



## Case Report

# Essential oils in children- a boon or a curse

Kiran B, Geetha M, Santosh S

East Point College of Medical Sciences and Research Center, Bangalore

### Article Info

**Corresponding author:** Dr. (Mrs) Geetha M, Department of Paediatrics, East Point College of Medical Sciences and Research Center, Bangalore

Email: geetha.m@eastpoint.ac.in

**How to cite this article:** Kiran B, Geetha M, Santosh S.

Essential Oils in children- a boon or a curse. J Ind. Soc.

Toxicolo 2021;17(1):19-20.

Received – 09.04.2021

Accepted – 28.06.2021

### Abstract

Essential oils are plant derived and are used in perfumes, cosmetics, room fresheners. Because of the aroma, children have a tendency to taste. It is potentially toxic when ingested and are epileptogenic. This case report stresses the importance of proper storage of essential oils and discourages the use of the oil in children as inhalation may also induce seizures.

**Keywords:** Essential oil, Eucalyptus oil, Seizures, Children

### Introduction

Essential oils are oils that are extracted from plants. Some oils like lavender have a relaxing effect on the body and the brain and some oils like bergamot have a stimulating effect on the body and brain. Essential oils are used for massaging to produce soothing effect by mixing in plain oil or they can be diluted to produce aroma for inhalation.[1] Eucalyptus oil is a traditional herbal medicine used widely in India for a number of ailments.[2,3] It is available easily as over the counter medication. There are many case reports of poisoning published but the awareness among public is lacking still. Seizures are common pediatric neurological disorder. 4 to 10% of children experience at least one episode of seizure in the first 16 years of their life.[1] Seizures are a result of abnormal excessive or synchronous neuronal activity in the brain. The most common type of acute seizures in children worldwide is febrile seizures. One of the causes of

afebrile seizures is essential oil poisoning.

### Case details

A 2 year 3month old boy was brought to our emergency department with history of three to four episodes of afebrile generalized tonic seizures before arrival to hospital each lasting for about 30 seconds to less than a minute. There was no history of fever, vomiting, gastro intestinal disturbances. On arriving to hospital, child was conscious, afebrile, vitals were stable. Systemic examination was normal, neurological examination revealed no neurological deficits. On detailed questioning and probing, parents revealed that the child accidentally ingested about 5 to 10 ml of eucalyptus oil from the bottle accidentally around an hour before. The eucalyptus oil was kept in an unlabelled container and was used for local application. The child was admitted in PICU and managed supportively. There was no seizure recurrence since admission. Hematological, renal parameters, blood sugar, serum electrolytes, serum calcium were within normal limits. Chest X ray was normal. Electroencephalography record was normal. Brain imaging was normal with no structural abnormalities in brain. He was stable and discharged and the child is in regular follow up.

### Discussion

Eucalyptus oil poisoning is commonly seen in children than adults and is usually unintentional [3]. The common ingredients from commercial eucalyptus oil are  $\alpha$ -Pinene, myrcene, cineole, fenchone,  $\alpha$ -terpinolene,  $\beta$ -terpinyl acetate, and camphor. True eucalyptus oil contains cineole being the main constituent.[4] Eucalyptus oil taken from the eucalyptus tree is true eucalyptus oil which does not contain camphor. Both eucalyptus oil and camphor are epileptogenic.[4] Eucalyptus oil is used mainly in pharmaceutical, flavoring, pesticide, perfumery, and industrial uses. Most people are not aware of the effects of these essential oils. They feel it is natural and innocuous. Proper labeling and

awareness is necessary to reduce abuse and prevent poisoning. Some essential oils that provoke seizures are rosemary, fennel, sage, eucalyptus and spike lavender, mainly if there is epilepsy.[2,5]

Eucalyptus oil is a traditional herbal medicine used widely for a number of common ailments. Eucalyptus oil poisoning can occur after ingested or inhalational in epileptic patients. The symptoms commonly noted after ingestion are burning sensation in the mouth and throat, abdominal pain, and spontaneous vomiting. The central nervous system effects are giddiness, ataxia, and disorientation followed by loss of consciousness. Convulsions are rare in adults but are common in children.[6] There is no specific antidote and the management of eucalyptus oil poisoning is mainly supportive and symptomatic. Emesis is contraindicated as there is risk of aspiration. The role of activated charcoal is controversial.[7]

Eucalyptus oil once ingested is widely distributed throughout the body. Even small amounts of eucalyptus oil can be fatal so it should never be given orally. Because eucalyptus oil is cheap and easily available household medicine; caretakers should be aware of the life-threatening risks of ingestion.[8] Inhalation can have epileptogenic potential, so even local application to be avoided in children.

## Conclusion

All people including medical professionals should be aware of the toxic effects of eucalyptus oil, which is used often in daily life in India. Treatment of Eucalyptus poisoning is mainly supportive as there is no specific antidote. The rapid correction of metabolic acidosis and maintenance of hemodynamic parameters will lead to a rapid recovery. Warning labels should be made mandatory on all products that contain eucalyptus oil. Eucalyptus oil is an essential oil may be a soother but definitely a curse and should be avoided in children even for inhalation.

## References:

1. Adhikari, S, Sathian, B, Koirala, DP, Rao KS. Profile of children admitted with seizures in a tertiary care hospital of Western Nepal. *BMC Pediatr* 2013; 13(43):1-7.

2. Complementary therapies. [Internet] [Accessed on 28.06.2021] Available from: <https://epilepsysociety.org.uk/living-epilepsy/wellbeing/complementary-therapies>.
3. Essential Oils: Poisonous when misused. [Internet] [Accessed on 28.06.2021] Available from: <https://www.poison.org/articles/essential-oils>.
4. Patel S, Wiggins J. Eucalyptus oil poisoning. *Arch Dis Child*. 1980;55:405–6.
5. Flaman Z, Pellechia-Clark S, Bailey B, McGuigan M. Unintentional exposure of young children to camphor and eucalyptus oils. *Paediatr Child Health*. 2001;6:80–3.
6. Karunakara BP, Jyotirmanju CS. Eucalyptus oil poisoning in children. *J Pediatr Sci*. 2012;4:e 132.
7. Tibballs J. Clinical effects and management of eucalyptus oil ingestion in infants and young children. *Med J Aust*. 1995;163:177–80.
8. Webb NJ, Pitt WR. Eucalyptus oil poisoning in childhood: 41 cases south-east Queensland. *J Paediatr Child Health*. 1993;29:368–71.