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Traditional eye medicine associated keratitis- Current trends and practices

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ABSTRACT

Purpose: To study the prevalence, types and demographic profile of traditional eye medicine (TEM) use among corneal ulcer patients presenting to a tertiary eye care centre in South India.**Materials and Methods:** A cross-sectional study conducted on 432 new corneal ulcer patients at a tertiary eye care centre in South India from September 2018 to July 2019. Data collected included demographic profile such as name, age, sex, occupation, income, rural/urban residence, type of TEM use.**Results:** Of the 432 new corneal ulcer cases, 32 used TEM. Most TEM users belonged to the age group 40- 60 years (n= 20; 62.5%). There was no difference in sex distribution. Majority of TEM users in our study resided in rural areas (n= 30; 93.75%), were involved in agriculture as occupation (n=28, 87.5%) and belonged to the lower socioeconomic status n=31(96.88%) as per Kuppuswamy classification. Profile of TEM used ranged from plant extract (n= 14; 43.75%), tongue cleaning (n= 5; 15.63%), oil (n= 7; 21.87%), breast milk (n= 4; 12.5%) and ash (n= 2; 6.25%).**Conclusion:** Use of traditional medicine is a prevalent practice in the study population. These findings offer a better understanding of health seeking behaviour of the study population which will lead to better planning, implementation and targeting of preventive and promotive eye services and awareness programmes.This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.For reprints contact: reprint@ipinnovative.com

1. Introduction

Ninety percent of global cases of ocular trauma and corneal ulcers lead to corneal blindness in developing countries.¹ Corneal ulcer, is a salient affliction in India and several cases present with history of traditional medicine use, this native medicine may be an organic or an inorganic compound. World health organisation defines traditional medicine as the sum total of the knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or

not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.² Traditional system of medicine used to treat eye conditions do not always have sound scientific evidence for the efficacy of the treatment. Their use as sole first line treatment or with conventional therapy has been associated with poor visual outcome because traditional eye medicine(TEM) is often contaminated, aid the spread of pathogens, and delay appropriate treatment by changing the clinical presentation of common conditions, thus further challenging and delaying the diagnosis.³ Despite the much higher efficacy and reliability and consistency of evidence-

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based medicine, time and again patients turn towards TEM that they procure with ease from a traditional medicine practitioner or a known referral such as a relative or acquaintance.

2. Purpose

To determine the incidence, demographic profile of TEM, types of TEM used among corneal ulcer patients presenting to a tertiary eye care centre in South India.

3. Materials and Methods

Following the approval of the institutional ethics committee, a cross sectional study was conducted between September 2018 to August 2019 at a tertiary eye care centre in Karnataka, South India on corneal ulcer patients with a history of TEM use. All new cases of corneal ulcers that presented to the outpatient department underwent a thorough history taking for the use of TEM in any form. An interviewer administered questionnaire was used for the study after obtaining a written informed consent from the patient. Data included demographic profile that included name, age and grouping of age was done as follows; less than 40, 40-60 and more than 60 years. Other data also included sex, occupation, income which was further categorised based on kuppuswamy classification for socio economic status, rural/urban residence, type of TEM used. Exclusion criteria were those cases with no history of TEM associated corneal ulcer and patients who were not willing to participate in the study. The study participants underwent a thorough examination as per corneal ulcer examination protocol at our institute. In the history taking particular emphasis was laid of what prompted the use of TEM. Thereafter patients were managed as per standard corneal ulcer treatment guidelines. All tenets of the Helsinki declaration were strictly followed in the study.

All data was compiled and entered using Microsoft Excel sheet and analysed using software SPSS version 20.0. The data was analysed using descriptive statistics as and were deemed appropriate.

4. Results (Table 1)

Of the 432 new corneal ulcer patients interviewed, the incidence of TEM was 7.2% (n=32). Age distribution ranged from 14 days to 75 years. Majority of the cases, 62.5% (n= 20) belonged to the age group 40-60 years. Male: female ratio was 1:1. Agriculture was the main occupational practise among cases with n=28(87.5%), 96.88% of the cases belonged to the lower socio-economic status as per the kuppuswamy classification. Majority of TEM users were of rural residence 93.75% (n= 30) and while 6.25% (n=2) resided in the urban area.

Profile of TEM used majorly included plant extract at 43.75% (n= 14), followed by oil derivatives 21.87% (n= 7),

Table 1:

	Number of TEM users	Percentage
Age grouping		
0 – 40 years	5	15.63%
40 – 60 years	20	62.50%
>60 years	7	21.87%
Gender		
Male	16	50%
Female	16	50%
Place of residence		
Rural	30	93.75%
Urban	2	6.25%
Occupation		
Agriculturist/Farmers	28	87.50%
Non Agriculturist	4	12.50%
Socioeconomic status (Kuppuswamy classification)		
Lower	31	96.88%
Middle	1	3.12%
Upper	0	0
Type of TEM		
Plant extract	14	43.75%
Oil derivatives	7	21.87%
Tongue cleaning	5	15.63%
Breast milk	4	12.5%
Ash	2	6.25%

tongue cleaning 15.63% (n=5), breast milk 12.5% (n= 4) and ash 6.25% (n= 2) in descending order.(Figures 1, 2, 3, 4 and 5)

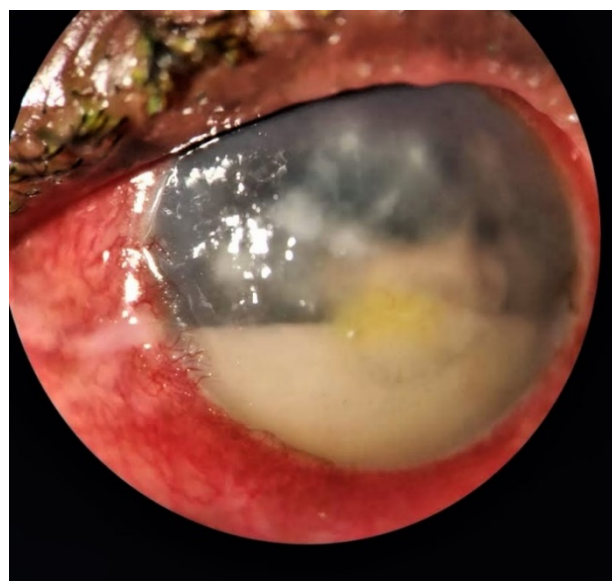


Fig. 1: Case of corneal ulcer treated with plant extract in a 30-year-old farmer

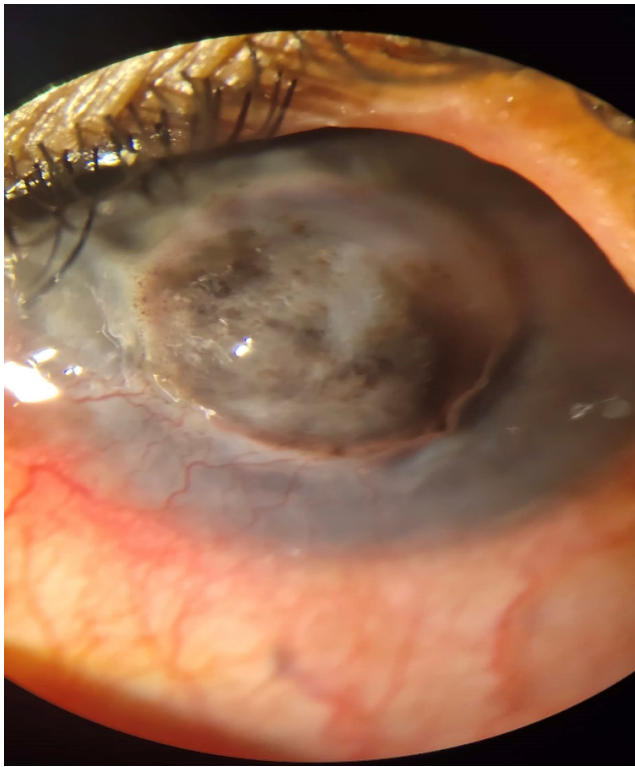


Fig. 2: Case of corneal ulcer with use of oil formulation as TEM for trauma with vegetative matter in a 42-year-old patient



Fig. 4:

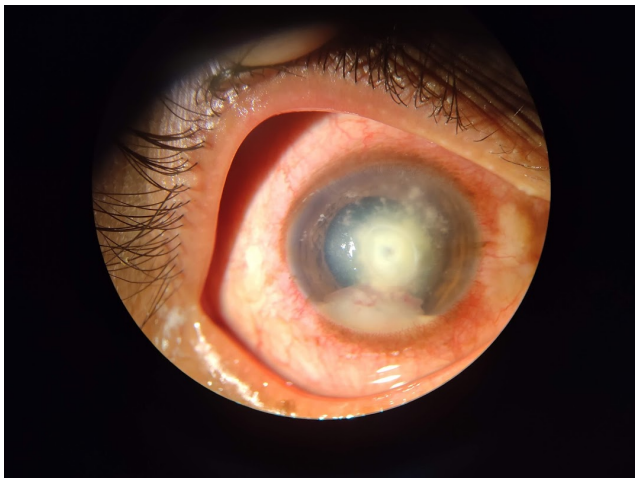


Fig. 3:



Fig. 5:

Figures 3, 4 and 5 cases that presented with corneal ulcer with history of TEM use in the following order-tongue cleaning , Breast milk and ash.

5. Discussion

The incidence of TEM use in our study conducted in Karnataka south India was found to be 7.2% (n = 32) which is similar to a study by Eze et al⁴ at 5.9%. The incidence of the use of TEM varies even within India and across various regions around the globe. A study conducted by Pragna et al⁵ in Tamilnadu put the incidence at 47.7%, whereas Choudhary et al⁶ reported an incidence rate of 38% at Rewa, Madhya Pradesh. Kumar et al⁷ projected a comparatively lower incidence rate of 9.5% in Gujarat. Singh et al from Nepal reported 57% of the patients with corneal ulcers used TEM,⁸ whereas a study on Nigerian population by Ukponmwan and Momoh⁹ reported a low incidence rate of 1.57%. The reasons for varying incidence rates can be attributed to differences in the beliefs and awareness.

Age of the study population with positive history of TEM use ranged from 14 days to 75 years. Age distribution was such that majority of TEM users belonged to the age group 40-60 years (n= 20; 62.5%). The age distribution projected that the subjects predominantly belonged to the economically productive age group as with previous studies, indicating significant morbidity among the breadwinner subpopulation of the society with adverse financial consequences for the family.^{7,10}

our study did not find a significant difference with male: female ratio, as in concordance with studies by Prajna et al⁵ and Ukponmwan et al.⁹

As per the socio-economic classification by kuppuswamy majority of the subjects from our study (n=31; 96.88%) belonged to the lower socioeconomic groups and were mainly farmers and agriculturist by occupation. This was consistent with the findings of studies by Choudhary P et al⁶ and Achigbu et al¹⁰ that documented the use of TEM predominantly by the population residing in rural areas engaged in agriculture work.⁶ Rural residence among subjects was found to be an important factor in the use of TEM in various studies,^{4,9,11} a similar conclusion was drawn from our study, with majority of TEM n= 30 (93.75%) coming from rural India.

Certain significant associations aiding the use of TEM such as rural residence, lower socio economic status in this study can be attributed to certain factors such as lack of ease to hospital access, lack of awareness and regional beliefs and financial burdens associated with hospital visits.

Our study subjects used a variety of TEM, most used was plant extract (n= 14; 43.75%), followed by oil instillation into the conjunctival de sac (n= 7; 21.87%). Plant extract included the leaves, flowers/ fruits, the stem, or the roots, ground into paste or diluted with water or any other liquid to be used as an eye drop/ointment formulation. Other less commoner types of TEM included tongue cleaning (n= 5; 15.63%) which involved the traditional healer wiping the dust/ foreign body away from the corneal surface using his/ her tongue, breast milk (n= 4; 12.5%) applied directly onto the corneal surface and into the conjunctival de sac

via self-administration by the patient and ash (n= 2; 6.25%) instillation into the conjunctival sac. As in our study several African studies, had majority of TEMs of plant origin,^{4,9,10,12,13} whereas the study by Prajna VN et al in south India, human breast milk accounted for around 45% and was the most common TEM used.⁵ This distinction can be due to prevailing socio-cultural norms indigenous to the specific geographical area.

Our study is limited by small sample size, lack of comparative groups such as TEM versus non-TEM users, lack of progression monitoring due to cross-sectional study design as well as referral bias of a tertiary eye care centre.

6. Conclusion

Our study highlights that the use of traditional medicine is still a rampant practice in a subset of our population. Rural residence was a formidable factor aiding TEM use by imposing geographical, financial, educational, social and cultural barriers to access essential eye care services optimally. Local health care providers need to be educated and their cooperation sought, to direct patients to appropriate health care facilities.

A significant association between low socioeconomic status and TEM use reflects how educational and financial status determines access to better health care and thus quality of life. These findings offer a better understanding of health seeking behaviour of the study population that would aid in planning, implementation and targeting of preventive and promotive eye services and awareness programmes. Health education and awareness is most essential at the primary eye care sector of the community to prevent corneal blindness due to traditional eye medicine. Emphasis must also be laid on intensive and elaborate counselling of the patient as well as the accompanying person along with the treatment of corneal ulcer in clinical practice at the tertiary care centres.

7. Source of Funding

None.

8. Conflicts of Interest

There are no conflicts of interest.

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