Original Research Article

Demographic and clinical profile of vernal keratoconjunctivitis and testing of health related quality of life in a tertiary hospital in South India

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ABSTRACT

Background: Patient with vernal keratoconjunctivitis faces significant morbidity, which affects quality of life or; moreover, it can lead to vision threatening, corneal complication in severe cases and chronic cases coupled with potential iatrogenic side effects. Aim of this study to assess the demography, clinical features and quality of life of patients with vernal keratoconjunctivitis in a centre in South India.

Methods: General objective is to access the health related-quality of life and demographic study of VKC patients in a tertiary eye care hospital in south India. KINDL questionnaire with 30 questions is used for 30 paediatric patients. Percentage analysis for clinical assessment and interpretation method for questionnaire was used as statistical method.

Results: In clinical assessment papillary reaction (96.66%), giant papillae (83.34%), Horner Trantas dots (20%), shield ulcer (13.35%), corneal erosions (43.33%), conjunctival congestion (76.68%). In case of vision 36.66% had normal vision, 56.67% had mild vision loss, 6.68% with moderate vision loss.

Conclusions: VKC affects the health related quality of life of the patients significantly. The management of VKC should consider this aspect of health related quality of life, in addition to clinical parameters. From the assessment of KINDL questionnaire 30 samples 18 patients had high and 12 patients had average quality of life.

Keywords: Giant papillae, Horner Trantas dots, KINDL, Papillary, Shield ulcer, Vernal keratoconjunctivitis

INTRODUCTION

Vernal keratoconjunctivitis is a chronic, bilateral, asymmetrical, seasonally exacerbated allergic inflammation of the conjunctiva.1 Also known as spring catarrh.2 It is an allergic disease affecting the eyes of young children, especially boys. It usually begins before the age of 10 years and often disappears at puberty, though it may change at time into another allergic eye disease known as atopic keratoconjunctivitis.3 Major complaint of children with VKC are itchy eyes, watering and ropy discharge.3,4

Their vision may be blurred and the may be excessively sensitive to light. One characteristic symptom is that they may have greater difficulty in opening their eyes and distracting effect of the condition may cause severe morbidity, reduction in outdoor activity and may lead to absenteeism of school.3,5

All these signs are often asymmetrical in both the eyes.6,7 These patients may also have keratoconus and /or atopic cataract. The health-related quality of life of patients with VKC can be affected by intense itching and may causes dryness sensation, vision fatigue and even reading difficulties.4,8

This can lead to poor scholastic achievements and absenteeism at schools. Different questionnaires have
been developed to explore different aspects of the disease.\(^9\)

**METHODS**

In this study 30 patients with VKC, without any other systemic or ocular conditions were included. It was conducted from August 2015 to August 2016 at little flower hospital Angamaly Kerala. The age of the children we took in this study ranged from 5 to 21 years. Statistical analysis for this study was done in two phases.

In the first part of the study, we have analysed patients demographic and clinical features with the help of percentage analysis.

In second section the health related quality of life was analysed by using questionnaire. Here we used KINDL questionnaire with 30 questions. Each of the questions asked related to their lifestyle (Table 1).

In order to understand the extent to which quality of life affected each questions were graded as 0,1,2,3,4. As we move from zero to four the quality of life decreases. By evaluating on patient-by-patient basis how many of 30 patients quality of life have been affected has been understood (Table 2) On the basis of this value, H-QOL has been classified into three groups.

As mentioned bellow. First we have been found the total score and from that average score (Table 1, Table 2).

| Sr. no. | Questions                                           | Total score | Average score | Level of quality of life |
|---------|-----------------------------------------------------|-------------|---------------|--------------------------|
| 1       | You had to use eye drops                            | 76          | 2.533         | Average                  |
| 2       | You rubbed your eyes                                | 70          | 2.333         | Average                  |
| 3       | You had red eyes                                    | 61          | 2.033         | Average                  |
| 4       | You had tearing                                     | 68          | 2.266         | Average                  |
| 5       | You had, in the morning, Closed and sticky eyes     | 55          | 1.833         | Average                  |
| 6       | You had itchy eyes                                  | 59          | 1.966         | Average                  |
| 7       | You felt burning in your eyes                       | 22          | 0.733         | High                     |
| 8       | You had problems playing with pets                  | 5           | 0.166         | High                     |
| 9       | You had problems in light                           | 43          | 1.433         | Average                  |
| 10      | You had to use tissues                              | 40          | 1.333         | High                     |
| 11      | You had difficulties in reading                     | 41          | 1.336         | Average                  |
| 12      | You had eye secretions                              | 59          | 1.966         | Average                  |
| 13      | You had trouble meeting your friends                | 19          | 0.633         | High                     |
| 14      | You had problems playing video games and computers  | 19          | 0.633         | High                     |
| 15      | You felt embarrassed                               | 14          | 0.466         | High                     |
| 16      | You had difficulties in concentrating in homework or other activities | 37          | 1.233         | High                     |
| 17      | You had blurred vision                              | 12          | 0.4           | High                     |
| 18      | You had problems at school                          | 38          | 1.266         | High                     |
| 19      | You had trouble playing outdoors                    | 50          | 1.666         | Average                  |
| 20      | You had puffy eyes                                  | 32          | 1.066         | High                     |
| 21      | You have eaten little                               | 24          | 0.8           | High                     |
| 22      | You had reduction in eyesight                       | 10          | 0.333         | High                     |
| 23      | You had difficulties in watching TV                 | 41          | 1.366         | Average                  |
| 24      | You cried easily                                    | 13          | 0.43          | High                     |
| 25      | You slept badly                                     | 32          | 1.066         | High                     |
| 26      | You had problems going to the school                | 31          | 1.033         | High                     |
| 27      | You had problems falling asleep                     | 20          | 0.666         | High                     |
| 28      | You attended school regularly                       | 32          | 1.066         | High                     |
| 29      | You enjoyed playing with other children             | 36          | 1.2           | High                     |
| 30      | You had difficulties opening your eyes completely   | 50          | 1.666         | Average                  |
Concept of health-related quality of life

A state of complete physical, mental and social well-being and not merely the absence of disease and infirmity.6

Levels of quality of life

The bellow mentioned categorization is based on the interpretation method,

- High level quality of life: a score between 0 to 1.333 in the survey results towards the particular variable or total variable is indicate for high quality of life for VKC patients.
- Average level quality of life: A score between 1.334 to 2.666 in the survey results towards a particular variable or total variable is indicate for average quality of life for VKC patients.
- Low level quality of life: A score between 2.667 to 4.

RESULTS

According to age criteria, 5 to 10-year age group were more affected than bellow 5 and above 10 years of old (Figure 1). In gender wise assessment 63.33% were males and 26.66% were females (Table 3). For assessing educational status of patients they were categorised into pre-schoolers and schoolers. Again schoolers were categorised into two different group (5 to 10-year-old and 10 to 21-year-old). Out of that 29.33% were pre-schoolers and 70.67% were school going patients. In that 40.67% were 5 to 10-year group and 30% were 10 to 21-year group (Table 4).

![Figure 1: Age wise distribution of the patients.](image)

In patient wise scoring of health related quality of life 20 patients had high level of quality of life and 10 patients had average level of quality of life (Table 2) and in question wise assessment 12 questions show average level of quality of life that is, they find it more difficult to do or face what is stated in question (Table 1).

| Sr. no. | Patients | Average score | Total score | Level of quality of life |
|---------|----------|---------------|-------------|--------------------------|
| 1       | PT1      | 34            | 1.133       | High                     |
| 2       | PT2      | 58            | 1.933       | Average                  |
| 3       | PT3      | 37            | 1.233       | High                     |
| 4       | PT4      | 30            | 1           | High                     |
| 5       | PT5      | 62            | 2.066       | Average                  |
| 6       | PT6      | 63            | 2.1         | Average                  |
| 7       | PT7      | 33            | 1.1         | High                     |
| 8       | PT8      | 54            | 1.8         | Average                  |
| 9       | PT9      | 64            | 2.133       | Average                  |
| 10      | PT10     | 28            | 0.933       | High                     |
| 11      | PT11     | 53            | 1.766       | Average                  |
| 12      | PT12     | 29            | 0.966       | High                     |
| 13      | PT13     | 21            | 0.7         | High                     |
| 14      | PT14     | 37            | 1.233       | High                     |
| 15      | PT15     | 72            | 2.4         | Average                  |
| 16      | PT16     | 35            | 1.166       | High                     |
| 17      | PT17     | 51            | 1.7         | Average                  |
| 18      | PT18     | 33            | 1.1         | High                     |
| 19      | PT19     | 73            | 2.433       | Average                  |
| 20      | PT20     | 21            | 0.7         | High                     |
| 21      | PT21     | 14            | 0.446       | High                     |
| 22      | PT22     | 26            | 0.866       | High                     |
| 23      | PT23     | 24            | 0.8         | High                     |
| 24      | PT24     | 13            | 0.433       | High                     |
| 25      | PT25     | 18            | 0.6         | High                     |
| 26      | PT26     | 43            | 1.433       | Average                  |
| 27      | PT27     | 13            | 0.433       | High                     |
| 28      | PT28     | 22            | 0.733       | High                     |
| 29      | PT29     | 26            | 0.866       | High                     |
| 30      | PT30     | 22            | 0.733       | High                     |

Table 3: Variable wise percentage calculation in gender.

| Gender | Total score | Average |
|--------|-------------|---------|
| Male   | 19          | 63.33%  |
| Female | 8           | 26.66%  |

Table 4: Variable wise percentage calculation of preschoolers and schoolers.

| Variables            | Average |
|----------------------|---------|
| Pre-schoolers        | 29.33%  |
| Schoolers (5-10 year old) | 46.67% |
| Schoolers (10-21 year old) | 30%    |
DISCUSSION

From this study authors are trying to capture physical, psychological and practical aspects of health related quality of life (HR-QOL) of 30 VKC patients. This is generated and tested according to the score of questionnaire. Authors interpreted the level of quality of life based on scoring. A similar study was done by Dr. Ujwala S Sabo et al. They developed QUICK questionnaire for initial validation. 42 questions asked to 30 children with vernal keratoconjunctivitis in the development phase of QUICK questionnaire. Among 42 questions 33 questions were scored as average level of quality of life and 9 with high level of quality of life. In this study 30 questions were asked to 30 patients. In that 12 questions were scored average quality of life and rest of the 18 questions scored high level quality of life. In patient wise scoring 33% (n=10) patients had average quality of life and 67% (n=20) had high quality of life.

Patients with VKC also experienced disease related limitation in their daily routine of their life and while playing sports and meeting friends. Patients reported limitation in their activities that cause exposure to allergens such as from dusty particles while playing in ground and it may lead to irritation in their eyes and thus disease become more severe. Treatment of VKC should improve not only the children’s signs and symptoms, but also their daily life and functioning.

CONCLUSION:

The clinical pattern of VKC seen in South India is similar to those reported from other tropical countries. In addition to the ocular involvement, VKC affects the health related quality of life of the patients significantly. The management of VKC should consider this aspect of health related quality of life, in addition to clinical parameters.

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