Volume - 7 Issue - 7 July - 2017 ISSN - 2249-555X IF : 4.894 IC Value : 79.5						
anal OS Repairies Barrison & Hana	Ophthalmology A STUDY OF CALOTROPIS INDUCED OCULAR TOXICITY IN WESTERN RAJASTHAN					
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ABSTRACT Objecting Method assessment, slit lamp examinat presence of corneal oedema and tear supplement. Results: In this series, all patien as with other reports, pain was su Conclusion: the latex of Calotra reduction in endothelial cell court	ve: To assess spectrum of ocular toxicity caused by latex of calotropis procera and its management. s : Prospective study on 15 cases. All patients underwent complete examination including visual acuity ion, fundus evaluation, tonometry and fluorescein staining. Specular microscopy was carried out to confirm evaluate endothelial cell count and morphology. Patient were treated with topical corticosteroid, cycloplegic and ts presented with sudden dimness of vision with photophobia due to corneal edema with Descemet's folds. Again rprisingly absent in all the cases. opis procera causes immediate severe corneal damage with painless sudden dimness of vision. It may also cause at over a period of time.					

KEYWORDS: calotropis, latex, keratitis

INTRODUCTION

Calotropis procera (Fig. 1) belonging to Asclepiadaceae family grows generally in desert areas and is ubiquitous across Rajasthan. In India, it is found mainly in Assam, West Bengal, Rajasthan, Punjab, particularly in the wastelands. It is called Ak in Hindi and Akonda in Bengali and also known as Sodom apple or Madar shrub. It produces copious amounts of thick milky sap which profusely exudes out on breaking the leaves or stalk of the plant also called milkweeds. It is common to get ocular injuries caused by accidental contact or inoculation of the latex while cutting it or plucking flower for worship of lord shiva and children during playing.



Fig.3:OBSERVATION TABLE

DEMOGRAPHYAND VISUALACUITY INALL PATIENTS

Case	age	Sex	Eye	Time of	Visual	Visual	Visual
no			invol	presentat	acuity at	auity	acuity after
			ved	ion after	presentati	after 5	15 days
				injury	on	days	
1	18	Male	RE	17hours	6/24	6/9	6/6
2	21	Male	RE	22hours	6/24	6/6	6/6
3	6	Male	LE	24 hours	6/36	6/9	6/6
4	32	female	RE	18 hours	6/9	6/6	6/6
5	22	female	RE	4 hours	6/18	6/9	6/6
6	18	female	LE	22 hours	6/24	6/6	6/6
7	25	Male	RE	6 hours	6/18	6/6	6/6
8	21	Male	RE	16 hours	6/9	6/6	6/6
9	50	Male	RE	2 hours	6/18	6/6	6/6
10	30	Male	LE	24 hours	6/36	6/9	6/6
11	32	Male	RE	9 hours	6/60	6/18	6/9
12	40	Male	RE	12 hours	6/36	6/9	6/6
13	40	female	LE	24 hours	6/60	6/18	6/9
14	18	Female	LE	22 hours	6/18	6/9	6/6
15	25	Male	RE	12 hour	6/24	6/6	6/6

RESULTS

- The minimum age of case presented in our study was 6 year and maximum was 50 year with mean age of 26 year.
- Out of 15, ten patients were male and five were female.
- Right eye was involved in ten cases while in rest of cases left eye was involved.
- Out of fifteen 3 cases presented in less then 6 hour duration, 3 cases in 6-12 hours, 3 cases in 12-18 hour and 6 cases in 18-24 hour duration.
- At time of presentation visual acuity was 6/9 in 2 cases, 6/18 in 4, 6/24 in 4, 6/36 in 3 and 6/60 in 2 cases in involved eye while in uninvolved eye BCVA was 6/6.

Fig.1: plant of Calotropis Procera

METHODOLOGY

Prospective clinical study- we report the spectrum of ocular toxicity following accidental inoculation of latex of Calotropis procera in 15 eyes between july 2015 and July 2016.

All patients underwent complete examination including visual acuity assessment, slit lamp examination, fundus evaluation, tonometry and fluorescein staining. Pachymetry and specular microscopy was carried out in some cases to confirm presence of corneal oedema and evaluate endothelial cell count and morphology.

Most of the patients in our study was male and they injured while cutting wood and one child who was playing with plant stem and two females while plucking flowers.

All patients immediately washed their eyes with water and presented to our department with in few hours. All patients were prescribed topical corticosteroid, cycloplegic, tear supplement except the patient who had epithelial defect treated with plain antibiotic drop and after healing of defect topical steroid was given.

Patients were followed after five and fifteen days. All patient recovered with in period of 5 to 10 days.

Fig.2: fluroscein staining of cornea

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- All patients reported a burning sensation, watering immediately after the accidental splashing of Calotropis latex associated with blurring of vision with in few hours. There was mild discomfort although none of the patient reported any significant pain.
- There was no history of ocular trauma, surgery, or any other ophthalmic problem in any of the patients.
- .On slit lamp examination all eyes showed mild conjuctival and circumcorneal congestion and there was corneal odema and descemet folds present.
- On fluorescein staining seven out of fifteen cases showed corneal staining suggestive of epithelial defect and and four cases showed conjuctival staining in form of triangle from lower fornix.
- There were no keratic precipitates (Kps). Anterior chamber showed no cells or flare. Iris, pupil, lens were normal. Fundus examination was normal. Intraocular pressure was with in normal range 10-14 mmhg.
- Specular microscopy was performed in four cases but on presentation reading can not be taken due to epithelial defect and in one case there was significant difference in central corneal thickness and endothelial count.
- After starting treatment patients were followed up at 5 day and 15 day interval. In 7 cases visual acuity improved up to 6/6, 6/9 in 6 cases and 6/18 in 2 cases at day 5 followup.
- At day 15 visual acuity improved upto 6/6 in 13 cases and 6/9 in 2 cases.

DISCUSSION

The sap of C. procera is acidic in reaction and turns blue litmus red. On keeping for some time the latex separates into a white coagulum and clear serum. Latex contains several alkaloids like calotropin, catotoxin, calcinin, gigantin, strychnine. The serum is highly toxic. Gigantin a white crystalline substance isolated from the serum has been found to be 15-20 times as poisonous as strychninel. Previous reports showed that accidental contact of Calotropis latex into the eye caused violent keratoconjunctivitis with associated corneal edema and gross dimness of vision but without any pain. In this series, all patients presented with sudden dimness of vision with photophobia due to corneal edema with Descemet's folds. Ocular manifestation may be due to either acidic nature of milky latex or toxin present in latex. A study done by Col Shrikant Waikar , Brig V.K. Srivastava showed two stages of calotropis toxicity –

(1) stage of acid injury(2) stage of toxicity

Stage 1 manifest immediately with burning sensation, pain and photophobia. There is staining of cornea and conjunctiva due to epithelial defects as a result of acid injury.

Stage 2 toxic effect manifests after a few hours with diminution of vision. The noticeable cause of this was corneal oedema with folds in Descemet's membrane. It probably occurs because of toxicity to corneal endothelium¹⁴.

CONCLUSION

- Initial first six hours of injury are critical, if patient comes with in six hours of injury then visual prognosis is good as compare to the patient who comes later.
- Îmmediate wash with normal saline or plain water can prevent severe visual loss.
- Topical steroid with cycloplegic in form of homatropine is effective drug modality with supportive treatment in form of lubricant and analgesics.
- 4. Local quack treatment is not advisable.
- Immediate wash of hands after contact with sap to avoid contact with eyes.

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