

OCULAR TOXICITY BY LATEX OF CALOTROPIS PROCERA IN RAJASTHANAnil Goyal¹, Dileep Kumar²**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: AIM: 1 document the spectrum of ocular toxicity of calotropis procera, its complications, prevention and management. 2 Make aware or educate the field workers about the toxic effects of calotropis procera latex. **METHODS:** A retrospective study of 25 patients those presented with accidental ocular contact or injury with latex of calotropis procera in our hospital between October 2013 to September 2014 was done. Detailed history and ocular examinations like BCVA on presentation, slit lamp examination, conjunctival and corneal involvement including fluorescein staining and IOP measurement were carried out for each patient. **RESULTS:** All patients were presented with painless blurring of vision with burning sensations and photophobia. All eyes had conjunctival congestion and mild to severe corneal edema with descemets folds. Most of the patients were male, agriculture workers and presented within 24 hours of injury. 84% patients had BCVA at presentation less than or equal to 20/40. 20% eyes had iridocyclitis and 12% had associated secondary glaucoma. After treatment with topical antibiotic, steroids, cycloplegics, antiglaucoma agents, hypertonic saline and tear supplements, 88% patients recovered completely within 3 to 7 days. **CONCLUSIONS:** Calotropis procera latex causes significant ocular morbidity which can be prevented by simple health education.

KEYWORDS: Ocular toxicity, calotropis, latex, Akra.

INTRODUCTION:

- Calotropis procera is a xerophytic shrub of family asclepiadacea.
- It is commonly known as akra and madar in India. In India, it is commonly found in Assam, West Bengal, Rajasthan, Punjab, Particularly in the wastelands.
- They are medium branched and perennial shrubs or small trees that grow up to a height of 4-5 meters with milky latex.
- It has white or pink flowers which bloom between February and June.
- Its flowers and leaves are used to worship Lord Shiva.

MATERIAL & METHODS (CASE REPORT):

- We report here a retrospective analysis of 25 patients those presented with accidental ocular contact or injury with the latex of calotropis procera in our hospital between October 2013 to September 2014.
- Apart from demographic profile, more detailed history was obtained from each patient to determine the mode of injury.
- Ocular examinations like best corrected visual acuity (BCVA) on presentation, slit lamp examination, conjunctival injection, extent of corneal involvement including fluorescein staining and intraocular pressure were carried out for each patient.

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- Although most of the patients had given the history of washing their face and eyes with water, further eye wash was given by ringer' lactate solution for those who had presented within 24 hrs.
- They were treated with tapering doses of topical antibiotic –steroid drops, cycloplegic drops, 5% hypertonic saline, tear substitutes' and oral vitamin C. Additionally the patients with secondary glaucoma were treated with antiglaucoma medications.
- All patients were followed up at a regular interval depending upon the severity of injury and studied for all the parameters.
- There was a strong male preponderance (M: F= 19:6) with only 6 female patients.
- Patient's age ranges from 7-67 yrs.
- Most of the patients were agriculture workers.
- Predominantly RE was affected. In three patients both eyes were affected.
- 16 patients presented within 24 hours of injury while 6 patients were within 24-48 hours.
- 21 patients (84%) had BCVA less than or equal to 20/40 at the time of presentation.
- 4 patients (16%) had BCVA better than 20/40 at the time of presentation.
- We excluded those patients who had other causes of defective visual acuity like corneal and lenticular opacities.
- 9 patients (36%) had 20/20 BCVA after 2 days of starting treatment.
- 22 patients (88%) had BCVA 20/20 after 7 days treatment.

DISCUSSION:

- The latex of calotropis procera contains many alkaloids like calotropin, catotoxin, calcillin. They are irritant and have pro-inflammatory activity.⁽¹⁾
- Different studies showed that latex produces intense inflammatory response involving stromal edema. They showed that this was due to the presence of histamine in the latex itself and due to the release of mast cell histamine. Besides, the latex has also been shown to induced prostaglandin synthesis through the induction of cox-2 enzyme.⁽²⁾ Both the histamine and prostaglandin are the key mediators in an inflammatory response. Accordingly we suggest the mechanism of stromal keratitis to be due to inflammation induced by exposure to latex due to its strong pro-inflammatory property.
- Previous reports showed that accidental contact of calotropis latex into the eye caused violent kerato-conjunctivitis with associated corneal edema and painless dimness of vision.⁽³⁾ The clinical course of their patients was very similar to our series of patients.
- Most of the patients show descemets folds and stromal edema which shows latex is highly toxic to endothelium.⁽⁴⁾
- Again as with other reports burning was there but pain was absent in all the cases. It was probably due to analgesic properties of calotropis latex.⁽⁵⁾

CONCLUSION:

- In conclusion latex of calotropis procera causes immediate mild to moderate corneal damage with painless blurring of vision.
- Every year during the month of February and April a few people suffer from this kind of chemical injury during the festive season.

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- Simple health education like washing of hands, avoiding contact or rubbing of eyes while plucking of calotropis flowers or cutting trees is important to prevent this kind of injury.

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Sl. No.	Age	Sex	Eye Involved	Occupation	Time of Presentation
1	7 yrs.	M	RE	Student	<24hrs
2	24 yrs.	M	RE	Agriculture Worker	<24hrs
3	27 yrs.	M	RE	Agriculture Worker	<24hrs
4	35 yrs.	F	LE	Agriculture Worker	<24hrs
5	29 yrs.	M	RE	Teacher	24-48hrs
6	35 yrs.	M	RE	Agriculture Worker	<24hrs
7	29 yrs.	F	LE	Agriculture Worker	<24hrs
8	35 yrs.	M	RE	Agriculture Worker	<24hrs
9	47 yrs.	M	RE	Agriculture Worker	<24hrs
10	40 yrs.	M	RE	Agriculture Worker	<24hrs
11	51 yrs.	F	RE	Agriculture Worker	<24hrs
12	37 yrs.	M	LE	Agriculture Worker	<24hrs
13	12 yrs.	F	RE	Student	24-48hrs.
14	51 yrs.	F	LE	Agriculture Worker	24-48hrs.
15	29 yrs.	M	BE	Agriculture Worker	<24hrs
16	37 yrs.	M	RE	Agriculture worker	<24hrs.

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17	59 yrs.	M	RE	Agriculture Worker	<24hrs.
18	12 yrs.	M	RE	Student	<24hrs.
19	19 yrs.	M	RE	Agriculture Worker	24-48hrs.
20	53 yrs.	M	BE	Agriculture Worker	<24hrs
21	57 yrs.	F	LE	Agriculture Worker	<24hrs.
22	67 yrs.	M	RE	Agriculture Worker	24-48hrs.
23	37 yrs.	M	RE	Agriculture Worker	24-48hrs.
24	39 yrs.	M	RE	Agriculture Worker	<24hrs.
25	43 yrs.	M	RE	Agriculture worker	<24hrs.

TABLE 1: DEMOGRAPHIC PROFILE

Out of 25 patients, 3 patients instilled calotropis latex in their eyes to treat some eye problem. They had severe burning & watering. They came to us within 24 hrs. we thoroughly wash their eyes with ringer lactate solution

SI. No.	BCVA on presentation	BCVA 2days after treatment	BCVA 7days after treatment
1.	20/30	20/20	20/20
2	20/40	20/20	20/20
3	20/40	20/30	20/20
4	20/40	20/20	20/20
5	20/40	20/30	20/20
6	20/40	20/30	20/20
7	20/40	20/30	20/20
8	20/30	20/20	20/20
9	20/40	20/30	20/20
10	20/200	20/80	20/30
11	20/40	20/20	20/20
12	20/40	20/20	20/20
13	20/30	20/20	20/20
14	20/60	20/40	20/20
15	3 M FC	6 M FC	20/60
16	20/40	20/30	20/20
17	20/30	20/20	20/20
18	20/60	20/40	20/20
19	20/40	20/20	20/20

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20	20/200	20/100	20/40
21	20/40	20/30	20/20
22	20/60	20/40	20/20
23	20/80	20/60	20/20
24	20/60	20/40	20/20
25	20/40	20/20	20/20

Table 2

All the 3 patients had epithelial defect, anterior chamber reaction and their IOP was raised. We admitted them and advised antibiotic-steroids, lubricating, cycloplegic drops at day time and pad and patch with antibiotic ointment at night. Tablet diamox orally given to control IOP

	Complications	No. of pts had complications
1	Epithelial defect	03
2	Iridocyclitis	03
3	Secondary glaucoma	03
4	Associated dermatitis	01

Table 3: Complications

After 7 days epithelial defects were healed and IOP was normal. We referred one patient to skin specialist for dermatitis.

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