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A PHARMACO-CLINICAL STUDY OF ARJUNA IN COMPARISION TO MANJISHTHA W.S.R TO VYANGA

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ABSTRACT

Nowadays *vyanga* has become a very common problem. Though it does not affect the working capacity of person but affects psychologically by affecting beauty of face. In *Ayurveda* mental and physical health are directly proportional to each other. *Acharya Vagbhata* has explained that because of *krodha, shoka, ayas (*stress*), vata* and *pitta dosha* gets vitiated and takes *sthansamshraya* at *mukhgata twacha* and cause *dushti* of *bhrajak pitta* due to which painless, thin, *shyava Varna mandalas* get develop along with symptoms of *daha* and *kandu*. In modern medical science the topical steroids which are used has their own limitations and sometimes they destroy the whole melanocytes cells leading to more miserable condition. Moreover it is very costly and is not easily available for patients of all socio-economic status. In Ayurveda there are so many drugs which are *kushthagna, kandughana, raktashodhak, twak prasadak* and *varnya* in their properties and all these properties are helpful in management of skin diseases and can produce cutaneous de-pigmentation that remove the discolouration of skin. So considering these points and on the basis of reference given by *Acharya Sharangdhara Arjuntwak churna* and *Manjishtha churna* were selected to provide effective and safe medicine to society.

Keywords: *Arjuna, manjishtha, vyanga, Ayurveda*

INTRODUCTION

Ayurveda is very effective in treatment of skin diseases and *vyanga* is a disease which is described firstly by *Acharya shushruta* under *kshudra roga*[1]. *Acharya vagbhata* has also followed *Acharya sushruta* and added *shoka* as *nidan* along with *krodha* and *ayas (stress)*[2]. Though *vyanga* is not a serious systemic disease but from treatment point of view it possesses great importance because it affects the beauty of face which psychologically affects the patient. In *Ayurveda Acharya sharangdhara* has mentioned various *lepa* formulations for treatment of various skin diseases[3] among which for *vyanga* he has mentioned *Arjuna twak churna* or *manjishtha churna* with *navneeta* or *madhu*[4]. *Manjishtha* is very well known and established drug for skin disease and various researches has been carried out on it on basis of its chemicals also, so it was decided to select it as drug of control group and *Arjuna* was decided to be a trail drug because it is an

established drug for heart and after finding positive clinical results its mode of action has been tried to correlate with the actions of chemicals which are present in it on hyper pigmentation.

Drug review:

ARJUNA: The tree is common throughout the greater part of the Indian peninsula along rivers, streams, ravines and dry water courses, found in sub Himalayan tract, Chota Nagpur, Orissa, west Bengal, Punjab, Deccan, konkan, rare in Karnataka, except in tirunelveli, N.circar.[5]

Properties and action of *Arjuna:* [6]

- ***Rasa :-*** *Kashaya,* ***Guna :-*** *Laghu, Ruksha,* ***Veerya :-*** *sheeta,* ***Vipaka :-*** *Katu*
- ***Prabhava :-*** *Hridya*
- ***Doshaghnata: -*** *Kaphapittashamaka.*

Pharmacological activities:-[7] Cardio protective, anti-anginal, spasm genic, oxytocic, antifertility, cytotoxic, antifungal, antibacterial, hepatoprotective.

Substitutes and adulterants:-[8] Stem bark of *Lagerstroemia speciosa* is reported to be an adulterant of *Terminalia Arjuna*. It is also reported that bark of several other species of Terminalia are being sold indiscriminately under the name Arjuna, viz., *Terminalia bialata* steud, *T. Billerica* Roxb*., T. alata Heyne* ex Roth (Syn. *T. tomentosa* W. &A.), *T.manni* King, *T. myriocarpa* Heurek and muellArg., *T. chebula* Retz., *T. catappa* Linn, *T. Purifolia* Kurz., *T.travancorensis* Wight & Arn., *T. pallid* Brandis, *T. citrine* Roxb.ex.Flem., *T.paniculata* Roth. The bark of *T. alata* is also used as an adulterant of *T. Arjuna.*

MANJISHTHA: - it is found throughout India, ascending to an altitude of 3750 m from North-West Himalayas eastwards

Properties and action of manjishtha[9]**:**

- ***Rasa :-*** *Madhura, Tikta, Kashaya*
- ***Guna :-*** *Guru, Ruksha*
- ***Veerya :-*** *Ushna*
- ***Vipaka :-*** *Katu*
- ***Doshaghnata:*** *Kaphapittashamaka*.

Pharmacological activities[10]

- Antioxidant, antibacterial, anticancer, anti-inflammatory, antitumor, antiviral, haemostatic, anti-lipid per oxidative activity, hypoglycaemic.
- Mollugin showed inhibition of passive cutaneous anaphylaxis and protection of mast cell degranulation in rats. It also exhibited considerable activity against lymphoid leukaemia (P_{388}) in mice.

Substitutes and adulterants[11] *Rubia cordifolia* is used as an adulterant to *swertia chirayita*. Stem of *R. cordifolia* is generally used as a substitute of its root.

Aim and Objective:-

-To evaluate the efficacy of *Arjuna twak* on *vyanga* in comparison to *Manjishtha.*

-To observe the Pharmacognostic, phytochemical and pharmacological study of *Arjun twak* & *Manjishtha*.

-To find out the safe, effective, low-cost, easily available drug for the patient suffering from *vyanga.*

Material and Methods-

Patients: For the clinical study patients of *vyanga* were taken randomly from the OPD section of department kayachikitsa of pt. Khushilal Sharma govt (Autonomous) Ayurveda College and institute, Bhopal (M.P).

Drugs: - The raw drug *Arjuna* and *manjishtha* was obtained from the pharmacy of pt. Khushilal Sharma Govt (Autonomous) Ayurveda College and prepared at Rasashastra department of college.

Pharmacognostical study[12]**:**

Analysis Results:

Organoleptic Characters:

Test parameters:

Condition – *Arjuna* and *manjishtha* both were dried.

Colour- *Arjuna*- Pale, externally flesh coloured and *manjishtha*- Brown to purple

Odour- *Arjuna*- Indistinct and *manjishtha*- Characteristic

Taste- *Arjuna*- Bitter and *manjishtha*- Indistinct

Figure 1: T.S Section of *Arjuna*

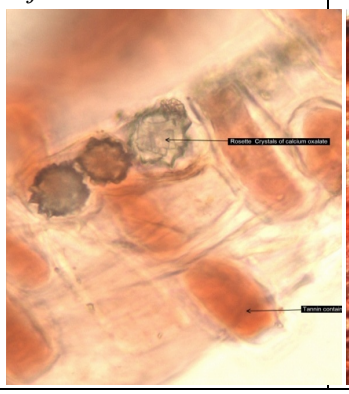
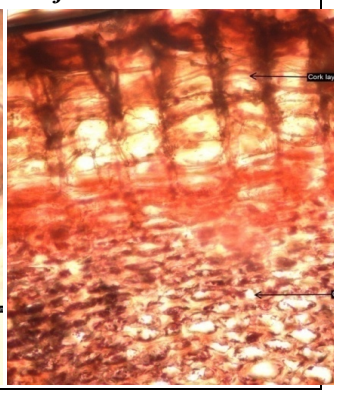


Figure 2: **T.S. Section of *manjishtha***



Physiochemical Analysis[13]

The analytical study of *Arjuna* bark and *manjishtha* was undertaken to analyze the sample by using different physiochemical parameters and HPTLC profile.

Parameters	Result *Arjuna*	API standards	Result *manjishtha*	API standards
Foreign matter	Nil	Not more than 2%	Nil	Not more than 2%
Loss on drying	4.65%	Not more than 12%	5.97%	-
Total ash	21.54%	Not more than 25%	8.23%	Not more than 12%
Acid insoluble ash	0.72%	Not more than 1%	0.28%	Not more than 0.5%
Alcohol soluble extractive	22.75%	Not less than 20%	4.43%	Not less than 3%
Water soluble extractive	21.06%	Not less than 20%	30.03%	Not less than 17%

Figure 3: RF spots of *Arjuna*

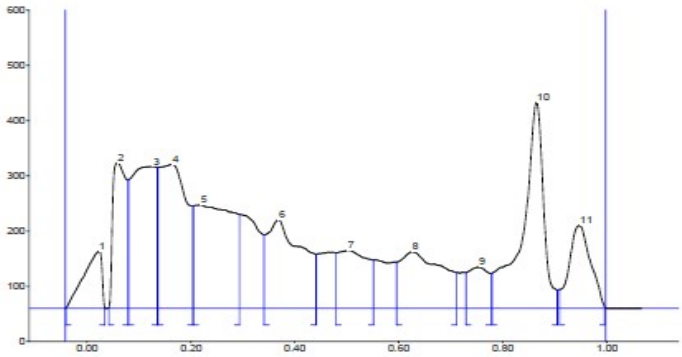


Figure 4: HPTLC Plate of *Arjuna*

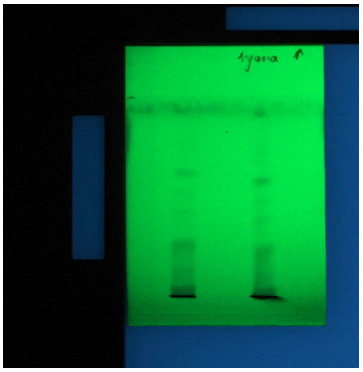


Figure 5: HPTLC plate of *manjishtha*

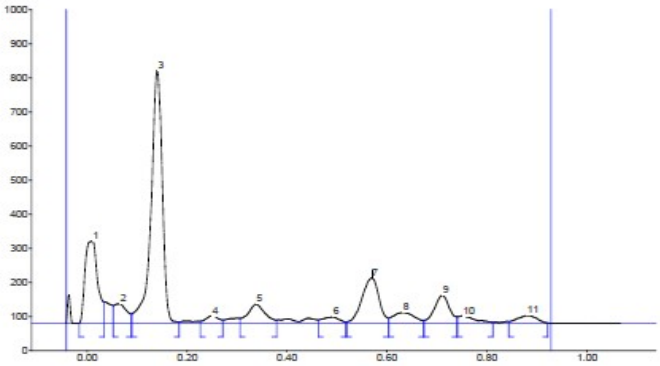
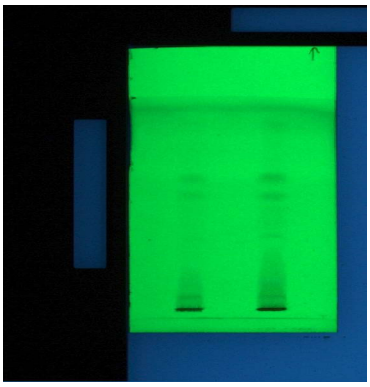


Figure 6: RF spots of *manjishtha*



Study design: The study was conducted on total 60 patients and all patients completed their treatment. It was a randomized control trial study of *Arjuna* in compared to *manjishtha* on *vyanga*. A complete proforma included all history taking points, criteria and investigations and written consent was taken from all the patients before trail. All the details regarding study was explained to every patient and was set free during the study. In both the groups application mode was *lepa* and base was of *navneeta*. Total duration of study was of 8 wk. and follow-up was of 15 days.

Diagnostic criteria:-

Patients characterized with *Niruja* (painless), *Shyava* (bluish black), *Tanu Mandalas* (macules) on the face, *Skin appearing rough with bluish black patches / spots, If edges are coppery red or white, Itching, Burning sensation with tingling.*

Inclusive criteria:-

Patients fulfilling the diagnostic criteria, between the age group 16 and 60 years, irrespective of sex, religion, occupation, and chronicity were selected for the study.

Exclusion criteria: - Hyperpigmentation caused due to any systemic diseases such as:-

- Addison's disease,
- Cushing syndrome and
- systemic lupus erythematosus,
- hyperpigmentation since birth like nevus and those caused by tumors such as malignant melanoma

Assessment criteria: - The effect of therapy was assessed on the basis of subjective and objective criteria.

Subjective criteria: - It includes

- Itching
- Burning sensation...
- Skin/lesion -Skin texture (dry/oily),
- Skin luster homogeneity

Objective criteria:-

- number of lesions,
- Size of lesions.

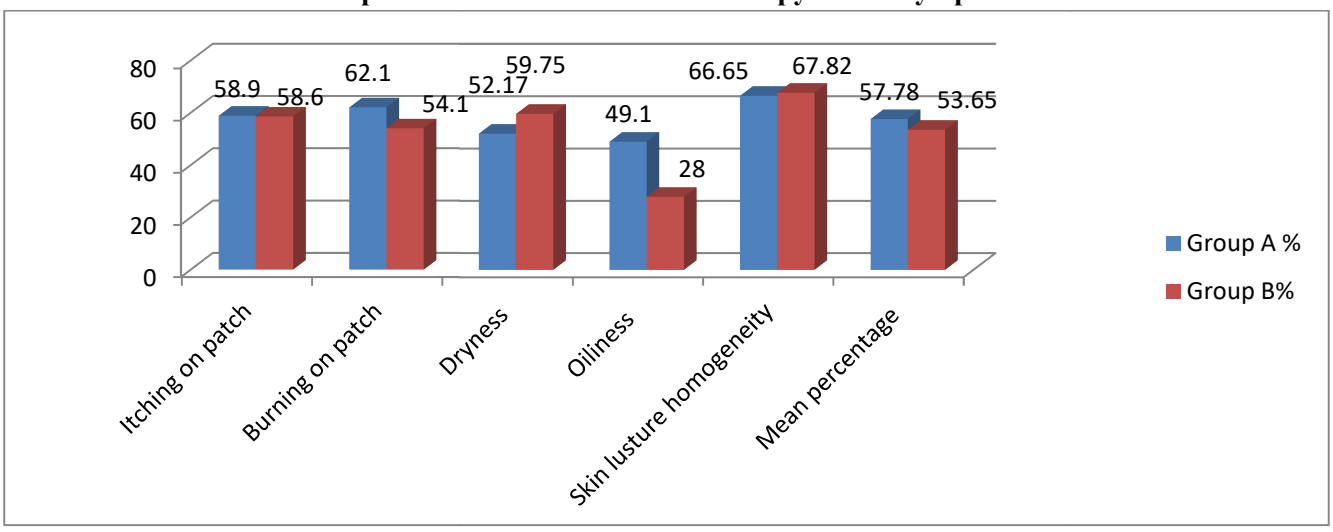
A grading system was adopted for assessment

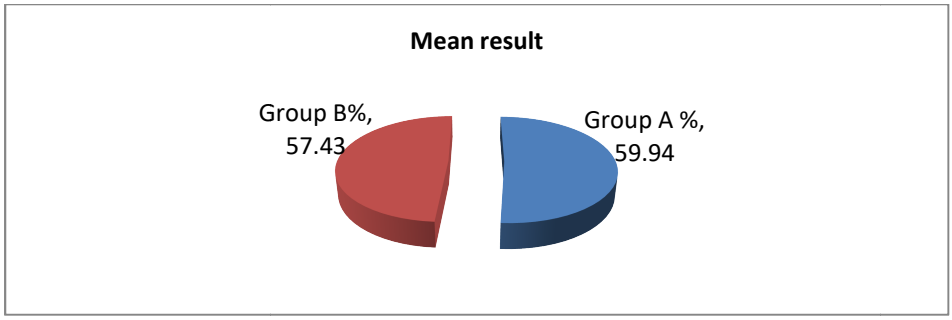
- ***Note: when lesion or patches were multiple, the size of the largest lesion was taken into consideration mainly.**

The clinical study was carried out on total 60 patients, divided into two groups of 30-30 i.e. Group A and Group B.

- Group A was a trail group in which patients were administered with Arjuna twak lep.
- Group B was a control group in which manjishtha churna lep was administered.

Comparative Chart of Effect of Therapy on All Symptoms





DISCUSSION

Discussion on analytical study:

In T.S *Arjuna* shows both big and small rosette crystals and *manjishtha* shows clearly visible cork and cortex layers with xylem, phloem and pith.

In phytochemical study *Arjuna* shows more water and methanol solubility. And in *manjishtha* phenolic compounds are found.

In qualitative analysis of tannin and carbohydrate plant extract shows positive results.

In *Arjuna* HPTLC with solvent system toluene: ethyl acetate: formic acid: methanol (ratio 3.5:3:1:5:1) and spray reagent ferric chloride shown one visible spot of tannin, while with solvent system toluene: ethyl acetate: formic acid: methanol (ratio 6:3:0.1:1) and spray regent anisaldehyde shown six to twelve visible spots.

Discussion on Effect of Therapy

During study it was observed that results of *manjishtha* were markedly visible within a week after trail started, whereas *Arjuna* took near about 20-25 days to make results visible. The whole study was of 8 weeks and in patients of *manjishtha* group after completing a month, results started getting stagnate but a continuous progressive results were seen in patients of *Arjuna* group.

Development of disease *vyanga*[14]:-

Krodha, shoka,ayasa are the *nidan* which Vitiates *pitta* and *vata* and this Vitiated *vata* along with *pitta* travels & Gets localized at facial skin due to which *Dushti* of *bhrajak pitta* occurs and Develops *lakshanas* i.e. *daha yukta, Kandu yukta, Shyav varna mandal*.

MODERN ASPECT

Because of stress, neurons in hypothalamus secrete corticotrophin release hormone which is then transported to pituitary gland where it binds to CRH receptor type-1 (CRH R1) and stimulate the secretion of Melanocyte stimulating hormone (MSH) and results in hyperpigmentation[15].

Discussion on parameters of Therapy

Itching: Because of vitiation of kapha itching occurs and *Arjuna* and *manjishtha* both are *kashaya in rasa* and ruksha in guna by which they subsides the vitiated *dosha* and relief in symptom is obtained.[16]

Burning: *Vyanga* is *pitta pradhan vyadhi* and burning is a main symptom of vitiated *pitta*. *Arjuna* possesses *sheeta veerya* by which it could have subsided effect of vitiated dosha whereas *manjishtha* possess *madhura, tikta, kashaya rasa* which all are *pitta shamak*. According to *Acharya sushruta veerya* is *pradhan* than *rasa* therefore it can be understood on this basis that *Arjuna* is more effective than *manjishtha* on this symptom[17-18].

Dryness: Dryness in *vyanga* is caused by vitiated *vata*. *Manjishtha* shows better results in dryness as it possess *guru guna, madhura rasa* and *ushna veerya*. All these inherent properties subsides vitiated *vata*[19].

Oiliness: Oiliness is caused by vitiated *kapha* and *Arjuna* possesses *kashaya rasa* which prominently controls oil, whereas *manjishtha* is also *kashaya* in *rasa*.[20]

Skin Lusture (*shyav Varna*): *Shyava Varna* occurs because of *dushti* of *bhrajak pitta* caused by vitiated *vata*. *Sheet veerya* of *Arjuna* and *guru guna* of *manjishtha* pacify vitiated *dosha* and corrects *vaivarnyata*.[21]

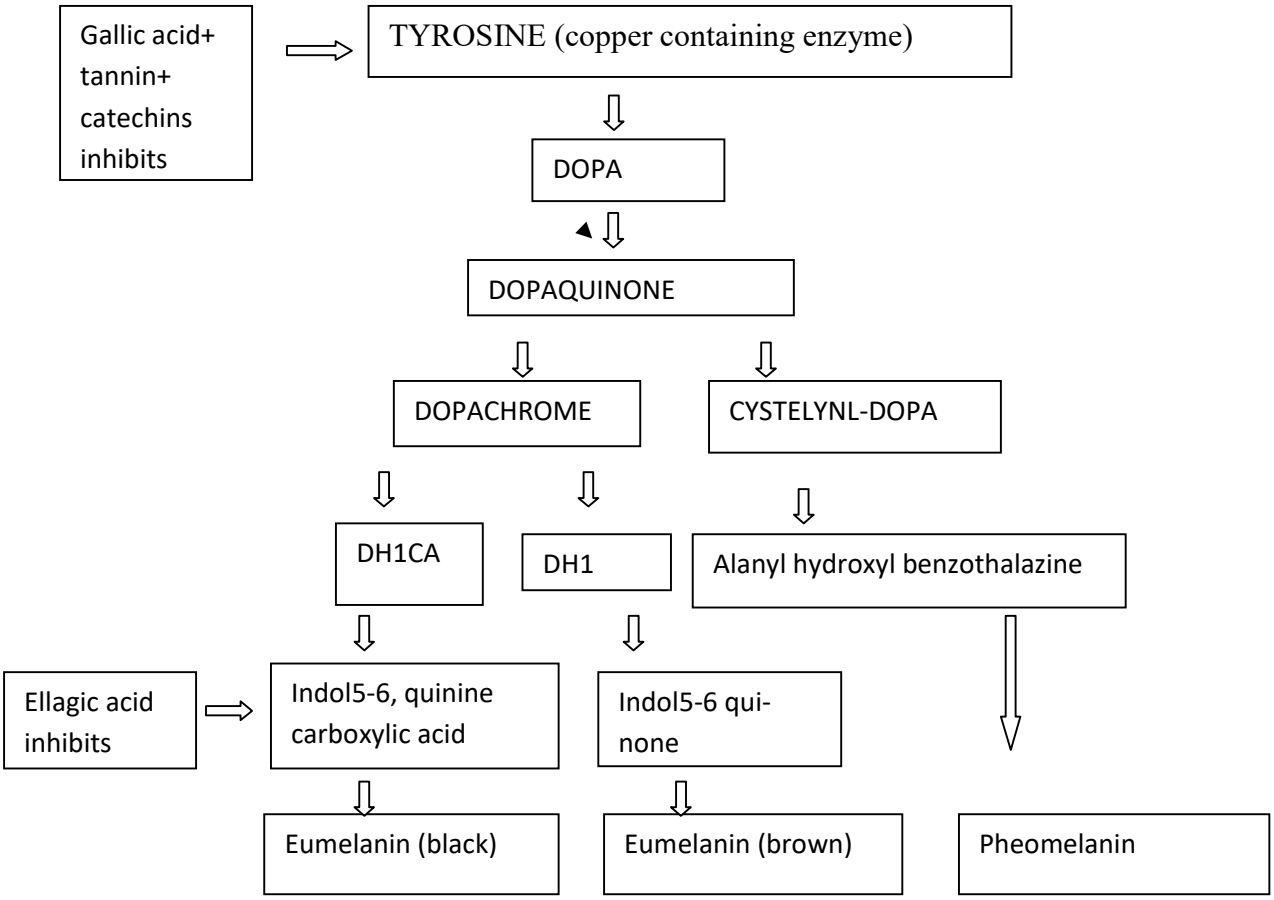
Number and size of lesion: In both parameters *Arjuna* shows improvement with mean percentage of 65.33 and *manjishtha* shows improvement with mean percentage of 66.88

During study it was observed that results of *manjishtha* were markedly visible within a week after

trail started, whereas *Arjuna* took near about 20-25 days to make results visible. The whole study was of 8 weeks and in patients of manjishtha group after completing a month, results started getting stagnate but a continuous progressive results were seen in patients of Arjuna group.

Potential of chemicals of *Arjuna* in hyperpigmentation[22-25]

Mode of action



On the basis of various researches it is observed that chemicals present in Arjuna i.e. Gallic acid, tannin, catechins and ellagic acid works on hyper pigmentation by inhibiting tyrosine's activity.

Mode of action of *manjishtha*- Chemically, it contains glucoside known as manjishthin and pupurine, along with resins, lime salts and colouring agent which directly acts on melanin pigment.[26] methanolic extract of this herb has been reported to show 14.80% mean inhibition of tyrosinase activity thereby acting as a skin whitening agent.[27]

CONCLUSION

In result of subjective parameters group A showed relief of 57.78% whereas group B showed relief of 53.65%. In results of objective parameter group A showed relief of 65.33% and group B showed relief of 66.88% whereas in overall assessment the relief percentage of group A was 59.94% and in group B it was of 57.43%.

Majority of the patients showed moderate results. As in this study single drug therapy in form of local application was used and results are moderate so there is a possibility that if along with this local application proper line of treatment with oral medication will be followed than better results could come out.

In form of *Arjuna twak* we have found a very effective easily available and low cost drug for *vyanga*. Though *vyanga* is not a serious systemic disease but possess equal importance because of its psychological effect

on life. We accept it or not but somehow external beauty possesses a great importance in everyone's life. So *Arjuna* could be a drug of choice for treating *vyanga.*

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