



Effect of Homoeopathy in the treatment of Pterygium: A retrospective study

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Abstract:

Background & Aim: Pterygium is a fibrovascular growth of conjunctiva over cornea and common in tropical areas. So, chronic exposure to UV radiation is considered as a major environmental risk factor. Treatment in modern medicine is mainly surgical but has chances of recurrence. Homoeopathy mentions medicines for pterygium but no published study is available. This retrospective study was done with an aim to evaluate the effect of homoeopathy in pterygium.

Methods: Total 27 cases of pterygium enrolled during the year 1997 - 2005 in institute's OPD were studied retrospectively. Homoeopathic medicines prescribed were *Argentum nitricum*, *Natrum muriaticum*, *Natrum sulphuricum*, *Zincum metallicum* in 30C potency on the basis of signs and symptoms of pterygium. They were used in HS dose for the duration ranging from 3 to 24 months depending on response to medicines in patients. Changes in symptomatology, thickness and status of pterygium head were outcome measures.

Results: Out of 27 subjects, 17 (63%) were benefited (reduction of symptoms, thickness and head of pterygium) by medicines, while in 10 there was only a symptomatic relief. *Zincum metallicum* showed maximum benefit of 75% followed by *Argentum nitricum* 67% and *Natrum sulphuricum* 60%.

Conclusion: Systemic homoeopathic medicines help to reduce symptoms and thickness of pterygium and arrest its growth.

Keywords: *Argentum nitricum*, Homoeopathy, *Natrum sulphuricum*, Pterygium, *Zincum metallicum*.

Introduction

Pterygium is a degenerative condition of subconjunctival tissue which proliferates as vascularised granulation tissue to invade the cornea, destroying superficial layers of stroma and Bowman's membrane, the whole being covered by conjunctival epithelium. [1] Histologically there is an elastotic degeneration of the subepithelial tissue caused by breakdown of collagen and fibrovascular proliferation. [2] It is usually located horizontally in interpalpebral fissure and common on nasal side of the cornea. In its early stage it is thick and vascular, becomes thin and pale when it ceases to grow but never disappears. [1] Patients often report redness, foreign body sensation, itching, burning, watering of eyes and if symptomless it causes a cosmetic disturbance. Vision gets impaired if it progresses to involve pupillary area of the cornea. Pterygium affects 0.3-29% of the population worldwide and common in tropical countries especially in those individuals having outdoor activity in dry, sandy and sunny climates. Although the exact aetiopathogenesis of pterygium is not well understood, prolonged exposure to ultraviolet B radiation is considered to be a principal environmental factor. [3] Coroneo *et al* has shown a

possible impact of scattered UV light that could cause death of the corneal epithelial stem cells on the nasal limbus for the development of pterygium. [4, 5] Dryness of eye was observed in pterygium in some studies. [6, 7] and many authors hypothesize that an abnormal tear function is a risk factor for diseases resulting from ultraviolet exposure. Recent evidence suggests that pterygium is a proliferative lesion rather than degenerative condition. Management of pterygium in its early stage is a conservative approach of treatment by use of proper protective glasses and local lubricating medication. Modern medicine Doxycycline has been used in several animal models of neovascularization or tumorigenesis with very promising results. Oral use of Doxycycline in animal model has shown reduction of pterygium. So a randomized, controlled clinical trial of oral Doxycycline in 49 subjects suffering from primary pterygium was carried and has shown reduction of lesion size especially in older age group and in Caucasian race. [8] However few patients experience its systemic side effects and the treatment period was of a short duration of 30 days. Surgical line of treatment in pterygium is usually considered, if it progresses towards the pupillary area however a post-operative recurrences with more aggressive behaviour is a common problem.



In homoeopathy different medicines were mentioned under the heading of pterygium and for different symptoms associated with pterygium. Gradation of medicine done through repertorisation by taking into account above rubrics and with the help of a homoeopathic software, HOMPATh Vital[®] and following medicines were found to have higher number of marks in reportorial totality.

Aconite, Alumina, Apis mellifica, Argentum nitricum, Arsenicum album, Belladonna, Calcarea carb, Euphrasia, Lycopodium, Natrum sulphuricum, Pulsatilla, Sulphur, Zincum metallicum.

Internet search was done to find out case studies done so far on pterygium. The most authentic record is from a case report of Dr. Carol Dunham, who cured pterygium by a single medicine *Zincum metallicum* 200C.^[9] While Dr. Diwan Harish Chand has mentioned in his article use of *Calcarea picrata* for the treatment of pterygium.^[10] However no published clinical studies were done so far in homoeopathy for the treatment of pterygium. So this observational study was carried out with an aim to evaluate the effect of homoeopathic medicines in patients suffering from pterygium.

Material and Methods

Design: It was a retrospective observational study done in patients suffering from pterygium from the record of

institute's Out-patient Department who were registered during the period November 1997 to August 2005.

Population: Subjects included were in the age group between 23 to 64 years irrespective of gender, race and socio-economic status. Subjects living in urban as well as rural area with past history of pterygium surgery and family history of pterygium were included.

Subjects excluded were those suffering from systemic diseases such as diabetes, hypertension and asthma, any ocular disease other than pterygium, those who had less than 3 months of follow up.

Intervention: Medicines were selected on the basis of signs and symptoms of pterygium and physical general symptoms in each case. Homoeopathic medicines *Argentum nitricum, Natrum muriaticum, Natrum sulphuricum, Zincum metallicum* were prescribed. Refer to Table 1 for indication of medicines prescribed. They were given in 30C potency in a BD dose for initial 3 weeks in order to reduce inflammatory condition of pterygium and thereafter in HS dose. A gap of one week was advised after every 3 weeks of medication. An intercurrent medicine, *Sulphur* in 200C or 1M potency was prescribed if patient had less favourable response to medicine. Treatment duration ranged from 3 to 24 months depending on medicine response with average of 9.37 ± 5.78 months. All subjects were advised to use glasses while going outside but no changes in the diet was suggested.

Table 1: Medicines prescribed with their indications

Medicine and potency	Indications for prescription
<i>Natrum sulphuricum</i> 30C	Hot patients, allergy to artificial ear rings, warts over face or neck, multiple moles on face or arms, involvement in indoor activity. Sensation of dryness, stickiness, burning pain in the eyes with itching and photophobia.
<i>Zincum metallicum</i> 30C	Pterygium extending from inner canthus which is thick and vascular especially involving pupillary area. Dryness of eyes with positive Schimer's test, foreign body sensation and photophobia. Pterygium associated with outdoor activity.
<i>Argentum nitricum</i> 30C	Pink or vascular pterygium extending from inner canthus. Sensation of heat in eyes better by cold application.
<i>Natrum muriaticum</i> 30C	Face oily, associated with dandruff over scalp and blepharitis with excess meibomian gland secretion. Redness, burning pain and watering of eyes exposed to atmosphere.
<i>Sulphur</i> 200 / 1 M	Hot patients. Dryness of skin, palms warm and dry, piles bleeding, lips red, delay in wound healing. Family history of pterygium.

Outcome assessment

Patients were called after every one month for follow up to collect medicine and changes in their signs and symptoms were recorded. Patient's symptoms included redness of eyes after going outside, foreign body sensation, sticky discharge, glaring of light, lacrymation, burning and itching of eyes. To assess the response or status of disease, ocular photography was done with the help of a digital camera attached to a slit lamp biomicroscope at the time of registration and after every 3 to 4 months till the patient continued the treatment. Signs recorded were vascularity, thickness and progression of head of pterygium. Changes in the signs and symptoms were categorised into grades as marked improvement, moderated improvement, mild improvement and no improvement. Parameters used for assessment of results were shown in table 2. Subjects with marked and moderate improvement were considered as benefited by medicines. Out of 27 subjects in 16, Schirmer's test was done at baseline to determine the quantity of tear formation. Whatmann filter paper no. 41 was placed in lower fornix of conjunctiva and its wetting was measured in mm after 5 minutes. Wetting of a strip by more than 10 mm is considered as normal.

Table 2: Parameters adopted for assessment of response to treatment

Grade of Improvement	Signs and Symptoms of Pterygium
Marked Improvement	<ul style="list-style-type: none"> Reduction of all symptoms Reduction in thickness of pterygium Retraction of head of pterygium
Moderate improvement	<ul style="list-style-type: none"> Reduction of all symptoms Reduction in thickness of pterygium No retraction of head of pterygium
Mild improvement	<ul style="list-style-type: none"> Only reduction of symptoms but no change in thickness or head of pterygium
No improvement	<ul style="list-style-type: none"> No change in signs and symptoms

Results

Total 36 cases of pterygium were screened, out of which 5 were excluded due to their treatment for associated

ocular and systemic disease. While 4 subjects were dropped as they had < 3 months of follow-up so ocular photograph during follow-up visit was not available to see the response of treatment. [Figure 1]

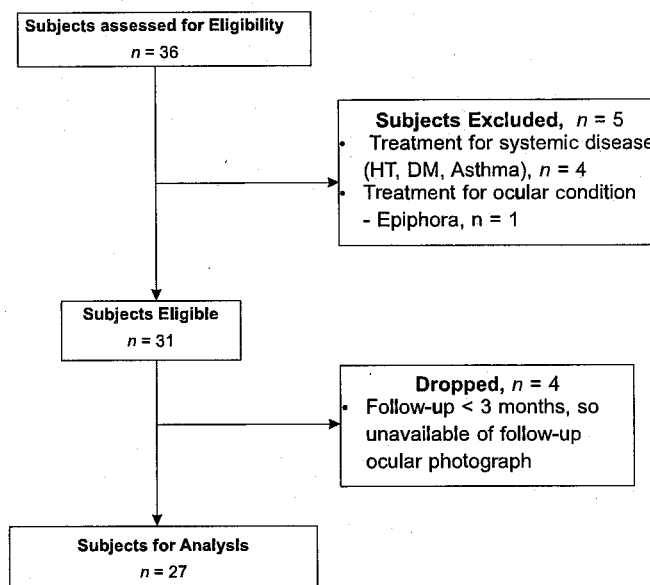


Figure 1

So total 27 subjects were considered for analysis of which 15 (56%) were males and 12 (44%) females. Average age at the time of enrolment was 41.93 ± 10.20 years and the incidence of pterygium was found to be maximum in the age group of 40 to 49 years (37%) and minimum in the age group of 20 to 29 years (15%) [Table 3].

Table 3: Age and gender distribution of study participants

Age (Yrs.)	Total (%)	Males (%)	Females (%)
20 to 29	4 (15)	4 (100)	-
30 to 39	7 (26)	4 (57)	3 (43)
40 to 49	10 (37)	4 (40)	6 (60)
50 to 64	6 (22)	3 (50)	3 (50)
Total	27 (100)	15 (56)	12 (44)

When type of work was assessed, 8 (30%) subjects were involved in outdoor activity, while 19 (70%) were involved in indoor work. When their living area was concerned, 11 (41%) subjects were living in rural area, while 16 (59%) in urban area. Subjects who had undergone pterygium surgery in past were 4 and those having a family history of pterygium were only 2. Average of duration of disease was 39.63 ± 30.69 months. Presenting symptoms of pterygium were redness of eyes after exposure to atmosphere noticed in all subjects, while foreign body sensation



in 13, sticky discharge and itching in 5 each and photophobia in 4 subjects, burning and watery eyes in 2 subjects each. Involvement of pterygium in both eyes was noticed in 6 subjects while involvement of only left eye in 17 and only in right eye in 10 subjects. The Schirmer's test had shown dryness of eyes in 12 (75%) subjects out of 16. General examination had shown that 11 subjects had warts either on their face or neck and 5 subjects had dryness of skin.

Homoeopathic *Natrum sulphuricum* 30C was used in 15 subjects. *Zincum metallicum* 30C in 9 subjects, while *Argentum Nitricum* 30C was used in 3 and *Natrum muriaticum* 30C was used in 1 subject. Intercurrent homoeopathic *Sulphur* 200C or 1M was used in 8 subjects. The average follow-up period of the whole study was 9.37 ± 5.78 months. Medicines prescribed with their indications are mentioned in table 1.

Duration of medication and its response was assessed and it was observed that subjects taking medicines for ≥ 6 months were benefitted [Table 4].

Table 4. Response according to duration of treatment

Duration of treatment (months)	No. of patients	Response			
		Marked	Moderate	Mild	No change
0 to < 6	6	--	1	5	--
6 to < 12	15	4	6	5	--
12 to 24	6	4	2	--	--

Table 5. Assessment of results and medicines prescribed

Name of Medicines and potency	No. of patients prescribed	Improvement Status			
		Marked	Moderate	Mild	No change
<i>Natrum sulphuricum</i> 30C	15	3	6	6	-
<i>Zincum metallicum</i> 30C	8	3	3	2	-
<i>Argentum nitricum</i> 30C	3	2	-	1	-
<i>Natrum muriaticum</i> 30C	1	-	-	1	-
Total	27 (100%)	8 (30%)	9 (33%)	10 (37%)	-

Overall improvement is concerned, out of 27 subjects 8 (30%) showed marked improvement, while 9 (33%) moderate improvement. So 63% subjects were benefited by medicine. Mild improvement was observed in 10 (37%) subjects.

Natrum sulphuricum 30C was used in 15 subjects of which 9 (60%) were benefited. *Zincum metallicum* 30C was used in 8 subjects of which 6 (75%) were benefited; *Argentum nitricum* 30C was used in 3 out of which 2 (67%) were benefited.

Natrum muriaticum 30C was used in 1 subject giving a symptomatic relief [Table 5].

Beneficial effect of medicines (marked and moderate improvement) was observed particularly in those subjects, who were of older age group with an average age of $43.59 (\pm 10.43)$ years as compared to $39.10 (\pm 9.65)$ years who were not benefitted.

Average treatment duration to get beneficial effect of medicines was $11.47 (\pm 6.20)$ months, while those who were not benefitted took treatment for the average duration of $5.80 (\pm 2.39)$ months.

Discussion

Key findings

Systemic use of homoeopathic medicines has shown a beneficial effect in 63% cases by reduction of thickness and retraction of head of pterygium along with relief of all its symptoms. Beneficial effect was observed especially in those subjects who were of older age group and took medicines for more than 6 months. Use of *Zincum metallicum* 30C gave



more beneficial effect of 75% as compared to other medicines.

Mechanism of action

An interesting fact noticed in this study was majority of subjects (70%) were involved in indoor activity while dryness of eyes was observed in majority (75%) of subjects. This shows that probably it is an internal ocular dryness which makes an individual prone for development of pterygium when gets exposed to dry and dusty environment. *Zincum metallicum* is a major antipsoric drug and has main action on dryness of eyes as mentioned in homoeopathic literature. So probably by reducing dryness of eyes it has taken care of all symptoms of pterygium even after exposure to sunlight and thereby achieved reduction in thickness of pterygium along with retraction of its head. While *Natrum sulphuricum* being a major antisycotic drug has taken care of proliferative pathology in pterygium and helped to reduced thickness of pterygium along with retraction of its head. So in short these medicines have taken care of an aetiopathology of pterygium.

Comments on results

Subjects of younger age group and those involved in more outdoor activity were less benefitted by medicines as these subjects can't avoid exposure to sunlight and dusty atmosphere due to their occupation. Similarly subjects who took medication for less than 6 months were less benefitted because pterygium is an end result of chronic exposure to sunlight, dry and dusty atmosphere. Similarly

it is associated with pathological changes in the conjunctiva and limbus, so to get recovery from such a chronic condition a longer duration of treatment is required.

In this study 7 (25%) subjects had shown less compliance by follow-up of less than 6 months. A probable reason is pterygium is not a life threatening disease, it is often viewed as a cosmetic problem and patients take this condition seriously only when their vision is affected as pterygium involves the pupillary area of the cornea.

Regression of head of pterygium was observed in limited subjects in this study. According to recent studies, etiopathogenesis of pterygium is associated with focal limbal stem cell damage caused by chronic UV radiation resulting in conjunctivalisation of cornea. So I think an additional calcium supplementation with a biochemic medicine *Calcarea phosphoricum* may help in regeneration of damage limbal stem cell and thereby can help in regression of pterygium head.

Therapy

Even though *Natrum sulphuricum* has not been mentioned in literature for pterygium it was used in this study because it is an antisycotic medicine and hyperplasia is a main pathology in pterygium. It covers all symptoms associated with pterygium as can be noticed from Figure 2.

It was given in those subjects who were involved in indoor work and had warts or a family history of warts. It was used in lower potency and given in

Repertorisation: Normal

Remedy Name	Sulph	Zinc	Arg-n	Euphr	Calc	Nat-s	Lyc	Asa	Am	Puls	Acon	Apis	Bell
Totality	18	15	13	13	12	11	11	11	10	10	10	10	10
Symptom Covered	6	7	5	5	5	6	5	4	5	5	4	4	4
[KT] [Eye]Pterygium:	2	2	2	2	2			2					
[KT] [Eye]Redness:	3	1	3	3	2	2	2	3	1	1	3	3	3
[KT] [Eye]Pain: Burning, smarting, biting:	2	3				2							
[KT] [Eye]Inflammation: Conjunctiva:	3	2	3	3	3	2	2	3	3	2	3	3	3
[KT] [Eye]Photophobia:	3	2	3	3	3	3	3	3	2	2	3	2	3
[KT] [Eye]Itching:	3	2	2	2	2	1	2		2	3	1	2	1
[KT] [Eye]Dryness: Evening:		3				1	2		2	2			

Figure 2



repetition as the prescription was based on pathology involved.

Zincum metallicum has been mentioned as one of the important medicines for pterygium in homoeopathic literature. It an antipsoric medicine and acts on inflammatory condition of conjunctiva as well as has its main action on dryness of eyes. So it was used particularly in those subjects who were more involved in outdoor activity and had dryness of eyes which is confirmed by Schimer's test.

Argentum nitricum was used particularly in those cases in which pterygium were thick and vascular and this appearance usually develops in its recurrence after surgery.

Natrum muriaticum was used in patient on the basis of symptoms of dandruff over the scalp, oily face and excess secretions of Meibomian gland of lids but has no beneficial effect on pterygium except reduction in its symptoms. The probable reason being it's less effect on dryness of eye as mentioned in literature.

Strength and Limitations

Study of homoeopathy on pterygium with a photographic documentation has not been done up till now. In this study an individualistic approach of treatment was used by taking into account signs and symptoms of pterygium and physical general symptoms in each case which comply with principle of homoeopathy.

Limitations of this study were less sample size and having no control group. So a controlled clinical study in large number of subjects with objective investigatory methods such as Schimer's test, keratometry, quantitative assessment of size of pterygium etc. is required in future to validate the results.

Conclusion

Systemic use of homoeopathic medicines help in reducing symptoms of pterygium as well as its thickness without use of any local medication and thus helps to avoid surgical intervention and its associated complications.

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