



Essential Oils and Children Research

Paediatr Child Health. 2001 Feb;6(2):80-3.

Unintentional exposure of young children to camphor and eucalyptus oils.

Abstract

BACKGROUND:

Essential oils, such as camphorated and eucalyptus oils, are volatile oils that can be absorbed by mouth and through the skin; if ingested orally by children, they can be harmful, even life-threatening.

OBJECTIVE:

To determine the frequency of essential oil ingestion among children in Toronto, Ontario.

METHODS:

Charts from December 1995 through March 1997 at the Ontario Regional Poison Information Centre, The Hospital for Sick Children, Toronto were reviewed to collect information on calls about essential oil ingestion, and a search of MEDLINE articles from 1966 to 1998 was conducted using the key words: 'camphor', 'eucalyptus', 'paediatric', and 'poisoning'.

RESULTS:

Callers to the Poison Information Centre reported that 251 children had ingested an essential oil or product: eucalyptus oil 50 children; camphorated oil 18 children; VapAir (Drug Trading, Canada) vaporizing liquid 93 children; and Vicks VaporRub (Procter & Gamble, Canada) 90 children. The most common symptoms were cough, vomiting and cough associated with vomiting. Two children had seizures but recovered. The MEDLINE search found 18 reports of paediatric ingestion of the oils or oil products. The main symptoms were vomiting, lethargy, coma and seizures. One child died.

CONCLUSION:

Although widely used by health care consumers, essential oils and the products that contain them can be harmful when ingested by children. Further education for parents and other caregivers about the risks involved in exposure to these products is required.

Aust N Z J Public Health. 1997 Jun;21(3):297-302.

Eucalyptus oil poisoning among young children: mechanisms of access and the potential for prevention.

Abstract

We studied unintentional paediatric eucalyptus oil poisoning to identify potential intervention strategies. The epidemiology of paediatric eucalyptus oil poisoning in Victoria was determined by analysis of four databases. The sequence of events preceding ingestion was examined by a telephone survey involving 109 parents or guardians of children under five years involved in an actual or suspected ingestion of eucalyptus oil. Such children were identified prospectively from all callers during a nine-month period to the Victorian Poisons Information Centre and those presenting to the emergency departments of the participating hospitals of the Victorian Injury Surveillance System. Eucalyptus oil was a leading agent associated with hospitalisation for poisoning among Victorian children aged under five years. In the telephone survey, 90 incidents were found to involve vaporiser solutions, 15 eucalyptus oil preparations, and the remainder other eucalyptus-oil-containing products of a medicinal nature. Regardless of the type of product, 74 per cent gained access via a home vaporiser unit, most frequently placed at ground level. Although amounts ingested are usually small, the reported range of toxic doses is wide, necessitating at least a medical assessment following ingestion. Potential countermeasures identified in a consultative workshop included: discontinuing the use of eucalyptus oil as a therapeutic agent; confirmation that vaporiser-well residues are nontoxic; removal of barriers to product reregistration following safety-related modifications; improved child-resistant closures; discouraging vaporiser use for respiratory infections among young children; and development and dissemination of protocols for treatment of suspected ingestion.

BMC Complement Altern Med. 2016 Nov 9;16(1):450.

Aromatherapy for the treatment of PONV in children: a pilot RCT.

Abstract

BACKGROUND:

Postoperative nausea and vomiting (PONV) is one of the most common postoperative complications of general anesthesia in pediatrics. Aromatherapy has been shown to be effective in treating PONV in adults. Given the encouraging results of the adult studies, we planned to determine feasibility of doing a large-scale study in the pediatric population.

METHODS:

Our group conducted a pilot randomized controlled trial examining the effect of aromatherapy on post-operative nausea and vomiting in patients 4-16 undergoing ambulatory surgery at a single center. Nausea was defined as a score of 4/10 on the Baxter Retching Faces Scale (BARF scale). A clinically significant reduction was

defined as a two-point reduction in Nausea. Post operatively children were administered the BARS scale in 15 min intervals until discharge home or until nausea score of 4/10 or greater. Children with nausea were randomized to saline placebo group or aromatherapy QueaseEase™ (Soothing Scents, Inc, Enterprise, AL: blend of ginger, lavender, mint and spearmint). Nausea scores were recorded post intervention.

RESULTS:

A total of 162 subjects were screened for inclusion in the study. Randomization occurred in 41 subjects of which 39 were included in the final analysis. For the primary outcome, 14/18 (78 %) of controls reached primary outcome compared to 19/21 (90 %) in the aromatherapy group ($p = 0.39$, $\eta^2 0.175$). Other outcomes included use of antiemetic in PACU (control 44 %, aromatherapy 52 % $P = 0.75$, $\eta^2 0.08$), emesis (Control 11 %, 9 % aromatherapy, $P = 0.87$, $\eta^2 = 0.03$). There was a statistically significant difference in whether subjects continued to use the intervention (control 28 %, aromatherapy 66 %, p -value 0.048, $\eta^2 0.33$).

CONCLUSION:

Aromatherapy had a small non-significant effect size in treating postoperative nausea and vomiting compared with control. A large-scale randomized control trial would not be feasible at our institution and would be of doubtful utility.

Pain Manag. 2016 Nov 30. [Epub ahead of print]

Four steps to eliminate or reduce pain in children caused by needles (part 1).

Abstract

Dr Stefan Friedrichsdorf* speaks to Jade Parker, Commissioning Editor: Stefan J Friedrichsdorf, MD, is medical director of the Department of Pain Medicine, Palliative Care and Integrative Medicine at Children's Hospitals and Clinics of Minnesota, Minneapolis/St Paul, MN, USA, home to one of the largest and most comprehensive programs of its kind in the country. The interdisciplinary pain team is devoted to prevent and treat acute, procedural, neuropathic, psycho-social-spiritual, visceral, and chronic/complex pain for all inpatients and outpatients in close collaboration with all pediatric subspecialties at Children's Minnesota. The palliative care team also provides holistic care for pediatric patients with life-threatening diseases and adds an extra layer of support to the care of children with serious illness and their families. Integrative medicine provides and teaches integrative ('non-pharmacological') therapies, such as massage, acupuncture/acupressure, biofeedback, aromatherapy and self-hypnosis, to provide care that promotes optimal health and supports the highest level of functioning in all individual children's activities. Children's Minnesota became the first children's hospital to system-wide implement a "Children's Comfort Promise: We promise to do everything to prevent and treat pain," resulting in decrease or elimination of needle pain

caused by vaccinations, blood draws, intravenous access, and injections in more than 200,000 children annually.

J Pediatr Endocrinol Metab. 2016 Jan;29(1):47-53. doi: 10.1515/jpem-2014-0361.

Essential oils reduce autonomous response to pain sensation during self-monitoring of blood glucose among children with diabetes.

Abstract

BACKGROUND:

Essential oils were proven to possess analgesic activity in adults. Children with diabetes are exposed to highly painful interventions such as self-monitoring of blood glucose (SMBG).

OBJECTIVE:

An evaluation of the analgesic properties of two essential oils during SMBG in diabetic children.

SUBJECTS:

We included 73 hospitalized children (age<18 years) with well-controlled type 1 diabetes.

METHODS:

The study extended over a period of 1 month (2 weeks for control group and 1 week for orange and lavender oil application). The measurements were performed four times per day in a shared room during SMBG. Pain intensity was evaluated by visual analog scale (VAS) and change of baseline heart rate (Δ HR%). An aromatherapy device was used to disperse essential oils in the testing room.

RESULTS:

We performed 647 individual measurements of pain intensity and Δ HR%. Girls reported higher VAS scores [median, Me 0.5 (interquartile range, IQR 0-1) vs. 0 (IQR 0-0.5), $p=0.0036$]. Both age and duration of diabetes correlated with Δ HR% [$r=-0.14$, $p=0.0005$; $r=-0.12$, $p=0.0025$]. Negative correlations were also noted for VAS/age [$r=-0.12$, $p=0.0030$] and VAS/duration of diabetes [$r=-0.12$, $p=0.0034$]. Aromatherapy did not alter the VAS score ($p=0.40$), while Δ HR% decreased with borderline significance ($p=0.0639$). After adjustment for patient's age and sex lower Δ HR% was associated with essential oil application ($p=0.0252$). Aromatherapy did not have any influence on VAS scores in multivariate analysis ($p=0.35$).

CONCLUSION:

Aromatherapy decreased the autonomic response to a painful stimulus by lowering Δ HR%, but did not affect the perception of pain reported by VAS.

Vestn Otorinolaringol. 2011;(5):51-4.

[The efficacy of the application of essential oils for the prevention of acute respiratory diseases in organized groups of children].

Abstract

The efficacy and safety of the application of essential oils for the prevention of acute respiratory diseases and alleviation of clinical manifestations of rhinitis was evaluated in a group of children aged 3-4 years. It was shown that inhalation of a mixture of essential oils resulted in a 42.5% decrease of the prevalence of the above pathologies.

Specifically, they developed only in each third child from the group of frequently ill children. No side effects of the treatment were documented. 25% of the children suffered only from mild acute respiratory diseases, fever was absent in 5%. The severity and duration of the symptoms of rhinitis decreased in more than 80% of the children. Simultaneously, the requirement of decongestants and local (intranasal) antibiotics was reduced.

Int J Pediatr Otorhinolaryngol. 2013 Sep;77(9):1579-81. doi: 10.1016/j.ijporl.2013.07.014. Epub 2013 Aug 8.

Evaluation of the effect of aromatherapy with lavender essential oil on post-tonsillectomy pain in pediatric patients: a randomized controlled trial.

Abstract

OBJECTIVE:

To evaluate the effect of aromatherapy with *Lavandula angustifolia* essential oil on post-tonsillectomy pain in pediatric patients.

METHODS:

This was a randomized controlled prospective clinical trial. In this study, 48 post-tonsillectomy patients aged 6-12 years were randomly assigned to two groups (24 patients in each group). After tonsillectomy surgery, all patients received acetaminophen (10-15 mg/kg/dose, PO) every 6h as necessary to relieve pain. The patients of the case group also inhaled lavender essential oil. The frequencies of daily use of acetaminophen and nocturnal awakening due to pain, and pain intensity (evaluated using visual analog scale [VAS]) were recorded for each patient for 3 days after surgery. Finally, the mean values of variables were compared between two groups separately for each post-operative day.

RESULTS:

The use of lavender essential oil caused statistically significant reduction in daily use of acetaminophen in all three post-operative days but had not significant effects on pain intensity and frequency of nocturnal awakening.

CONCLUSION:

Aromatherapy with lavender essential oil decreases the number of required analgesics following tonsillectomy in pediatric patients.

Adv Biomed Res. 2013 Mar 6;2:10. doi: 10.4103/2277-9175.107968. Print 2013.

Effect of aromatherapy with orange essential oil on salivary cortisol and pulse rate in children during dental treatment: A randomized controlled clinical trial.

Abstract

BACKGROUND:

Essential oils have been used as an alternative and complementary treatment in medicine. Citrus fragrance has been used by aromatherapists for the treatment of anxiety symptoms. Based on this claim, the aim of present study was to investigate the effect of aromatherapy with essential oil of orange on child anxiety during dental treatment.

MATERIALS AND METHODS:

Thirty children (10 boys, 20 girls) aged 6-9 years participated in a crossover intervention study, according to the inclusion criteria, among patients who attended the pediatric department of Isfahan Dental School in 2011. Every child underwent two dental treatment appointments including dental prophylaxis and fissure-sealant therapy under orange aroma in one session (intervention) and without any aroma (control) in another one. Child anxiety level was measured using salivary cortisol and pulse rate before and after treatment in each visit. The data were analyzed using t-test by SPSS software version 18.

RESULTS:

The mean \pm SD and mean difference of salivary cortisol levels and pulse rate were calculated in each group before and completion of treatment in each visit. The difference in means of salivary cortisol and pulse rate between treatment under orange odor and treatment without aroma was 1.047 ± 2.198 nmol/l and 6.73 ± 12.3 (in minutes), which was statistically significant using paired t-test ($P = 0.014$, $P = 0.005$, respectively).

CONCLUSION:

It seems that the use of aromatherapy with natural essential oil of orange could reduce salivary cortisol and pulse rate due to child anxiety state.

Burns. 2012 Sep;38(6):840-5. doi: 10.1016/j.burns.2012.01.007. Epub 2012 Feb 2.

Aromatherapy massage seems to enhance relaxation in children with burns: an observational pilot study.

Abstract

OBJECTIVE:

This observational pilot study investigated effects of aromatherapy massage in paediatric burn patients.

METHODS:

The setting was a 17 beds level I burn unit in Cape Town, South Africa. Between January and October 2009 heart rates and respiratory rates of patients who underwent aromatherapy massage sessions were read before and after the sessions. Primary outcomes were decline in heart rates and respiratory rates, a sign of relaxation. Behavioural responses (sleep/awake state, facial expression, body posture) were documented as secondary outcomes.

RESULTS:

A convenience sample of 71 paediatric burn patients (median age 3 years) underwent a total of 126 massage sessions. Mean heart rate decreased significantly from 118 (SD 20) to 109 (SD 21), $t=9.8$, $p<0.001$. Mean respiratory rate decreased significantly from 34 (SD 8) to 30 (SD 8), $t=10.2$, $p<0.001$. Most massage sessions (92.8%) elicited positive behaviour to the massage, e.g. the child fell asleep, calmed or asked to continue. Nine patients (7.2%) with a median age of 15 months who underwent a single massage session did not show positive behaviour but cried, wriggled or were distressed.

CONCLUSIONS:

Aromatherapy massage seems to be a helpful nonpharmacological approach to reduce hospitalized paediatric burn patients' distress. Future studies with better research designs and validated outcome measures should confirm our findings.

Explore (NY). 2007 Jul-Aug;3(4):378-85.

The effect of gender and ethnicity on children's attitudes and preferences for essential oils: a pilot study.

Abstract

CONTEXT:

Aromatherapy is frequently recommended for children but children's preferences for specific essential oils are not well documented.

OBJECTIVE:

To measure preferences of school aged children for essential oils based on gender and ethnicity.

DESIGN:

Descriptive study measuring children's responses to and preferences for selected essential oils.

SETTING:

Pediatric integrative medicine clinic in a Midwestern children's hospital.

PARTICIPANTS:

Healthy school-age children of Latino (N = 39) and non-Latino Caucasian (NLC) (N = 48) ethnicity, 41.7% of the NLC group and 59.0% of the Latino Group were males.

INTERVENTION:

Participants smelled single essential oils, answered three forced choice questions and one open ended question, order of exposure was varied.

OUTCOME MEASURES:

Participants evaluated each scent's effect on mood and energy, stated their preferences, indicated if scents evoked particular thoughts and selected a favorite essential oil.

RESULTS:

Females were more likely to feel happy when smelling sweet orange ($p = .043$). Female Latinos were more likely than NLC females to find sweet orange calming (56.2% vs. 18.5%). Male Latinos were more likely (65.2%) to describe peppermint as "energetic" than male NLC (30%). Children chose an essential oil that they rated as "making them feel happy" (72.6%) and/or as "liking the most" (64.3%). Other results that approached statistical significance were: females felt more energetic with spearmint ($p = .055$). Latinos preferred spearmint over NLC ($p = .075$), and all males felt more energetic when smelling ginger ($p = .091$). Ginger and lavender were the least preferred. Results indicate that children have specific essential oil scent preferences. There is trend toward differences based on gender and ethnicity.

Evid Based Complement Alternat Med. 2006 Sep;3(3):373-7. Epub 2006 Apr 19.

Evaluating effects of aromatherapy massage on sleep in children with autism: a pilot study.

Abstract

Previous studies have found beneficial effects of aromatherapy massage for agitation in people with dementia, for pain relief and for poor sleep. Children with autism often have sleep difficulties, and it was thought that aromatherapy massage might enable more rapid sleep onset, less sleep disruption and longer sleep duration. Twelve children with autism and learning difficulties (2 girls and 10 boys aged between 12 years 2 months to 15 years 7 months) in a residential school participated in a within subjects repeated measures design: 3 nights when the children were given aromatherapy massage with lavender oil were compared with 14 nights when it was not given. The children were checked every 30 min throughout the night to determine the time taken for the children to settle to sleep, the number of awakenings and the sleep duration. One boy's data were not analyzed owing to lengthy absence. Repeated measures analysis revealed no differences in any of the sleep measures between the nights when the children were given aromatherapy massage and nights when the children were not given aromatherapy massage. The results suggest that the use of aromatherapy massage

with lavender oil has no beneficial effect on the sleep patterns of children with autism attending a residential school. It is possible that there are greater effects in the home environment or with longer-term interventions.