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Critical analysis of Anjana in Systemic Diseases

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ABSTRACT

In the management of various ophthalmic disorders *Kriyakalpa* plays an important role. *Netrakriyakalpa* like *Tarpana*, *Putapaka*, *Ashchyotana*, *Seka*, *Anjana*, *Pindi*, *Bidalaka* all these procedures have very fast action on target tissues of eye. Among the *Netrakriyakalpa* *Anjana* is the one which had tremendous importance in both Healthy people (as a cosmetic preparation) as well as in ophthalmic patients. Moreover, to this, there are other few *Aushadakalpanas* which are even indicated in systemic diseases too i.e., *Vishamajwara*, *Kaamala*, *Unmada*, *Apasmara*. *Moorcha*, *Grahabaada*, and even *Sthanika Visha Chikitsa* can be done through the usage of *Anjana*. *Anjana* is the only *Kriyakalpa* which is mentioned to treat ocular disease as well as Systemic diseases, but due to lack of critical analysis in treating systemic diseases, it is lagging behind in the usage of clinical practises and although it is only *Kriyakalpa* mentioned in *Dinacharya*. So here all efforts has been made to explain the probable mode of action of *Anjana* in systemic diseases though there are barriers to it, meanwhile how barrier will become boon for systemic circulation will be overviewed.

Key words: *Aushadakalpana*, *Pharmacological action*, *Dinacharya*, *Apasmara*

INTRODUCTION

Eyes are the doorway of perception and without eyes this world seems to be useless because when our own existence ended up in darkness then how can we enjoy the nature of universal existence. So always our *Ayurvedic Acharyas* given prime importance to protect our eyes not only to enjoy the Nature of

outside world but also to see the insight of life in totality.

In *Dinacharya Acharyas* described about daily usage of *Anjana* especially like *Sauvira Anjana* and *Rasanjana* (decoction of *Berberis aristate* - *Daruharidra*)^[1] mixed with honey as it eliminates excessive *Kapha Dosha* from eyes because it is told eyes have predominance of *Pitta Dosha* (*Alochaka Pitta*)^[2] or *Tejamahabhuta* for its proper functioning. Thus, *Anjana* is the unique therapeutic procedure to prevent eye disorders as well as to treat various type of advanced ophthalmic Disorders like *Arma*, *Timira*, *Kacha* etc.

Meanwhile *Anjana* is the only therapeutic procedure among *Netrakriyakalpa* which is highly recommended to treat some of the Systemic diseases like *Kaamala*, *Vishamajwara*, *Unmada* *Apasmara*, *Moorcha*, etc. Meanwhile It should be understood that *Anjana* is not the main line of treatment for the above-mentioned diseases, but when all the other treatment aspects

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fails, now *Anjana* come into action where Some references with *Anjana* formulation has been mentioned below.

OBJECTIVE OF THE STUDY

To explain the probable mode of action of *Anjana* in systemic diseases.

MATERIALS AND METHODS

This is conceptual type of study. All sorts of references have been collected and compiled from various available literatures like *Charak Samhita*, *Sushruta Samhita*, *Chakradatta*, *Bhaishyaja Ratnavalli* with available commentaries and other modern resources like Pharmacology, ophthalmology texts and various research articles, journals, scientific papers etc. all these methods are used as source materials to the topic to draw the necessary conclusions.

Preparation of *Anjana* mentioned in different Classics.

1. *Acharya Charaka* in *Jwara Chikitsa* mentioned about preparation of *Anjana yoga* which is *Jwara Nashaka* in nature.^[3]

Saindavam Pippalinam Cha Tandula Sa Manashilaha
|*Netraanjanam Tailapishtamshasyate Vishama*
Jware||

Take *Saindava* + *Pippali* + *Manashila* all these 3 Ingredients is to be taken and triturated with *Tilataila* till it becomes very fine this *Anjana* is applied to lower eyelids which is *Vishamajwara-nashaka*.

2. Likewise, In *Bhaishyaja Ratnavali* a Special formulation is mentioned for *Dusaadya Sannipathaja Jwara* where *Shithikukkuta Rasa* means Black colour hen having creamy white egg inside it has a jelly colourless fluid which is used as *Paanartha*, *Nasya*, and *Anjana* for the *Shamana* of *Sannipathaja Jwara*.^[4]

Presently Kadaknath chicken – completely Black but eggs are creamy white *Found in madyapradesh in jhabua and dhar district. Known for medicinal properties due to high amounts of melanin - helpful in producing several vital neurotransmitters and

hormones *Speciality - rich in protein but low cholesterol.

3. Even *Acharya Vagbhata* in *Chikitsasthana* mentioned the *Kamalahara Chikitsa* through the special *Anjana* formulation where *Haridra* + *Gairika* + *Amalaki* are taken in equal quantity and mixed with *Madhu* and applied as *Anjana* to treat *Kamala*.^[5]
4. *Acharya Chakradatta* mentioned usage of *Anjana* in certain psychological conditions like *Unmada* where *Varthi* made up of *Daruharidrachurna* and *Madhu* is rubbed and applied on the day of *Pushyanakshatra* which treats *Unmada* for sure.^[6]
Darvimadhubyam Pushyayamkrutam cha gudikanjanam | netrayorjanam Unmaadam nashayeddrutam||
5. Even *Acharya Charaka* mentioned importance of *Anjana* in treating Psychological conditions like *Unmada*, *Apasmara* and *Grahabaada Rogas* where *Trikatu* + *Haridra* + *Daruharidra* + *Manjista* + *Hingu* + *Shirisha Beeja* made Powdered and triturated with goats urine used as *Anjana*^[7] which alleviates *Unmada*, *Graharogas* and *Apasmara*.
6. *Chakradattas* another *Anjana* formulation: *Krishna Marichadya Anjana*^[8]: *Pippali* + *Maricha* + *S. lavana* triturated with *Gopitha* made *Varthi* while applying it is rubbed with *Madhu* and applied as *Anjana*- treats all types of *Unmaada* and *Bhuthonmada*.
7. *Acharya Sushruta* mentioned in *Madhumeha Chikitsa Adyaya* about the *Anjana* preparation to treat *NakthaAndyatha*, *Pilla Rogas*, *Kacha*, *Timira* etc. which can be inferred that *Netra Rogas* is due to *Madhumehaja* and to treat *Madhumehajanya Netra Rogas Tuvatakaadi Anjana* is preferred which is *Mehahara* and *Kushtahara*.^[9]

The above Preparations are few examples which can be made use to treat Systemic diseases and other then these preparations there are again a lot of *Anjana* formulations which has been explained in Classical texts. So nowadays the usage of *Anjana* became more limited clinically. As a Cosmetic purpose

a lot of people using Kajal/Soorma to their eyes without knowing and understanding how safety it is to apply on eyes.

Probable mode of Action in Systemic Diseases

Anatomical barriers

Cornea is lipid-water-lipid layer, lipid content of epithelium and endothelium is 100 times more than that of stroma and therefore allow more lipophilic than to hydrophilic substance because of the dual nature of corneal barriers, drug possessing both lipid and water solubility penetrates the cornea more readily. However lipid solubility is more important than water.

Conjunctiva is more permeable than cornea especially for Hydrophilic molecules, and high vascularity renders this route not suitable for drug delivery as the blood vessels remove the large fraction of absorbed dose.

Blood ocular barriers- include Blood aqueous barrier and blood retinal barrier.

Physiological barriers

- Nasolacrimal drainage of administered drug.
- Reflex blinking.

Factors influencing local drug penetration into Ocular tissue:

- Drug concentration and solubility - The higher the concentration very good will be the penetration but limited by reflex tearing.
- Lipid solubility - The higher the lipid solubility more the penetration.
- Alkaloids - when an alkaloid drug is put in relatively alkaline medium, the proportion of uncharged form will increase, thus more penetration.

Barriers becoming boon for Systemic Circulation

- Tear film - Under normal circumstances the volume of tear fluid is 5.7microlitre with rate of secretion about 1.2microlitre/min.

- Ph - The normal tear ph is 7.4 and if the drug Ph is different, it will cause reflex tearing.
- When any *Anjana* is applied over eyelids, it causes an increase in blinking and squeezing which propels towards Sac. Now drug passes into Lacrimal sac further it reaches to Nasolacrimal duct and thus reaches to Nasal cavity by then once it comes to contact with the Vascular nasal mucosa, relatively rapid absorption of drugs into blood stream where up to 80% of applied drugs may diffuse into systemic circulation will take place by reaching target tissues. An important property of absorption via this route is bypassing the liver due to this fact, First-pass metabolism is minimized compared to peroral administration.^[10]
- It's not the only route even when *Anjana* is applied it will get absorbed through transcorneal absorption further moving into Aqueous humor where some amount of drug is absorbed in the intraocular tissues and rest passes into trabecular meshwork into Episcleral pathway there by distribution into Systemic circulation.^[11]

DISCUSSION

- Certain *Anjana* formulations are mentioned for Psychological conditions like *Unmada* and *Apasmara*, this is because *Anjana* reaches to Nasal passage as it is important route of drug administration called as *Shirsodvara* i.e. Gateway to Head. The *Anjana* preparation having unique combination of drugs, and most of them are *Katu*, *Thiktha*, *Kashaya* in nature, which is highly penetrative and increases Blinking rate which will cause reflex tearing and drained into Nasolacrimal duct and thus enters into Nasal Cavity which is highly vascular in nature and thus reaches to Brain.
- Drug like Piperine [C₁₇H₁₉O₃N] is Alkaloid and shows high lipophilicity. It is a Bio-enhancer which when mixed with drugs promotes and augments their bioavailability without showing any synergistic effect with the drug. Piperine when

used in combination with various drugs reduces dose, side-effects, and increases bioavailability.

- Formulations like *Darvigutikadi Anjana* in *Unmada* is mentioned to use particularly on *Pushyanakshatra*, so here importance of *Pushyanakshatra* and its impact on Pharmacodynamic and Pharmacokinetic action need to be studied scientifically to prove the role of medicine in association with *Pushya Nakshatra* in the Psychological disorders.
- Anjana* preparations are most of lipophilic and sparingly water soluble in nature, which are meant to be absorbed through topical (Episcleral vein) as well nasal route.
- Drugs mentioned for *Unmada*, *Apasmara* having Chemical constituents like Flavanoids, Phenolic compounds, Alkaloids, Saponins, are major phytoconstituents responsible for Anti-convulsant activity.^[13]
- Though there are some practical problems, but still it's important to adopt in clinical practices by finding out the solution.

CONCLUSION

Kriya-kalpas are well designed procedures to treat ocular disorders but among them *Anjana* is used for both ocular as well systemic diseases which was outlined by our ancient medical scholars as they were aware of the mechanism of Blood aqueous barriers, and Blood Brain Barriers thus *Anjana* is mentioned in *Netra Vikaras* as well as in some of the Systemic disorders. *Anjana* is the simple therapeutic procedure among the *Kriya-Kalpas* for the daily usage which will acts as *Chakshushya* i.e., helps in maintaining good visual acuity. The purpose of above article is to popularize *Anjana* and to create awareness in the society, so that to overcome the lack of practical utility of medicated *Anjana* in Clinical practice and offcus still more research work is needed to be done on the applied aspects of *Anjana* in both Ocular as well as Systemic diseases.

Table 1: Showing properties and chemical constituents of Drugs.^[12]

Drug name	Rasa	Doshagnata	Guna	Chemical constituents
<i>Maricha</i>	<i>Katu Tikta</i>	<i>Kaphavatagna</i>	<i>Ushnaveerya, chedaneeyaguna</i>	Piperin, Essential oil and alkaloid
<i>Pippali</i>	<i>Katu</i>	<i>Kaphavatagna</i>	<i>Laghu, Snigda and teekshnaguna.</i>	Essential oils and Alkaloids
<i>Karanja</i>	<i>Thiktha, Katu, Kashaya</i>	<i>Kaphavatagna</i>	<i>Laghuteekshna</i>	Karanjin, and essential oil
<i>Devadaru</i>	<i>Thiktha</i>	<i>Kaphavatagna</i>	<i>Laghu, Snigda</i>	Terpinods, flavanoids and glycosides.
<i>Vacha</i>	<i>Katu, Thiktha</i>	<i>Kaphavatagna</i>	<i>Laghuteekshna</i>	Acalamone, Calamenol
<i>Amalaki</i>	<i>Amla Pradhan a Lavana Varjitha Rasa.</i>	<i>Tridoshagna</i>	<i>Ruksha, Laghu</i>	Ascorbic acid and Galotannins
<i>Goats Urine</i>	<i>Kashaya, Madhura</i>	<i>Tridoshanasha k Vishagna, Pathyam.</i>	<i>Ushna, Ruksha</i>	-----
<i>Manashilla</i>	<i>Thiktha, Katu</i>	<i>Kaphavatagna</i>	<i>Ushnaveerya</i>	Arsenic disulphide
<i>Rasona</i>	<i>Katu, Thiktha, Kashaya</i>	<i>Kaphavatagna</i>	<i>Snigda, Teekshna</i>	Allinase, Volatile oil.
<i>Shirisha</i>	<i>Thikta, kashaya,</i>	<i>Tridoshagna</i>	--	Saponins and Tannins

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