

## Current management of ocular allergy by ophthalmologists in Kenya

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### ABSTRACT

**Background:** Currently, the management of Ocular Allergy (OA) in Kenya is not standardised. The development and implementation of Standard Treatment Guidelines (STGs) is a necessary task in a health care system where numerous treatments may be available.

**Objectives:** To describe the approach to management of ocular allergy in Kenya.

**Methods:** The study was a descriptive (Knowledge, Attitude and Practice) cross-sectional study carried out among practising ophthalmologists in Kenya from 1<sup>st</sup> December 2012 to 31<sup>st</sup> May 2013. Data was collected using self-administered questionnaires and qualitative methods including focus group discussions and key informant interviews were used for triangulation and to get detailed information on the attitudes and practices of the ophthalmologists regarding OA.

**Results:** A total of 58 ophthalmologists were included in the study (69% response rate). All the participants reported diagnosing OA based on clinical findings. The majority, >70%, of the ophthalmologists considered symptom severity, availability of drugs, and treatment tolerability as important factors in treatment selection. Topical antihistamines and mast cell stabilisers were used by 62% and 57% of the ophthalmologists respectively as the first line treatment. Majority of the participants indicated the use of topical immunomodulators/systemic steroids (75.9%) and periocular steroids (72.4%) only for severe cases though during the discussions, the use of topical immunomodulators and systemic corticosteroids was not mentioned. The rational use of topical steroids was advised by all the discussion participants so as to avoid their overuse. Non-pharmacological treatment including allergen avoidance, cold compresses, and artificial tears were mentioned as being important for providing short-term relief for allergy symptoms. The use of tear supplements in all grades of severity to provide ocular lubrication and also for dilution of allergens was mentioned by the majority of the participants in the discussions. Surgical intervention was suggested only in the management of complications of OA or conditions associated with OA. There is no national standard treatment guideline for the management of OA. Counselling was seen to form a major part of the management of a patient with OA though it is inadequate in our setting.

**Conclusions:** There is no standard treatment guideline followed in the management of ocular allergy. There is a need to come up with a national guideline so as to harmonise the diagnosis, grading and treatment of ocular allergy. Patient counselling needs to be emphasized so as to improve compliance to treatment and follow up appointments.

**Key words:** Allergy treatment, Allergic conjunctivitis, Ocular allergy, Vernal keratoconjunctivitis

### INTRODUCTION

Ocular Allergy (OA) affects 20% of the population worldwide and is usually associated with a type I hypersensitivity reaction with the spectrum of clinical expression varying according to individual cases<sup>1-3</sup>. Recent studies according to Rosario *et al.*<sup>4</sup> imply rates as high as 40%. It is commonly encountered in clinical practice because the external eye is exposed to a host of environmental, cosmetic, and pharmacologic antigens<sup>5</sup>. In general, allergic conditions involve mast cell degranulation that leads to release of inflammatory mediators and activation of enzymatic cascades generating pro-inflammatory mediators. In chronic

ocular inflammatory disorders associated with mast cell activation such as Vernal Keratoconjunctivitis (VKC) and Atopic Keratoconjunctivitis (AKC) constant inflammatory response is observed due to the predominance of inflammatory mediators such as eosinophils and Th2-generated cytokines<sup>6</sup>.

The diagnosis of ocular allergy is mainly clinical, and the medical treatment is based on these clinical findings, which are usually varied<sup>7, 8</sup>. The goals of therapy in the treatment of OA should include not only the control of signs and symptoms, but also improvement of the ocular health of patients with allergies<sup>1, 9-10</sup>. Tuft *et al*<sup>9</sup> found that the management of VKC in tropical

countries is controversial and is often determined by availability of medications, safety, and cost. Currently in Kenya, the management of OA is not standardised and there appears to be several approaches to its management depending on the understanding of severity. Advances in the understanding of ocular allergic disorder mechanisms have provided a foundation for more rational guidelines of treatment of these diseases<sup>9</sup>. The development and implementation of Standard Treatment Guidelines (STGs) is a necessary task in a health care system where numerous treatments may be available. Casual observation, as well as more systematic study of prescribing practices, frequently reveals a pattern of tremendous diversity among prescribers in the treatment of even the most common conditions<sup>12</sup>. The purpose of this study was to describe the approach to treatment of ocular allergy, to determine the factors affecting the choice of treatment and those used to evaluate response to treatment. It is anticipated that the findings of this study will create awareness on the need to generate a standardised protocol and will also help in the establishment of set guidelines in Kenya on the management of OA.

## MATERIALS AND METHODS

*Participants:* A descriptive (KAP) study was employed, as it would adequately address the explorative nature of the objectives of this study. It was carried out during the period of 1<sup>st</sup> December 2012 to 31<sup>st</sup> May 2013. The study population included all qualified ophthalmologists practising in Kenya covering public, private and faith based hospitals/clinics who gave informed consent to participate in the study.

Since there were no previous studies on prevalence of grading of OA in the region, the maximum sample size was determined using the Fishers *et al* 2003 method with a prevalence assumption of 50% grading by ophthalmologists'. There was need to correct the sample size for finite population and therefore a minimum of 53 ophthalmologists were needed. Ethical approval was sought from the Kenyatta National Hospital (KNH)/University of Nairobi (UoN) Ethics and Research Committee.

*Data collection:* Both self-administered questionnaires and focus group discussions/key informant interview were used for data collection. The self-administered questionnaires were generated on Google docs as an online survey and served as both a qualitative/quantitative tool.

Moderated Focus Group Discussions (FGD) and a group key informant interview were used to complement data collected from the questionnaires especially in the

attitude section and this was exclusively qualitative. They were used to get more in-depth information from a smaller group of people. This helped in understanding the context behind the answers given in the written survey; explore topics in more detail. A minimum of 6 participants were expected for each FGD as the recommended size of a group is of 6 – 10 people<sup>7</sup>. The FGDs were held in the month of January 2013 at the UoN (6 participants) and the Kikuyu Eye Unit (7 participants). The group key informant interview was held at KNH (2 participants). Majority of the FGD and group key informant interview participants also practice in the private sector, representing many views of the ophthalmologists in that area.

*Statistical analysis:* Quantitative data analysis was undertaken using Stata version 11.0. Qualitative data was imported into NVivo 10 software for coding and data analysed through content analysis.

## RESULTS

The relevant quotes from the open-ended questions in the questionnaire and the discussions are presented in the results section in italicized font.

*Demographics:* There were a total of 89 ophthalmologists in the country with 5 not fitting the inclusion criteria. The online survey had a 69% response rate with 58 responses received out of the 84 ophthalmologists selected to participate in the study. Therefore a total of 58 ophthalmologists were included in the study. The median age was 39 (range: 32 - 66 years) and 41/58 were male. The majority (65.5%) practised in government hospitals. 24.1% of the ophthalmologists had practised for less than two years while only 5 had practised for more than 20 years.

*Treatment:* The majority, >70%, of ophthalmologists considered symptom severity, availability of drugs, and treatment tolerability as extremely important and very important factors in the selection of treatment offered to the patient. In terms of treatment category, over half of the ophthalmologists considered topical antihistamines and mast cell stabilizers (62.1% and 56.9% respectively) as first line treatment (Table 2). In contrast, majority (69.0%) of the ophthalmologists did not use topical vasoconstrictors for the treatment of ocular allergies.

*Evaluating response to treatment:* All the respondents, 58/58 (100%) reported assessing response to treatment based on clinical assessment.

*'Improvement in symptoms and signs (Regression)'*  
'...report from the patient that he or she feels better clinical improvement i.e. less redness, less papillae etc.'

The key areas that arose from the discussions are summarized below.

### Focus group discussions and Key Informant interview results

The key areas that arose from the discussions are summarized below. Tables 3-5 highlights the treatment and follow-up options suggested per grade.

#### Patient follow up

*'...you need to educate the patient about their illness, and they need to know how serious it is so that they can take their follow up seriously because that very often is the problem.'*

Most of the respondents linked the follow up of patients to the severity of the patients' signs and symptoms. Few of the participants based their follow up on whether the patient has a blinding or non-blinding condition.

*'For mild, I don't follow up, I just say PRN when you come back. For moderate, because of recurrence, I tell them I will not give them a date but once they finish the medication and you feel quiet, just stay on if it's not disturbing you. But for severe cases I see them twice weekly because I have put them on steroids or a month later depending on the severity. Moderate is PRN and they should come as soon as they develop symptoms.'*

For minority of the participants, follow up would be determined by the patients' response to the medication. This would be dependent on *'...whether they are improving or not because...if they are improving you take longer to follow them up. But if they are not improving you see them often so that you are changing the medication they are using and intervening so that you don't get to complications.'*

#### Surgical intervention

Regarding the surgical intervention, all participants in the discussions suggested its use in complications of OA and conditions associated with OA. During the discussions, the following were the procedures mentioned: supratarsal steroid injections for refractory cases with severe allergies e.g. those with cobble stone papillae; debridement and superficial keratectomy for patients with shield ulcers and chronic keratitis arising from the allergy; surgical removal of giant papillae and keratoplasty for end-stage keratoconus.

#### Counselling

*'Counselling is more important than giving the drugs.'* There was a strong feeling amongst all of the groups that counselling forms a major part of the management of a patient with OA as represented by the statement below.

*'I think it's extremely important because in my experience that is what they have been lacking; that this treatment is long term, it may be intermittent but it's a long term treatment, it's not a one off...counselling them about the causative factors because most of the time this disease is environmental...The other thing is that patients go hoping from one clinical centre to the other and just going round in circles, so when you counsel them they have faith in you and stick to one person and they are more compliant to the treatment prescribed.'*

The general feeling was that the counselling given is inadequate, possibly because of the busy set-ups, therefore not giving the patient a chance to internalize what is being said. *'...patients' need more time to hear more and ask more questions which I think most of us are unfortunately not able to give.'* A suggestion given to counter this was the establishment of health talks, which would give the patients more time to get the necessary information and ask questions.

The participants' further pointed out that counselling was especially important for mothers/caregivers taking care of their children so that they may be more observant so as to notice symptoms. *'Sometimes the child just itches and that is all the mother sees, the mother doesn't know about vision and things like that, so it [counselling] is a major part of management.'* Another participant also mentioned a sad experience he had with three children going blind in high school due to VKC and he uses this as an example to emphasize to patients on the importance of follow up especially in the blinding conditions.

During the discussions the following were mentioned as important points during counselling:

- (i) Tell the patient what ocular allergy is.
- (ii) Patients with blinding disease should be aware that it is blinding and the importance of honouring their appointments.
- (iii) Make the patient aware of recurrences and to expect them.
- (iv) Supportive management:
  - Advice on hand washing after playing outside.
  - Cold compress/cold water technique:
    - Avoid rubbing the eyes, just press with a cold compress.
    - Apply plain cold water.
  - Advise the patient not to have things like carpets, pets, dusting under the bed, on the curtain boxes.
  - Leave rooms open to air and dry for good aeration to avoid mould. Counsel matrons in boarding schools on the same.

It was also felt that patient education on their condition is wanting unlike in other general diseases such as asthma. The reason given was because *'when you see*

*the patients who have other general body allergies... you find that the paediatrician or whoever is seeing them for the general things has explained to them and they understand about the disease and the management; when they should have the inhalers and all that but you find that the education on how to manage the [ocular] allergy lacks in patients.'*

Majority of the participants mentioned that counselling is also important so as to avoid patients moving from one doctor to another hoping to be cured when what they are experiencing are recurrences which they had not been counselled on.

*'So if you do not take that extra time to counsel the patient, they will keep running around and at the end of the day they will end up at the pharmacy with self-medication and we all know the famous Probeta-N (Neomycin:0.5%w/v, Betamethasone:0.1%w/v).'*

### **Standard management guidelines and challenges in developing guidelines**

*'...having protocols for different allergies, for management of different severity is important because one, allergies are very prevalent and they are being managed almost by everybody, at all levels of health care.'*

Most participants felt it was worth investing time in coming up with treatment protocols but it would be pertinent to take into account that the private set-up is very different from the public set-up in terms of the resources available.

*'Unlike the private where they can afford or are under insurance the topical anti-histamine would not be an issue for them, so it's good, academically and theoretically to have a protocol but we have to look at the different institutions in the different set ups in terms of accessibility, affordability and availability of these medications... are these medicines going to be available in the government set ups because this is where most of the patients are being seen.'*

Majority of the participants were of the opinion that coming up with standard guidelines would be challenging for various reasons, that it may be very subjective and that there is also the need to change the perception that allergic conjunctivitis is not a major disease. This is because at times a patient may have a 'severe form of allergy and people are told that it's "just an allergy" so they think it will come and go... I think that such issues should be addressed and raise awareness because most of those patients will not be seen by us they will be seen by the junior cadres especially the clinical officers. And I wonder if they have that knowledge especially of the classification and the treatment options and availability of medication.'

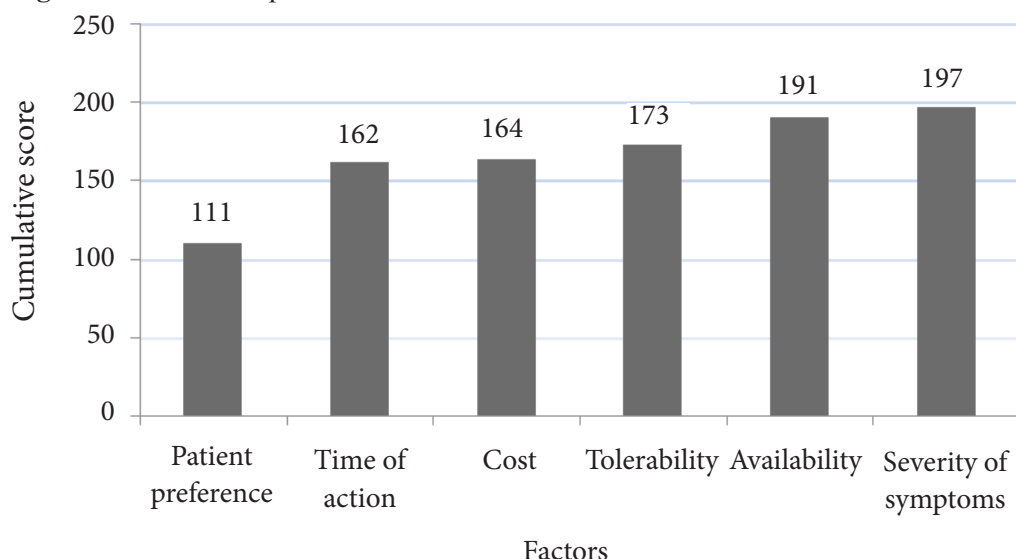
Coming up with standard guidelines for the management of OA will help in creating awareness on how to treat the different grades of severity of OA. '... But without a protocol people might forget what to do, always referring small things to the eye clinic for treatment; minor allergies and there are even safe medicines which can even be used by the nurses at the community level.'

It was also agreed by most of the participants that with the introduction of standard guidelines and with practitioners prescribing medication according to the guidelines, the government will buy the medication so as to meet the generated need. '... if you don't have a protocol, they [medication] will not be bought because it is from the guidelines of the Ministry of Health, that they make the essential drugs list, so it will not be an essential drug until we prove that it can be used. The only way to create demand for that is to teach the people who treat that and to remind them, to give them guidelines and protocols which they can refer and treat.'

One of the institutions, Kikuyu eye unit, was in the process of coming up with a treatment guideline especially to promote rational use of steroids.

**Table 1:** Level of importance of factors in treatment selection (n=58)

	Not important	Slightly important	Moderately important	Very important	Extremely important
Goals of treatment					
Severity of symptoms	0	0	5 (8.6)	25 (43.1)	28 (48.3)
Tolerability	0	3 (5.2)	9 (15.5)	32 (55.2)	14 (24.1)
Patient preference	1 (1.7)	18 (31.0)	25 (43.1)	13 (22.4)	1 (1.7)
Time of action	1 (1.7)	4 (6.9)	19 (32.8)	16 (27.6)	18 (31.0)
Cost of drugs	2 (3.5)	2 (3.5)	15 (25.9)	24 (41.4)	15 (25.9)
Availability of drugs	0	2 (3.5)	5 (8.6)	25 (43.1)	26 (44.8)

**Figure 1:** Level of importance of factors in the selection of treatment offered**Table 2:** Mode of treatment and category used (n=58)

Treatment options	1 <sup>st</sup> line n (%)	2 <sup>nd</sup> line n (%)	3 <sup>rd</sup> line n (%)	Not used n (%)
Artificial tears	28 (48.3)	10 (17.2)	12 (26.7)	8 (13.8)
Mast cell stabilizers	33 (56.9)	21 (36.2)	3 (5.2)	1 (1.7)
Topical antihistamines	36 (62.1)	11 (19.0)	4 (6.9)	7 (12.1)
Multiple action drugs (antihistamine + mast cell stabilizer)	24 (41.4)	25 (43.1)	4 (6.9)	5 (8.6)
Topical steroids	25 (43.1)	23 (39.7)	10 (17.2)	0
Topical vasoconstrictors	9 (15.2)	4 (6.9)	5 (8.6)	40 (69.0)
Topical NSAIDs	11 (19.0)	9 (15.5)	11 (19.0)	27 (46.6)
Immunomodulators/Systemic steroids	1 (1.7)	3 (3.5)	44 (75.9)	11 (19.0)
Oral antihistamines	10 (17.2)	23 (39.7)	21 (36.2)	4 (6.9)
Periocular steroids	0	4 (6.9)	42 (72.4)	12 (20.7)

**Table 3:** Mild ocular allergy

Treatment options	Follow-up options
- Mild anti-histamine and mild steroid	- PRN
- Mast cell stabilizers or artificial tears	- I don't follow up, I just say PRN when you come back.
- Oculast/one of the mast cell stabilizers or just tell them to wash their eyes with cold water (cold water technique)	
Short term anti-histamines + non-steroidal + a topical lubricant	
- Mast cell stabilizers only, if they complain of foreign body sensation... artificial tears	
- Very mild steroid like fluoromethalone or a combination of a mast cell stabilizer + an anti-histamine like Relostat or Patanol	

**Table 4:** Moderate ocular allergy

Treatment options	Follow-up options
<ul style="list-style-type: none"> <li>- Mast cell stabilizer, a steroid</li> <li>- Short course of steroid drops for a week or two and mast cell stabilizers</li> <li>- Course of steroids and long term mast cell stabilizers or other anti-inflammatories</li> <li>- Non-steroidals but for longer periods a monthly treatment of non-steroidal</li> <li>- Oral anti-histamines because of a lot of itching at night especially sub-consciously</li> <li>- Steroid ointment because it seems to clear the papillae faster and during the night, if you put a drop its out in the next two minutes so put the ointment at night</li> </ul>	<ul style="list-style-type: none"> <li>- Because of recurrence, I tell them I will not give them a date but once they finish the medication and you feel quiet, just stay on if it's not disturbing you, PRN</li> <li>- More regular</li> </ul>

**Table 5:** Severe ocular allergy

Treatment options	Follow-up options
<ul style="list-style-type: none"> <li>- Mast cell stabilizer, a steroid, artificial tears, <math>\pm</math>oral steroids</li> <li>- Generous with the steroids and sometimes I will give injectables if I feel the vision is threatened especially the ones with shield ulcers that are not healing, I might even take them to theatre for scraping</li> <li>- Course of steroids and long term mast cell stabilizers or other anti-inflammatories</li> <li>- Steroidal for two weeks and then 1 month for non-steroidal or anti-histamines</li> <li>- Combination of a mast cell stabilizer and an anti-histamine, artificial tears and some form of steroid, preferably in the ointment form as it will last longer.</li> <li>- Stronger steroid like predforte in addition to a mast cell stabilizer, preservative free like, allergocomod, treat them for a longer time</li> <li>- If they have papillae and any other complications like shield ulcers then I would opt to inject them with sub-tarsal long acting steroids like triamcinolone and depo-medrol.</li> <li>- Oral anti-histamines because of a lot of itching at night especially sub-consciously. Steroid ointment because it seems to clear the papillae faster and during the night, if you put a drop its out in the next two minutes so put the ointment at night.</li> <li>- Sometimes though rarely I might advise for supratarsal injections of steroids, for those who are very refractory</li> </ul>	<ul style="list-style-type: none"> <li>- Increase the frequency of the visits, after the first time I see them I will then see them again in maybe 2-3 weeks then after that if they are doing well I see them in a month then after depending on how they are doing I see them in 2-3 months.</li> <li>- Every month initially to see how they are doing and if they stabilize then every 2-3 months but initially at least every month.</li> <li>- Twice-weekly because I have put them on steroids or a month later depending on the severity</li> <li>- More regular</li> <li>- More frequently</li> </ul>

## DISCUSSION

The management of ocular allergies in developing countries is complicated by the high cost of drugs and limited drug options available especially in the peripheral hospitals. The majority, >70%, of ophthalmologists considered symptom severity, availability of drugs, and treatment tolerability as extremely important

factors in the selection of the treatment option. This was further emphasized in the discussions where the grade of severity and availability of drugs were seen as the key factors influencing treatment selection. This is similar to findings by Tuft *et al*<sup>9</sup> who stated that the management of VKC in tropical countries is controversial and is often determined by availability of medications, safety and cost.

Non-pharmacological treatment including allergen avoidance, cold compresses, and artificial tears were mentioned as being important for providing short-term relief for allergy symptoms. These non-specific measures were similar to those mentioned in other studies<sup>1,7,13</sup>. Tear supplements are used to dilute allergens and reverse tear film instability secondary to inflammation, and were mentioned by the majority in our study for use in all grades of severity.

The majority of panellists in the ocular allergy Latin American consensus answered that they always use topical lubricants (preferably preservative free) for treating OA indefinitely<sup>1</sup>.

In terms of treatment category, over half of the ophthalmologists considered topical antihistamines and mast cell stabilizers (62.1% and 56.9% respectively) as first line treatment. Mast cell stabilizers require a loading period of up to 2 weeks in order to achieve maximal efficacy, therefore participants in the discussions stressed on the importance of making patients aware of this and combining it with something to provide faster relief such as topical antihistamines which do not have a long duration of action or the use of mild topical steroids such as fluoromethalone during the two-week period. Dual action drugs were considered by majority of the respondents as first or second line medication (41.4% and 43.1% respectively). A review by del Cuvello *et al*<sup>2</sup> implied that topical antihistamines – preferably those with established dual action – are very effective in treating allergic conjunctivitis, and outperform other groups of drugs such as mast cell stabilizers or topical NSAIDs. Participants in the face to face discussion felt that because of their dual action they are more effective in comparison to the other groups.

In contrast, majority (69.0%) of the ophthalmologists did not use topical vasoconstrictors for the treatment of ocular allergies this may be because they are effective at reducing redness, but have no direct effect on the allergic response itself. Dos Santos *et al*<sup>1</sup> found that majority of panellists (80%) did not report topical vasoconstrictors for the treatment of ocular allergic patients. Topical antibiotics were mentioned for use in patients with complications such as corneal ulcers due to chronic self-medication with steroids or in cases of super-infection.

Topical ocular steroids are effective (probably the most effective of all options), but pose the important risk of frequent side effects (glaucoma, cataracts, corneal ulcers)<sup>2</sup>. Their rational use was recommended with the majority agreeing that mild topical steroids should be used in acute crises for short periods of time-less than 2 weeks, this was similar to the findings

by dos Santos *et al*<sup>1</sup> where panellists indicated the rational use of topical corticosteroids for treating some chronic cases and acute crises, considering a short time course of treatment and its ocular side effects. At the discussions, the use of steroid ointments' at night for a short duration was also recommended because it was thought to clear the papillae faster.

Majority of the participants (72.4%) indicated the use of periocular steroids only for severe cases where topical medication does not control symptoms or disease progression (refractory cases) and some suggested its use in patients with severe papillary reaction. It was important to note that during the discussions, the use of topical immunomodulators and systemic corticosteroids was mentioned by few participants for the treatment of OA despite the majority of the participants in the online survey indicating the use of topical immunomodulators/systemic steroids (75.9%) for severe cases. Topical immunomodulators such as Cyclosporin A have been shown to be of great benefit as steroid-sparing agents in chronic patients<sup>14</sup>.

Oral antihistamines (preferentially second generation drugs) can also play an important role, since they are of established efficacy and offer adequate treatment of the nasal symptoms that tend to accompany the ocular manifestations of allergic rhinoconjunctivitis. It was selected for use as a 2nd line measure by 39.7% of the respondents. Participants at the discussions recommended its use by patients with moderate and severe OA to relieve intense itching especially at night subconsciously and also for patients with rhinoconjunctivitis. Although the topical treatment of allergic conjunctivitis has been shown to improve the nasal symptoms of allergic rhinoconjunctivitis, systemic antihistamines are more potent in securing relief from symptoms of this kind but may also cause dry eye<sup>2</sup>.

Regarding surgical intervention, participants in the discussions suggested it to manage complications of OA and conditions associated with OA such as keratoconus. Cryoablation or surgical removal of refractory giant papillae with mucosal grafting was also mentioned. This is similar to the findings at the ocular allergy Latin American consensus where the panellists contraindicated use of surgery for any case of ocular allergy. However they suggested considering such treatment in extremely severe cases for treating corneal complications, such as persistent and unresponsive to conventional treatment keratitis and very recurrent shield ulcer<sup>1</sup>. The assessment of patient response to treatment was reported to be based on clinical assessment i.e. improvement in symptoms and signs (regression) and this was assessed during the

follow-up sessions. The frequency of patient follow up was linked to the severity of the patients' signs and symptoms, whether the patient has a blinding or non-blinding condition and/or the patients' response to the medication prescribed. This was similar to the AAO preferred practice guidelines which suggest that the frequency of follow-up visits is based on the severity of disease presentation, aetiology and treatment<sup>15</sup>. It was further stressed on the need for making patients with sight threatening OA (especially VKC) aware of the need to honour appointments so as to avoid the patient being lost to follow up and returning later with corneal complications. Despite agreeing on the importance of following up patients, the frequency of follow up suggested was unclear, with terms such as "more frequently" and "more often" used to denote follow-up of moderate and severe cases. There was a general agreement on the follow up of mild cases as being pro re nata (PRN). Involvement of low vision and outreach programmes were also suggested as a way of following up patients, especially those who were lost to follow-up and also as a way to reach potential allergy patients.

Counselling of patients with OA helps to provide effective management. This was stressed during the discussions as being more important than giving drugs as it would improve patient compliance to the use of medication and follow up. Topical steroids and steroid-antibiotics are easily available as over-the-counter drugs. As a result of their effectiveness in symptom relief, they tend to be abused/ overused by OA patients. They may also see it as a way of reducing their clinic visits and as a result cut down on cost. Counselling would reduce the cases of self-medication especially in the abuse of steroids leading to corneal thinning and other complications. Compliance with medication improves if patients are well informed<sup>16</sup>.

Establishment of health talks was also suggested as a forum for patients to ask questions that they might not get a chance to ask the clinician especially in busy set-ups. Distribution of take home leaflets with basic information on what ocular allergy is and non-specific measures for relief of symptoms to be issued to patients with OA during clinic visits was recommended. This would increase disease state awareness and may also make significant impressions on patients hopefully as a result improve the patients' compliance to treatment once they have a better understanding of their condition.

The ophthalmologists interviewed reported not having Standard Treatment Guidelines (STGs) and followed their knowledge base, training, and preconceived ideas on the treatment rationale for each patient with OA. The establishment of STGs was seen to be important and worth investing time in.

The guidelines would orientate the clinicians because there are numerous treatment options available for the treatment of OA and it would list the preferred pharmacological and non-pharmacological treatment options<sup>17</sup>. The participants also agreed that the guidelines would lead to provision of optimal care to the patients and to promoting therapeutic effective and economically efficient prescribing. A vacuum would also be created when the practitioners are aware of what to prescribe and therefore demonstrate a need for which the government would have to fill by supplying the medication. This is because the pharmaceutical supply in government hospitals is based on an essential drugs list, which would be derived from a standard treatment guideline.

The discussants also emphasized on the need to consider the prevailing medicine cost and affordability of the medication when coming up with guidelines because most patients are seen in the government institutions where some of the medication may not be available. Another benefit is that provision of standard treatment guidelines would also reduce the need for referral, as patients with OA are seen by almost everyone at all levels of healthcare and with STGs treatment of mild allergies will be clear therefore reducing the need for referral to the eye clinic, because even nurses at the community level will know how to manage it. The establishment of the STGs was thought to be challenging and this was similar to findings by dos Santos *et al*<sup>1</sup> who stated that the task of creating guidelines for OA showed to be very complex due to the need for a larger consensus including experts from different groups around the world on controversial topics especially an internationally acceptable classification and staging and a more rationale algorithm of treatment for this challenger group of diseases.

## CONCLUSIONS

Ocular allergy is a condition seen daily in the ophthalmology outpatient clinics and its diagnosis is based on clinical findings. The development of STGs would be beneficial to harmonise the diagnosis, grading and treatment of OA and doing so would promote effective therapeutic and economically efficient prescribing. The key factors affecting treatment selection include the severity of symptoms/signs and availability of drugs. The importance of counselling as the basis for management of patients with ocular allergies should be emphasized so as to improve compliance to treatment and follow up appointments. The assessment of response to treatment is based on clinical assessment and feedback from the patient.



## RECOMMENDATIONS

There is a need to come up with national guidelines for the management of OA as this study, as well as prior studies, have shown that it can greatly improve the services offered to patients with OA and reduce the need for referral of minor cases of OA, therefore promoting effective therapeutic and economically efficient prescribing. Counselling patient education should be more aggressive as it directly influences compliance to treatment and patient follow-up and it is the mainstay of management of patients with OA. A similar study to be done with Ophthalmic Clinical Officers (OCO's) as it would give a more complete picture of how OA is managed at the grass-root level, as they are the first line managers.

## LIMITATIONS

There was difficulty in ascertaining if the participants' email addresses were in use during the study period and this may have influenced the response rate. Being an online self administered online survey may have also influenced the response rate as there is a tendency of some individuals to respond to an invitation to participate in an online survey, while others ignore it, leading to a systematic bias. It was also difficult to assemble groups of ophthalmologists for the FGDs due to the nature of duties/busy schedules. It would have been better to carry out several FGD sessions with the same groups so as to make them more comprehensive but this was not possible due to time constraints.

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