and Cost of Acupuncture, Massage Therapy, and Spinal Manipulation for Back Pain.* Ann Intern Med. 2003. 138 (11) 898-906.

[26] Chieh,-Yu Fu, Wendy Moyle, and Marie Cooke. *A Randomised Controlled Trial of the Use of Aromatherapy and Hand Massage to Reduce Disruptive Behaviour in People with Dementia.* BMC Complementary and Alternative Medicine. 2013. 13; 165.

[27] Puspangadan, P., and Atal, C.K. J. Ethnopharmacol. 1984. 11; 59-77.

[28] Kaido, T.L., Veale, D.J.H., Havlik, I., and Rama, D.B.K. J. Ethnopharmacol. 1997. 55; 185-191.

[29] Mathur, A. *Who Owns Traditional Knowledge?* Working Paper No. 96. Indian Council for Research on International Economic Relations. 2003. 1-33.

[30] Wakdikar, S. *Global Health Care Challenge: Indian Experiences and New Prescriptions.* Electronic J Biotechnol. 2004. 7; 214-20.

[31] Vulto, A.G., and Smet, PAGM. In: Dukes, M.M.G. (Ed.). Meyler Side Effects of Drugs, 11th Ed. Elsevier, Amsterdam. 999; 1005-1988.

[32] Ernst, E. *Herbal Medicines: Where is the Evidence?* BMJ. 2000. 321,395; 6.

[33] Grol, R. *Improving the Quality of Medical Care: Building Bridges among Professional Pride, Payer Profit, and Patient Satisfaction.* JAMA. 2001. 286; 2578-2585.

[34] Hulscher, M.E., Laurant, M.G., and Grol, R.P. *Process Evaluation on Quality Improvement Interventions.* Qual Saf Health Care. 2003. 12; 40-46.

[35] Heather Boon, Marja Verhoef, Dennis O'Hara, and Barb Findlay. *From Parallel Practice to Integrative Health Care: A Conceptual Framework.* BMC Health Services Research. 2004. 4; 15.

[36] Harry Campbell, Rona Hotchkiss, Nicola Bradshaw, and Mary Porteou. Integrated Care Pathways BMJ. 1998. 316; 133–7

[37] Glouberman, S, and Mintzberg, H. *Managing the Care of Health and the Cure of Disease—Part II: Integration.* Health Care Manage Rev. 2001. 26; 70-84.

[38] Glouberman S., Mintzberg, H. *Managing the Care of Health and the Cure of Disease—Part I: Differentiation.* Health Care Manage Rev. 2001. 26; 56-69.

Cloud Publications
International Journal of Advanced Ayurveda, Yoga, Unani, Siddha and Homeopathy
2016, Volume 5, Issue 1, pp. 322-329, Article ID Med-287
ISSN: 2320 – 0251

Research Article | Open Access

Hypoglycaemic Effect of Vriddhadaru [*Argyreia nervosa* (Burm. f.) Boj.] in Alloxan Induced Diabetic Rabbits

Vivek P.[1], Jayakumari D.[2] and Jayasree P.[3]

[1]VPSV Ayurveda College, Kottakkal, Kerala, India
[2]Maria Ayurveda Medical College, Marthandam, TamilNadu, India
[3]Govt Ayurveda College, Thiruvananthapuram, Kerala, India

Publication Date: 12 April 2016

Article Link: http://medical.cloud-journals.com/index.php/IJAAYUSH/article/view/Med-287

Abstract Diabetes Mellitus is the most important non communicable disease, playing a notorious role in the devastating phase of public health. Ayurveda, the life science provides astonishing results in such life style disorders. Vriddhadaru an excellent Ayurvedic drug and *Argyreia nervosa* has been traditionally used as Vriddhadaru, in diabetic management with promising results. But, the anti-diabetic effect of the drug has not been scientifically appreciated. This study ascertains the hypoglycaemic effect of the drug in a pre-clinical model. In this study, alloxan induced 18 diabetic albino rabbits were divided into 3 groups with 6 rabbits in each group. On the day of experiment, after assessing the fasting blood sugar levels in all 18 rabbits, root powder of the test drug as CMC suspension in the dose of 0.56 g/kg body weight and the standard drug, metformin; in the dose of 0.024 mg/kg body weight were administered to the first group and second group respectively. The third group was kept as control and administered with distilled water alone. Later, the blood glucose values were taken at 1st, 3rd and 5th hour and the obtained values were compared with in the group and between the groups. The blood glucose levels were compared using paired t test for within the group analysis and by student t test for between the group analysis. Within the group comparison of blood sugar level in group 1 showed significant decrease in the level at 1st hour and 5th hour from the corresponding fasting blood sugar levels. In group 2, significant decrease of blood sugar level was seen between fasting blood sugar level and 1st hour value and also in fasting blood sugar value and 5th hour value. Between group comparison of group 2 showed significant difference in the reducing the blood sugar level at different time intervals. Ayurvedic literature proposes Pramehaghna property to the drug Vriddhadaru which is substantiated through this pre-clinical trial. But the effect is comparatively less with that of the standard drug. This may be due to the absence of strong antioxidant and antidiabetic chemical constituents in this plant. From the above study, it is inferred that *Argyreia nervosa* (Burm. f.) Boj. is less effective in reducing blood sugar levels in Alloxan induced diabetic rabbits against the standard drug Metformin.

Keywords *Alloxan Monohydrate; Argyreia Nervosa*

1. Introduction

Life style disorders and non-communicable diseases causing life distress, melancholy and untimely death now a days. Among all non-communicable diseases, metabolic syndrome stands apart and is of quite a concern. This condition mainly includes dyslipidemia and diabetes mellitus type II. The latter is characterized by chronic hyperglycemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both. It occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it produces [1].

Diabetes is in the top 10, and perhaps the top 5, of the most significant diseases in the developed world, and is gaining significance elsewhere. In 2006, according to the WHO, at least 171 million people worldwide suffer from diabetes. Its incidence is increasing rapidly, and it is estimated that by the year 2030, this number will double [2]. The effects of diabetes mellitus include long-term damage, dysfunction and failure of various organs. In its most severe forms, ketoacidosis or a non-ketotic hyperosmolar state may develop and lead to stupor, coma and, in absence of effective treatment, death. Even though a large number of drugs are available for this condition, none ensure complete cure, especially in preventing complications [3].

Many traditionally using Ayurvedic drugs were possessed pramehaghna property still many of them are having no scientifically validated data. Vriddhadaru is one if such drug mentioned firstly in Rasayana prakarana of Ashtanga Samgraha [4]. Even though many controversies are there about the identification of the genuine source plant, *Argyreia nervosa* (Burm. f.) Boj. of Convolvulaceae family is considered as the mostly used plant source as Vriddhadaru [5]. *Argyreia nervosa* is a climbing shrub with woody tomentose stem, commonly known as elephant creeper in English. It is widely distributed in tropical regions of the world. In India it is seen upto an altitude of 900 m [6]. It is generally found growing in slightly moist localities like river banks, edges of lakes etc. The roots are varying in size as well as in thickness [7].

As per Ayurvedic classical texts, this plant is useful in Prameha [8], a condition in which a drug Pramehaghna with Rasayana property is very much essential. This aspect of Vriddhadaru has not been established till date. Moreover, search for new effective drugs are very much essential now a days as genuine Ayurvedic drugs in this picture are facing radical scarcity.

There are many studies are there about the analgesic [9, 10], anti-inflammatory [11, 12], antipyretic [13], antiviral [14], anticonvulsant [15], nootropic [16, 17], anthelmintic [18], aphrodisiac [19, 20, 21], antidiarrheal [22], antiulcer [23] and antimicrobial action [24, 25, 26]. But only a few are there about the hypoglycaemic activity. Hence in this study, it was decided to take *Argyreia nervosa* as a source plant for Vriddhadaru and to document the hypoglycaemic activity in alloxan induces diabetic rabbits against the standard drug metformin.

2. Materials and Methods

2.1. Selection of Animals

25 healthy albino rabbits of either sexes weighing 1500-2000gm were collected from the animal house of Agada tantra department, Government Ayurveda College, Thiruvananthapuram.

2.2. Preparation of Alloxan Solution

Alloxan monohydrate was obtained from Laboratory supplies Thiruvananthapuram, batch no: 43256. Using normal saline 0.5%, the solution was prepared.

2.3. Standard Drug - Metformin

A stock solution was prepared with 0.5 mg of metformin in 50 ml distilled water so that 1 ml contained 0.02 ml of metformin [27].

2.4. Preparation of Test Drugs

Form of preparation	-	Powder
Route of administration	-	Oral
Drug	-	Root of *Argyreia nervosa* (Burm. f.) Boj.

A Carboxy-methyl-cellulose (CMC) stock solution of strength 0.01g% of the test drug was prepared in distilled water.

2.5. Dose

The dose of the test drug was calculated from Sarngdhara samhitha; the dose being the common dose for choorna [28]. Effective dose for rabbit was calculated by using the table constructed by Paget G.E. and Barnes T.M. in the evaluation of drug activities. Based on this; corresponding doses were calculated.

2.6. Setting

Animal house working under the Drug Standardization Unit, Govt. Ayurveda College, Trivandrum, Kerala

2.7. Procedure [29]

25 albino rabbits of either sex (weighing 1500-2000gm) were used in the present study. The animals were kept under observation for one week. Normal fasting blood sugar values were noted before administration of alloxan. All rabbits were fasted for 18 hours and the samples were collected from marginal ear vein. Blood sugar was calculated by glucose peroxidase (GOD-POD) method. After that, normal rabbit feed was given. Alloxan monohydrate (150 mg/kg body weight) dissolved in normal saline was injected via intra peritoneal route in 18 h previously fasted animal to induce diabetes. After one hour of alloxan administration, the animals were fed with standard pellets and water at libitum. After 72 hours, the blood glucose levels were estimated, applying the glucose oxidase method and rabbits having blood glucose level more than double were selected for the study [30].

18 healthy diabetic rabbits were taken for the study. They were grouped into three, with each group containing 6 animals which were caged separately. Animals of each group were marked for individual identification. First group (G1) was treated with test drug i.e. 0.56 g/kg body weight of root powder of *Argyreia nervosa* (Burm. f.) Boj., second (G2) group was administered with standard drug metformin at the dose of 0.024 mg/kg and the third group (G3) was kept as control and treated with distilled water alone.

On the day of the experimental study, fasting blood samples were taken from all the rabbits and then; the drugs were administered orally using feeding cannula. After 1 hour blood samples were collected and all the animals were fed. Blood samples for glucose assessment were again collected from all animals at 3rd and 5th hours after the drug administration. The values were subjected to statistical analysis.

3. Observations and Results

The blood glucose levels were compared using paired t test for within the group analysis and by student t test for between the group analysis using the programme WinPepi version 11. Table number 1 shows the blood sugar values in G1 at different time interval.

Table 1: *Blood sugar values of G1 at different time interval*

	Mean	SD	Mean diff	p - Value
FBS and 1st hour	232.0 195.7	29.4 12.7	36.2	< 0.01
FBS and 3rd hour	232.0 217.9	29.4 16.6	14.0	> 0.05
FBS and 5th hour	232.0 186.7	29.4 19.1	45.2	< 0.01
1st hour and 3rd hour	195.7 217.9	12.7 16.6	22.2	< 0.05
1st hour and 5th hour	195.7 186.7	12.7 19.1	9.0	> 0.05
3rd hour and 5th hour	217.9 186.7	16.6 19.1	31.2	< 0.01

Table number 2 shows the comparison of the blood sugar level at different time of G2

Table 2: *Blood sugar values of G2 at different time interval*

	Mean	SD	Mean diff	p - Value
FBS and 1st hour	246.6 161.4	34.1 37.9	85.2	< 0.01
FBS and 3rd hour	246.6 212.4	34.1 31.0	34.1	> 0.05
FBS and 5th hour	246.6 150.2	34.1 34.3	96.4	< 0.01
1st hour and 3rd hour	161.4 212.4	37.9 31.0	51.0	< 0.01
1st hour and 5th hour	161.4 150.2	37.9 34.3	11.2	> 0.05
3rd hour and 5th hour	212.4 150.2	31.0 34.3	62.3	< 0.01

The comparison of the blood sugar level at different time of G3 is given in the table number 3 using paired t test.

Table 3: *Blood sugar values of G3 at different time interval*

	Mean	SD	Mean diff	p - Value
FBS and 1st hour	252.6 233.1	26.0 21.7	19.5	< 0.05
FBS and 3rd hour	252.6 291.2	26.0 21.0	38.6	< 0.05
FBS and 5th hour	252.6 273.4	26.0 18.5	20.8	> 0.05
1st hour and 3rd hour	233.1 291.2	21.7 21.0	58.1	< 0.01
1st hour and 5th hour	233.1 273.4	21.7 18.5	40.3	< 0.05
3rd hour and 5th hour	291.2 273.4	21.0 18.5	17.8	< 0.01

Comparison of average changes in blood sugar level between group 1 and group 2 was done using unpaired t test and the results were given in the table number 4.

Table 4: *Comparison of changes in the blood sugar in different groups*

Duration	Group 1		Group 2		p value
	Mean	SD	Mean	SD	
FBS & 1st hour	14.91	7.42	34.45	12.83	< 0.01
FBS & 3rd hour	5.13	10.23	13.07	13.54	> 0.05
FBS & 5th hour	19.01	7.12	38.38	14.98	< 0.05
1st hour & 3rd hour	11.52	7.57	33.86	12.84	< 0.01
1st hour & 5th hour	4.51	8.30	5.92	16.09	> 0.05
3rd hour &5th hour	14.39	4.67	29.45	11.98	< 0.05

Within the group comparison of blood sugar level in group 1 showed significant decrease in the level at 1st hour ($p<0.01$) and 5th hour ($p<0.01$) from the corresponding fasting blood sugar levels. No significant difference was there between fasting blood sugar level and 3rd hour value ($p > 0.05$). Significant increase in the blood sugar level was noted from 1st hour to 3rd hour ($p < 0.05$) then gradually decreased, but not statistically significantly ($p>0.05$) while comparing it with 1st hour value. A significant decrease at $p <0.01$ was observed between 3rd hour and 5th hour blood glucose level. Hence, initially there was a significant decrease in the blood sugar at 1st hour. Then in 3rd hour there was a significant increase of value than that of 1st hour followed by a gradual decrease in 5th hour.

In group 2, significant decrease of blood sugar level was seen between fasting blood sugar level & 1st hour value ($p<0.01$) and fasting blood sugar value & 5th hour value ($p<0.01$). No significant change was observed between fasting blood sugar level and 3rd hour value ($P>0.05$). Significant increase in the blood sugar level was noted between 1st and 3rd hour value ($p<0.01$) but no difference was observed between 1st and 5th hour value ($p > 0.05$). But 3rd and 5th values are different significantly ($p < 0.01$).

In group 3, the blood sugar levels increased significantly ($p < 0.05, 0.01$) in most of the cases and in few cases there was no statistical difference ($p > 0.05$)

Between group comparison of group 1 and group 2 showed significant difference in the change of the blood sugar level at different time intervals. Mean values showed that standard drug is more effective than the test drug.

4. Discussion

Statistical evaluation shows that the blood glucose level in group 1, treated with *Argyreia nervosa* shows a gradual decrease but less effective than that of standard drug metformin.

Previous studies show that *Argyreia nervosa* contains 1-tricontanol, epifriedelinol acetate, epifriedelinol and β-sitosterol [25] and the hexane extract of the root yielded tetradecanyl palminate, 5, 8-oxidotetracosan-10-one26 and two novel aryl esters characterized as stigmasteryl phydroxycinnamate and hexadecanyl p-hydroxycinnmate along with scopoletin [26]. Even though some of these were told to be having antioxidant, a prominent hypoglycaemic activity has not proven for any of these constituents. This may be the reason for the weak hypoglycaemic activity than the standard drug.

5. Conclusion

From the above study, it is inferred that *Argyreia nervosa* (Burm. f) Boj. is effective in reducing the blood glucose level in reducing blood sugar levels in Alloxan induced diabetic rabbits but less effective while comparing with that of the standard drug Metformin. Effectiveness of the plant and advantages if any over the existing therapy can only be assessed by a long term study in more than one type of rodents. Clinical efficacy in human subjects should also need to be proved for establishing it as an effective single drug therapy in Diabetes mellitus.

References

[1] WHO, Diabetes, Available from Netlibrary http://www.who.int/topics/diabetesmellitus/en/

[2] WHO, Global status Report on noncommunicable diseases 2014, Available from Netlibrary http://www.who.int/nmh/publications/ncd-status-report-2014/en/

[3] Fauci et al., 2007: *Harrison's Principles of Internal Medicine*, 17th edition, McGraw Hill Publication. 2275.

[4] Vagbhata, Astanga Samgraha, Uttarasthaana, translated by Srikantha Murthy K.R., Choukhambha orientalia, Varanasi. 3 (49/342) 510.

[5] Aiyer, K.N. and Kolammal, M. Pharmacognosy of Ayurvedic Drugs Kerala, 1 (8), Department of Pharmacognosy, University of Kerala, Trivandrum. 1964. 61-65.

[6] Anonymous, Flora of Orissa. Orissa forest development Co. Ltd; Bhubaneswar, Orissa, 1995.

[7] Gamble, J.S. Flora of Madras. Botanical Survey of, India, Calcutta. (II) 1956, Reprint, 556.

[8] Vagbhata, Astanga Samgraha, Uttarasthaana, translated by Srikantha Murthy K.R., Choukhambha Orientalia, Varanasi. 3 (49/344) 510.

[9] Bachhav, R.S., Gulecha, V.S., and Upasani, CD. *Analgesic and Inflammatory Activity of Argyreia Speciosa Root.* Ind J Pharmacol. 2009. 41; 158-61.

[10] Varsh, J. and Galani, Bharatkumar, P. *Analgesic and Anti-Inflammatory Activity of Argyreia Nervosa and Sphaeranthus Indicus in the Experimental Animals.* Global J Pharmacol. 2010. 4 (3) 136-141.

[11] Srivastava, M.C., Kant, V., and Tewari, J.P. *Antiinflammatory Activity of Roots of Argyreia Speciosa (Sumandrashokha).* Mediscope. 1972. 15; 219-222.

[12] Bachhav, R.S., Gulecha, V.S., and Upasani, C.D. *Analgesic and Inflammatory Activity of Argyreia Speciosa Root.* Ind J Pharmacol. 2009. 41; 158-61.

[13] Kamal, J., Sunil, T., and Narender, T. *Antipyretic Activity of Whole Aerial Part from Argyreia Nervosa.* Int J Pharma Pharmaceut Sci. 2012. 4 (4) 1-2.

[14] Babbar, O.P., Joshi, M.N., and Madan, A.R. *Evaluation of Plants for Antiviral Activity.* Ind J Med Res. 1982. 76; 54-65.

[15] Vyawahare, N.S. and Bodhankar, S.L. *Anticonvulsant Activity of Argyreia Speciosa in Mice.* Ind J Pharm Sci. 2009. 71; 131-134.

[16] Joshi, H, Kaur, N, and Chauhan, J. *Evaluation of Nootropic Effect of Argyreia Speciosa in Mice.* J Health Sci. 2007. 53; 382-388.

[17] Vyawahare, N.S. and Bodhankar, S.L. *Effect of Argyreia Speciosa Extract on Learning and Memory Paradigms in Mice.* Phcog Mag. 2009. 4; 43-48.

[18] Parveen, N., Khan, N.U., and Singhal, K.C. *Antifilarial Activity of Argyreia Speciosa against Setaria Cervi in Vitro.* Phytother Res. 1990. 4; 162-164.

[19] Subramoniam, A., Madhavachandran, V., Ravi, K., and Anju, V.S. *Aphrodisiac Property of the Elephant Creeper Argyreia Nervosa.* J Endocrinol Reprod. 2007. 11; 82- 85.

[20] Jaytilak, P.G., Sheth, A.R., Mugatwala, P.P., and Pardanani, D.S. *Effect of an Indigenous Drug (Speman) on Human Accessory Reproductive Function.* Ind J Surg. 1976. 38; 12-15.

[21] Bhargava, N.C. and Singh, O.P. *Fortege and Indigenous Drug in Common Sexual Disorders in Males.* Mediscope. 1978. 21; 140-144.

[22] Rao, C.V., Ojha, S.K., Reddy, G.D., Rawat, A.K., Rao, G.M., and Pushpangadan, P. *Antidiarrhoeal Activity of Argyreia Speciosa Flower: An Ethnopharmacological Study.* Acta Pharm Turcica. 2004. 46; 149-159.

[23] Khan, A., Roshan, S., Tazneem, B., and Ali, S. *Anti-Ulcer Effect of Argyreia Speciosa Ethanolic Root Extract in Rats.* Pharmacology Online. 2010. 2; 389-394.

[24] Ashish, J.M., Khadabadi, S.S., Farooqui, I.A., and Ghorpade, D.S. *Studies on Antimicrobial Activity of Clerodendrum* Infortunatum, Argyreia Nervosa and *Vitex Negundo*: A Comparison. Der Pharma Lett. 2010. 2 (1) 102-105.

[25] Basha, S.K. Sudarshanam, G. *Evaluation of Antibacterial Activity of Some Medicinal Plants used by Sugali Tribe of Yerramalais Forest of Andhra Pradesh.* J Pharma Res. 2011. 4 (7) 2067-2068.

[26] Somashekhar, K., Ajay, M., Pallavi, R., and Deepali, S.G. *Invitro Antifungal Activity of Ethanol Fraction of Argyreia Nervosa (Burm. F.) Boj. Leaves.* Ind J Nat Prod Res. 2012. 3 (1) 48-54.

[27] Gerhard Vogel, H. *Drug Discover and Evaluation Pharmacological Assays*. Second Edition. Springer. 2002. 950.

[28] Sargdhara, Sarngadhara Samhitha, English translation by Srikantha Murthy K.R., Chaukhambha orientalia, Varanasi, Sixth Edition. 2004. 6/1; 84.

[29] Vijay S. Patel, Chitra, V., Lakshmi P. Prasanna, and Krishnaraju, V. *Hypoglycemic Effect of Aqueous Extract of Parthenium Hysterophorus L.* in Normal and Alloxan Induced Diabetic Rats. Indian Journal of Pharmacology. 2008. 40 (4)183-185.

Cloud Publications
International Journal of Advanced Ayurveda, Yoga, Unani, Siddha and Homeopathy
2016, Volume 5, Issue 1, pp. 334-337, Article ID Med-302
ISSN: 2320 – 0251

Case Study | Open Access

Hyperprolactinaemia- An Ayurvedic Perspective: A Case Study

Shreeba Jadeja[1], Dhananjay Patel[1], Hemangi Baldaniya[2], Ashok Pandiya[1] and Shaikh M.N.[1]

[1]Kayachikitsa Department, Akhandanand Ayurved College, Ahmedabad, Gujarat, India
[2]Stri-Roga Prasuti Tantra Department, Akhandanand Ayurveda College, Ahmedabad, Gujarat, India

Publication Date: 23 May 2016

Article Link: http://medical.cloud-journals.com/index.php/IJAAYUSH/article/view/Med-302

Abstract Hyperprolactinaemia is a condition of elevated serum prolactin level. Prolactin is a 198-amino acid protein (23-kd) produced in the lactotroph cells of the anterior pituitary gland. Its primary function is to enhance breast development during pregnancy and to induce lactation after child birth. The causes of hyperprolactinaemia are categorized broadly as physiological, pathological, drug induced and others (hypothyroidism, chronic renal failure etc.) Hyperprolactinaemia inhibits the secretion of GnRH from hypothalamus, thus FSH and LH secretion from pituitary gland are inhibited, leading to infertility. In this case report patient suffered from hyperprolactinaemia since 2 years. First she took allopathy medicine but was not benefited. Then she was treated with Ayurvedic medication- *Arogyavaidhini Ras*, *Chandraprabha vati*, *Falghruta* and *Anutail-Pratimarsha Nasya*. After 3 months of medication, improvement was noticed on Hb. (BT-10gms, AT-12gms), Serum Prolactin level (BT-83.66, AT-17.96), and Ovulation study (BT-anovulatory cycle and cyst formation, AT-ovulatory cycle). In the two follow up, ovulation study showed normal ovulatory cycle. The line of treatment was followed in this case was to treat the provoked *Vata Dosha* and vitiated *Rasa Dhatu*. There were no adverse effects found during the Ayurvedic medication.
Keyword *Anutail; Arogyavaidhini Ras*; *Chandraprabha vati*; *Falaghruta*; *Nasya; Vandhyatva*

1. Introduction

Hyperprolactinaemia is a condition of elevated serum prolactin level. The causes: Physiological-pregnancy, stress, nipple stimulation; Pathological: Hypothalamic-pituitary disease; Drug induced: Metoclopramide, Reserpine, Phenothiazines etc.; others: hypothyroidism, chronic renal failure etc [1]. Hyperprolactinaemia inhibits the secretion of gonadotropin-releasing hormone (GnRH) from the hypothalamus by increasing the release of dopamine from arcuate nucleus, which in turn inhibits the release of FSH and LH from pituitary gland and results in diminished gonadal sex hormone production [2]. Due to this H-P-O axis disturb and menstrual cycle becomes anovulatory. In Ayurveda infertility is explained as *Vandhyatva*. The main causative factor for *Vandhyatva* is *Vata Dosha* [3] and it is also mention in *Ras Dhatu Pradoshaj Vikara* [4]. So according to Ayurvedic perspective the line of treating is to treat provoked *Vata Dosha* and vitiated *Rasa Dhatu*.

2. Case Presentation

A female subject, aged 25 years, housewife, living in Adipur, Gujarat, want to conceive. The other associated complaint was vaginal discharge. Having 2 year of marriage life, she was unable to conceive. So first she took allopathy treatment. The blood report suggested for anaemia and hyperprolactinemia. USG suggested anovulatory cycle with cyst formation. The semen analysis of the partner was normal. She had gone through 9 months of allopathy treatment and took the medication: Tab. Siphene (Clomiphene Citrate 50mg), Tab. Folvite (folic acid), Inj.Fertigyn (Human Chorionic Gonadotropin 5000iu), Tab. Dvx (Divalproex 500mg), Cap. Rab DSR (Rabeprazole + Domperidone), Tab. Fole (Fluconazole 150mg), Tab. Cabergoline (0.5ml)(ergot derivative), Tab. Shelcal (Calcium 500mg + Vit. D). But she did not get any relief. Therefore, she consulted for Ayurvedic medication. She had no any previous medical or surgical illness. On examination, it was found that she was belonging to *Vatapittaj Prakriti* and there was no any abnormal finding seen in general and systemic examination. M/H – 3 day/month, regular, moderate, painless. Mic. /H – 5-6 time/day. B/H – 1 time/day. P/S-mucosal discharge on Cx and Vagina, no any other abnormality found. P/V- Anteflex Anteverted uterus, No tenderness in Cx. BP-100/70mmHg, pulse-72/min, wt.48 kg and ht. 5.2 inch.

Treatment Protocol

The treatment was carried out with the following medicines (Table 1) for three months. During this period she was advised to take *Laghu*, *Supachya Aahar* (which is easy to digest) and to avoid *Divaswapna* (sleeping at day time) and *Dadhi* (curd).

Table 1: *Medication*

Medication	Dose	*Anupana* (vehicle)	Time
Chandraprabha vati [5]	2 tab. BD	*Jala* (water)	After meal
Arogyavardhini Rasa [8]	4 tab. (each of 500mg) BD	*Jala* (water)	Empty stomach
Falaghruta [9]	10ml OD	*Ushnodaka* (warm water)	Before break fast
Anutaila11-Pratimarsha Nasya	2 drop in each nostril	-	Once in the morning

3. Observation and Results

After 1 month of medication, vaginal discharge stopped. P/S-No vaginal discharge found.

Table 2: *Investigation*

Blood report									
Investigation			Before treatment			After treatment			
Hb			10 gm%			12 gm%			
S. Prolactin			83.66 ng/ml			17.96 ng/ml			
S.TSH			1.608 micro iu/ml			-			
FBS			89.2 mg/dl			-			
USG: Ovulation Study									
	Before Treatment					**After Treatment**			
	Day*	Rt. Ovary	Lt. Ovary	Endometrium thickness	Pouch of douglas	Rt. Ovary	Lt. Ovary	Endometrium thickness	Pouch of douglas
1st cycle	12th	-	-	-	-	MSF	29x19 mm	Tripleline 8mm	-
	14th	20x22	MSF	Triple line	-	MSF	Ovulation	Tripleline	Fluid+

		mm						8mm	
	16th	26x25 mm-cyst	MSF	Trippleline	-	-	-	-	-
2nd cycle	12th	-	-	-	-	-	-	-	-
	14th	20x21 mm	19x20 mm	Trippleline	-	-	-	-	-
	16th	28x25 mm-cyst	20x23 mm	Trippleline	-	-	-	-	-

Follow up: Ovulation study

	Day*	Rt. Ovary	Lt. Ovary	Endometrium thickness	Pouch of douglas
1st month	12th	MSF	10x11mm	Tripleline	-
	14th	MSF	Ovulation	Tripleline 8mm	Fluid+
2nd cycle	12th	MSF	17x17.5 mm	Tripleline	-
	14th	MSF	23x29 mm	Tripleline	-
	16th	MSF	Ovulation	Tripleline 8mm	Fluid+

*from the 1st day of the menstrual cycle

4. Discussion

Chandraprabha Vati, having *Vrushya* [5] (fertile) property. Its main contains are *Shilajeeta* and *Guggulu* [5]. *Shilajeeta* is *Vrushya* [6] (potent for ovulation and spermatogenesis) and has *Rasayana [6]* (Rejuvenation) effect. Due to it's this effect, it works on *Rasa Dhatu.* When the *Rasa Dhatu* becomes proper its *Upadhatu* (*Artava* and *Stanya*) also become *Shoodha*. Therefore, the chance of conception increased. *Gugglu* has *Vrushya* [7] (fertile) property. It has *Snigdha*, *Pichchhil*, *Tishna* and *Ushana* property due to this property it having *Vataghna* [7] effect.

Vandhyatva is mentioned in *Ras pradoshaj vikara* [8]. *Arogyavardhini Ras* has *Deepana* and *Pachana* [8] effect. One of the main contain is *Chitraka moola* [8] which has *Ama-Pachaka* effect due to this property *Arogyavardhini vati* works on *Ras dhatu*.

Faladhruta is mention in *Vandhya Chikitasa* [9]. Most of the contains of *Faladhruta* have effect on *Rasa Dhatu*.

In Udhva Jatrugata Roga (above the clavicle disease) *Nasya* is considered as *Pradhana Chikitsa* [10] and in hyperprolactinaemia the pathology occurs above the clavicle region. *Anu Taila* [11] has *Anu Gun* (easily spread in all organs) and *Taila* has a *Vatghana* [12] property. So it can be said that *Pratimarsha nasya* of *Anu taila* may regulates the H-P-O axis and regulate the ovulatory cycle.

5. Conclusion

Thus present case study concludes that the holistic approach of Ayurvedic system of medicine gives relief to the patient of Hyperprolactinaemia. There were no adverse effects found during the Ayurvedic medication.

Acknowledgement

I heartily thank management of Akhandanand Ayurved College and Hospital to provide me all kind of facility to complete this case study. I also thankful for the teachers, seniors and batch mate who gave the valuable guidance and help for the work.

References

[1] Dutta, D.C., 1990: Amenorrhea. *Text Book of Gynecology.* New Central Book Agency Pune, 445.

[2] Wikipedia Cited, 14th Feb.2016, Hyperprolactinaemia. https://en.m.wikipedia.org/wiki/prolactin.

[3] Sushruta, Sushruta Samhita with Ayurvedtatva sandipika Hindi commentary by Dr. A. Shastri, Chakhambha Bharti Academy, Varanasi, Re-print-2011. Uttartantra chap. 38/3, 203.

[4] Agneevesha, Charaka, Dradhabala, Charaka Smhita with Vidhyotini Hindi commentary by Kashinath Shatri and Gorakhnath, Chakhambha Bharti Academy, Varanasi, Re-print 2008. Sutrasthana chap. 28/10, 571.

[5] Sharngadhar, Sharngadhar Samhita with Jiwanprada Hindi Commentary by Dr. Smt. Shailaja Srivastava, Chakhambha Orientalia, Varanas, Re-print 2009, Madhyakhanda, chap. 7/40-49, 226.

[6] Agneevesha, Charaka, Dradhabala, Charaka Smhita with Vidhyotini Hindi commentary by Kashinath Shatri and Gorakhnath, Chakhambha Bharti Academy, Varanasi, Re-print 2009, Chikitsa Sthana chap.1 -3 Pada/49, 44.

[7] Sushruta, Sushruta Samhita with Ayurvedtatva sandipika Hindi commentary by Dr. A. Shastri, Chakhambha Bharti Academy, Varanasi, Re-print-2010, Chikitsa Sthana chap. 5/41, 45.

[8] Vagbhat, Rasaratnasamuchchaya with Siddhaprada Hindi Commentary by Siddhinandan mishra, Chakhambha Orientalia, Varanasi, First edition 2011, Chap.20/108-114, 466.

[9] Acharya Sharngadhar, Sharngadhar Samhita with Jiwanprada Hindi Commentary by Dr. Smt. Shailaja Srivastava, Chakhambha Orientalia, Varanasi, Re-print 2009, Madhyakhanda, chap. 9/8, 226.

[10] Astanga Hridaya with Nirmala Hindi commentary by Brahmanand Tripathi Chakhambha Sanskrita Pratishthana, Varanasi, Re-print 2012, Sutrasthana chap.20/1,244.

[11] Agneevesha, Charaka, Dradhabala, Charaka Smhita with Vidhyotini Hindi commentary by Kashinath Shatri and Gorakhnath, Chakhambha Bharti Academy, Varanasi, Re-print 2008, Sutrasthana chap. 5/63-70, 123.

[12] Agneevesha, Charaka, Dradhabala, Charaka Smhita with Vidhyotini Hindi commentary by Kashinath Shatri and Gorakhnath, Chakhambha Bharti Academy, Varanasi, Re-print 2008. Sutrasthana chap.13/44. 267.

Cloud Publications
International Journal of Advanced Ayurveda, Yoga, Unani, Siddha and Homeopathy
2016, Volume 5, Issue 1, pp. 330-333, Article ID Med-305
ISSN: 2320 – 0251

Case Study | Open Access

A Case Study on Palmer Planter Psoriasis

Dilip Kumar Kataria, Shreeba Jadeja, Dharmesh Patel, Dhananjay Patel and Dhamini Nirmal

Kayachikitsa Department, Akhandanand Ayurved College, Ahmadabad, Gujarat, India

Publication Date: 23 May 2016

Article Link: http://medical.cloud-journals.com/index.php/IJAAYUSH/article/view/Med-305

Abstract Ayurveda is the science of life and aims of the Ayurveda are to maintain the health of healthy person and cure the disease. Palmer-planter psoriasis is a chronic skin disease, mainly affects palms and soles. Especially Palmer-Plantar psoriasis is painful fissures and bleeding which are more common. Psoriasis is characterized by hyperproliferation and abnormal differentiation of epidermal keratinocytes, infiltration by T-lymphocytes and various endothelial vascular changes in the dermis. Palmer-planter psoriasis is correlated with *Vipadika.* The treatment which is given in Ayurveda is *Shamana* and *Shodhana*. Here the role of Ayurveda, A 42 years old female patient suffering from Palmer plantar psoriasis since 15 years with increased during 2 years treated with Virechana karma (~Ayurveda purification therapy) followed by Ayurveda medication– Trikatuchurna, Arogyavardhinivati, Triphala-Vasa-Khadirachurna, Eranda tail (Local). After 3 months of treatment result noticed in her symptoms like as in erythematous lesion, pruritus, scales and fissures of soles and palms, disturbed sleep were decreased and improvement in these treatment of Ayurveda without any adverse effect.
Keywords *Vipadika; Virechana Arogyavardhini Rasa; Mahakhadira ghee; Triphala-Vasa-Khadirachurna*

1. Introduction

Ayurveda is the science of life and aims of the Ayurveda are to maintain the health of healthy person and cure the disease. Palmer-planter psoriasis is a chronic skin disease which mainly affects palms and soles. Lesions are well demarcated, erythematous, plaque. Sometimes, the involvement is diffuse. Surmounted with massive silvery white or yellowish scales which in contrast to the lesions on other parts of the body, are difficult to remove. Especially Palmer-Plantar psoriasis is painful fissures and bleeding which are more common. In these, there is rapid proliferation and maturation of epidermal cells due to an increase in the proliferating cell compartment (basal/suprabasal epidermis) mediated by TGF α, IFN γ and other cytokines. these manifests as: shortened epidermal cell cycle with the basal cells going through the process of keratinization and cornification in 1.5 days (normal, 28-30 days) and also faster maturation & shedding of epidermal cells in 4 days (normal, 26-28 days) [1]. Palmer-Plantar psoriasis can be correlated with *Vipadika,* is one of the types of the *Kushthroga* (~skin disorder) [2]. It is included in *Ksudrakushtha* with *Vata-Kaphaja Dosha* involvement [1] and it is characterized by *Pani-Padasphutna* (fissure in palms and soles) and *Tivravedana* (with severe pain)

which are the cardinal symptoms [2]. The treatment which is given in Ayurveda is *Shamana* and *Shodhana*. According to Ayurveda, *Chikitsa* (Good clinical practice), is cure the disease without recurrenance of the disease [3].

2. Case Presentation

A 42 years old married female, visited Govt. Akhandanand Ayurveda College and Hospital with complain was fissures in the soles and palms (soles>palms) with prurit us which increases during cold and dry atmosphere and also at night time, scaling on bilateral soles and palms (soles<palms) with erythematous, and pain. H/o all above complaints since 15 years, increased during 2 years, patient took various types of treatment like allopath, homeopath and also advertisement related ointment, she also took topical steroids for local application since 2 years but was not getting permanent relief because of recurrence of the disease. So she came here for further advance treatment in Ayurveda. She under gone 3 month of Ayurvedic treatment.

Treatment Protocol

Table 1: *Virechana Karma*

Name of Procedure	***Aushadha***	Dose *	Duration	***Anupaana***
Snehana karma	*Mahakhadira ghrita [3]*	1st day-30ml	5 days	*Ushnodaka*
		2nd day-50ml		(lukewarmwater)
		3rd day-100ml		
		4th day-130ml		
		5th day-160ml		
Abhayang	*Nirgundi +Erand oil [4]*	50-60 ml	45 mins	
(massage)			For 3days	
Swedana	With *Dashamoola*	-	15-20 mins	-
(fomentation)	*Kwatha*		For 3 days	
VirechanaDravya	*Ichhabhedirasa [5]*	4 tab	1 day	Cold water
		16*vega* appear		
		Madhyam type of shuddhi(bio-purification)		
Shaman chikitsha				
Aushadha (medicine)		Dose	Anupan (vehicle)	Time
Trikatuchurna [6]		1gm-TDS	Honey	After meal
Triphala [7]-1gm *Vaasaa [8]*-3gm *Khadira [9]*-1gm		5g– TDS	Luke warm water	After meal
Arogyavardhinivati [10]		2 tab-TDS	Water	Before meal
Erand tail (for local app.)		20 ml-qds	-	6am-1pm-7pm-10pm

*dose decides according to patient's daily condition

3. Observation

Table 2: *Results*

Sr.	Lakshana (Sign & Symptom)	B.T.	After Virechana Karma	A.T.
1	Scaling of Skin	+++	++	Occasionally
2	Erythematous	++	+	-
3	Fissure (B/L U.L.&L.L.)	+++	++	+
4	*Vibandha* (constipation)	++	-	-
5	Disturbed sleep	+++	+	-
6	Stress (due to disease)	+++	+++	+
7	Pain	+	-	-

4. Discussion

Patient diagnosed with *Vipadika.* According to Ayurveda*, Doshapra mana* of *Vyadhi* (~chronicity in disease) of the patient was very high, and then planed for *Sodhan Karma*. So, *Virechan Karma* (~purgation therapy) selected and then started palliative treatment for avoid the recurrence of the disease.

According to Ayurveda *Vipadika* is the *Vatakaphaja Dosha* predominant disease, *Sodhan chikitsha* by *Virechana karma* followed by *Snehan karma* by which work as *Vataghna, Kushtaghna* also and followed also *Abhyaga* and *Swedana Karma* which work on both *Vata* and *Kapha Dosha*. During *Virechana Karma,* patient got 16 vegas during 9am to 5pm its considered as *Madhyam type of suddhi* (bio-purification) in Ayurveda texts without any complication. After Virechan Karma for shaman chikitsha *Aroghyavardhini vati* started which indicated in all type *kushtha* (~psoriasis) specially *Vata Kaphaja. Trikatu* is indication of *kaphaja* and *Tvakaroga* (~Skin disorder). *Vaasaa-Triphala-Khadira powder* acts as *kushtaghna* effect. *Erandtaila* has effect in *Kushtharoga* also it's a best act on *Vata Kaphaja Dosha.*

5. Conclusion

After observation of all data we conclude that the holistic approach of Ayurveda best acts on case study of plantar palmar psoriasis (~*Vipadika*) and gives permanent relief to the patient. There were no adverse effects found during the Ayurvedic medication.

Acknowledgement

I thanks to our Akhandanand Ayurveda College and hospital to provide me all kind of facility to complete this case study. I also thankful for the teachers, seniors and batch mate who gave the valuable guidance and help for the work.

References

[1] Neeta Khanna, Trilok Raj Tejasvi, 2012: *Step by Step Psoriasis Management*. First Edition. Jaypee Brothers Medical Publishers, New Delhi.

[2] Acharya Charaka, Charak Samhita, Ayurveda Dipika commentary by Shree Chakra Panidatta, Edited by Vaidya Yadavji Trikamji Acharya, Chaukhamba Surbharti Prakasan, Varanasi, Re-printed 2013, Chikitsha chap. 7/22, 29, 451.

[3] Acharyacharaka, Charak samhita, Ayurveda Dipika commentary by Shree Chakra Panidatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhamba Surbharti Prakasan, Varanasi, Re-print: 2013, Chikitsha chap. 1/3, 377.

[4] Acharyacharaka, Charak Samhita, Ayurveda Dipika commentary by Shree Chakra Panidatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhamba Surbharti Prakasan, Varanasi, Re-print: 2013, chikitsha chap. 7/152-156, 457.

[5] Acharyacharaka, Charak Samhita, Ayurveda Dipika Commentary by Shree Chakra Panidatta, Edited by Vaidya Yadavji Trikamji Acharya, Chaukhamba Surbharti Prakasan, Varanasi, Re-print 2013, chikitsha chap. 26/30, 599.

[6] Rasayogasagar 1/332.

[7] Bhavamishra, Bhavaprakash Nighantu commentary by Dr. K.C. Chunekar edited by Dr. G.S. Pandey, Chaukhambha Bharati academy, Reprint: 2009, chap. 1/63, 19.

[8] Bhavamishra, Bhavaprakash Nighantu commentary by Dr. K .C. Chunekar edited by Dr. G.S. Pandey, Chaukhambha Bharati academy, Reprint: 2009, chap. 1/43, 12.

[9] Bhavamishra, Bhavaprakash Nighantu commentary by Dr. K.C. Chunekar edited by Dr. G.S. Pandey, Chaukhambha Bharati academy, Reprint: 2009, chap 3/90, 320.

[10] Bhavamishra, Bhavaprakash Nighantu commentary by Dr. K.C. Chunekar edited by Dr. G.S. Pandey, Chaukhambha Bharati academy, Reprint: 2009, chap. 5/31, 32, 525.

[11] Vagbhat, Rasaratna Samuchchaya with Siddhaprada Hindi Commentary by Siddhi Nandan Mishra, Chakhambha Orientalia, Varanasi, First Edition, 2011, Chap. 20/108-114, 466.