ABSTRACT:

Kriyakalpa is the basis of the ophthalmic disorders, as Panchakarma is the basis of Kayachikitsa. When we refer to our classics for the therapeutic measures adopted in the management of eye diseases, we find that the management includes many of the topical treatments along with systemic ones. The reason might be that the drugs administered systematically may not cross the blood aqueous, blood-vitreous and blood-retinal barriers. Now the topical measures came into play and these are called as ‘Kriya Kalpa’.

No specific definition of Kriyakalpa has been given by the ancient scholars except the commentator Dalhana who opines that Kriyakalpa includes various preparations like Tarpanam, Putapaka, Seka, Ashchyotana, Anjana etc. for the treatment of eye diseases, as a local measure. The process in which herbo mineral preparation (Gutika, Rasakriya & Churna) mix with water and apply on the eyelids with the help of Shalaka is called Anjana Karma. An Ayurvedic review & probable mode of action of Anjana Karma discussed in present article.

Key words: Kriyakalpa, Ocular pharmacology, Drug administration (Anjana), Eyes.

INTRODUCTION: Netrakriyakalpas are various methods of application of medicines in the eye. Acharya Susruta explains 5 varieties, but we get 7 types of netra kriyakalpas in Sharangdhara Samhita which include Tarpanam, Putapakam Sekam, Aschyotana, Anjana, Pindi and Vidalaka. In Sushruta samhita there is no indication of Pindi and Vidalaka.[1] These methods can be invariably use in all types of doshik vitiation, it is the drugs used for the procedure that make it more specific to particular dosha .e.g. seka can be performed vata predominant eye disease but it should be snigdha and koshna in nature, in pitta rakta predominant condition it should be sheeta, tikta , kashaya dravyas are preferable and in kaphavikar it should be made of Katu, tikta, kashaya dravyas. Seka, Ashchyotana, Vidalaka and Pindi can be advised in the Amavastha or early stage of a diseases process Tarpana, Putapaka and Pindi are preferred in the Pakvavastha (later stage).

Among this because of easy administration, availability, affordable price Anjana is the best option among Kriyakalpa especially when a long term therapy is needed. Anjana (collyrium) is a popular method of application of medicine inside the eye. In addition to its benefits in curing ailments
related to the eye this particular procedure is mentioned as a daily routine in order to protect the eye from various eye disorders and to maintain the equilibrium of doshas inside the eye. Though there are indications of Anjana everywhere in different contexts of Nettarogas, Acharya explore vast varieties of Anjana for the management of Drishtigatarogas.[2] It may be due to the fact that compared to other methods it can be advised for long period and Drishtigataroga needs prolonged therapy either in terms of care, prevention or for treatment.

WHEN TO ADVISE ANJANA: The appropriate time for application of Anjana, according to Acharya is after the administration of shodhana therapy and when the doshas localise only in the eye and the Amavastha is totally eliminated from the eye and the eye starts to exhibit pakwa lakshana like reduced oedema, severe itching, lack of discharge etc.[3]

Implementing these methods of treatments without losing their priority in different doshitik status deserve great attention, because the patient is benefited only if we indicate the particular method in correct time of application otherwise instead of pacifying the doshas in the eye, it may deteriorate the condition and results in complications. Acharya Vagbhatta mention to Ashchytotana as a ‘Pratham Kriyakalpa’ means there is no need of Samshodhana Karma before using it. So naturally it may be doubted whether “it is necessary to perform Ashchytotana in all cases?” Acharya himself give answer in different contexts, look the treatment of Sushkakshipaka here Tarpana is indicated after snehapana, as it is a vata pitta predominant condition Ghrita is the best option of treatment so administration of ghee internally and locally in the form of snehapana and Tarpana is highly appreciable in the treatment protocol for Sushkakshipaka.[4] So we are having the freedom to select the different treatment procedures of the eye according to the need .Just like the above example in drishtigata roga if the condition of the eye is devoid of Amavastha surely it is possible to precede the treatment with Anjana therapy. For e.g. in senile, nuclear cataract there is no chance of lens swelling as it results due to sclerosis, so it is possible to start Anjana as initial therapy on the other hand if there is swelling of the lens surely we have to wait these symptoms to subside before the application of Anjana, likewise it is possible to assess the Amavastha of Drishtigata roga through the symptoms as these diseases lack redness, discharge, oedema from their gross appearance.

CHOICE OF ANJANA IN DRISHTIGATA ROGA: The Anjana are of three types, as we have to treat diseases developed by three different humours. 1) Lekhana Anjanas mentioned for Kapha predominant conditions 2) Ropana Anjanas for pitta related diseases 3) Prasadana Anjanas for vataja vikaras. The Lekhana Anjanas are made of dravya having kashaya, amla, lavana and Katu in rasa, Ropana Anjana are with tikta dravya and Prasadan Anjanas with madhura sheeta dravyas.[5]

These three varieties are of much significance while treatment of Drishtgata roga. In the management of cataract it is having predominance to kapha, lekhana Anjanas are of great importance .we may come across the whole varieties like ChoornAnjana-the powder form, PindAnjana (Gutika)- the solid form and Rasakiya which is in the semisolid form
(Rasakriya) in this particular context.

**ANJANA MATRA (DOSE OF ANJANA):** Depending on the quality of drugs the Anjanas are divided in to two.1. Tikshna 2. Mridu. So the above mentioned Anjanas can be again categorise in to two groups, the dose of Anjana depends these two qualities.[6]

The dose of Gutika Anjana of tikshna variety is Harenu matra and of mridu variety it’s double the dose of it. The dose of Rasakriya is vella matra for tikshna variety and in mridu variety it’s twice the dose of above and the amount of Choorna Anjana to be applied in the eye is around two Shalaka in tikshna variety and three in the other.

Though Acharyas advise the above mentioned dosage for application of Anjana, practically the individual response of eye and patient may vary which depends on various factors like the tolerance capacity of the patient, the Prakriti of patient, type of Anjana used, the amount applied etc, so it is better to apply least quantity of Anjana when it is applied for the first time, especially tikshna Anjana and gradually the amount can be increased to a maximum for e.g. of Gutika Anjana.

**WHEN TO APPLY ANJANA:** There is different opinion regarding the timing of Anjana. During night due to sleep and in the day time because of the hot rays of sun the eye becomes weak, so it is advised to do Anjana both morning and evening. While applying in the morning time it should be kapha shamana in nature as there is chance of vitiation of the same in the morning while in the evening it is better if it is pitta shamana as it may make the eye fresh and cool which became weak due to the exposure to hot sun-in this way the application of Anjana in morning and evening surely correct the daily vitiation of doshas in a healthy eye. It is not applicable in pathological eye.

The other opinion is regarding the application of tikshnaAnjana as it contains Katu, lavana, amla dravyas which of boutique combination of agni vayu applying it in day time will again harm the eye as there is hot outside ,but during night the coolness of the moon helps the eye to recover easily from the ill effects of tikshnaAnjana. But according to some, application of Anjana in night should strictly avoid to them the sheeta in night it will cause stambhana so the drug can’t act properly. Acharya Sushruta advises to do Anjana in morning for kapha predominant eye diseases, during evening for vata related eye diseases and in rakta pitta diseases it is advised to do in night.

**METHOD OF APPLICATION:** After deciding the type and dose of Anjana the desired amount of it can be applied in the eye using the different shalakas mentioned for particular purpose i.e. If Lekhana is the aim of treatment the shalaka made of Tamra (copper) is the best option and for Ropana karma a kalalohaja (iron) shalaka is better and if prasadana is the ultimate aim of treatment one can prefer a shalaka made of roopya (silver) suvarna (gold) and anguli (finger) is also mentioned for the application of Anjana in the eye.

After applying the Anjana patient is asked to move the eye ball after gently closing the eye, the patient is asked to move the eye so that Anjana may spread all over the surface of the eye, opening and closing of the eye spontaneously, rubbing of the lid forcefully and washing of eye should be avoided just after the application of Anjana karma. When the eye becomes free from the gritty feeling developed after
the application of Anjana netra prakshalana (Eye wash) should be the performed with suitable decoction. While preparing the decoction the factors like disease, dosha and season should be considered. After washing the eye, it should be cleaned with a piece of clean cloth. In conditions like severe vitiation of kapha dhoomapana can be advised after Anjana. TikshnAnjanas are contraindicated for prolonged use, and pratyAnjanas are advised for correcting the complications if developed during application of tikshnAnjanas.

MODE OF ACTION: According to Acharyas the LekhanAnjana because of its tikshna property, eliminate the doshas from the siras pertained to vartma & eye and from the tissue, from related srotas and also from the sringataka marma through mouth, nose and eye.

We get this much reference regarding the action of drug. Because of the complexity of the combinations applied during this procedure researches regarding the mode of action of ayurvedic drug still remains as a challenge. Any way there is no doubt that the drug administered in the eye surely penetrate the different medias and reach the proposed site, this is the inference that we get from the clinical trial. We need more research in this field especially to understand the differentiation of the drug towards different site, its absorption, mode of action so that it will be accepted by the scientific world.

DISCUSSION: Most of the Anjana contain Arsenic and Antimony compounds. The molecular size of these compounds are very high. They can’t cross blood aqueous barrier when they are administered orally/systemically. Anjana form increases the bio availability of drug by increasing the tissue contact time. So, the problem can be overcome when we apply it topically in the form of Anjana. Having the knowledge of these barriers our ancients advised to use such heavy drugs in the form of Anjana.

CONCLUSION: As in Ayurveda, we are applying ophthalmic therapeutic either in the form of local therapy i.e. Kriyakalpa or in the form of systemic use i.e. oral Chakshushya dravyas. The main aim of any pharmaco therapeutics is the attainment of an effective concentration at the site of action for a sufficient period of time to elicit the response. In practice, therapeutic effect is found in all types of kriyakalpa. It is up to the science to correlate the observations with their scientific explanation. Here in present review article, it is tried to correlate the Ayurvedic ocular therapeutic i.e. kriyakalpa (Anjana) on the basis of modern basic principles of Ocular pharmacology. Various drugs can be selected according to the stage and types of the disease and can be used in various Kriyakalpa procedures according to need. In the light of above fundamentals of modern pharmacology, all the Ayurvedic ocular therapeutic procedures are relevant as such. Today current methods of drug delivery exhibit specific problems that scientists are attempting to address. For example, many drugs’ potencies and therapeutic effects are limited or otherwise reduced because of the partial degradation that occurs before they reach a desired target in the body. If orally administered time-release medications deliver treatment continuously, rather than providing relief of symptoms and protection from adverse events solely when necessary. Present conventional system of medicine has topical and systemic administration of drugs to
the eye which are highly inefficient and there is a need for controlled, sustained release, particularly for conditions that affect the posterior segment. Various non implantable and implantable drug delivery devices have been developed which are far from satisfactory and result in more adverse effects which is driving scientists to research more and more into safe, effective drug delivery methods for all parts of the eyes.

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