ALLIED HEALTH

174 Reduction in Allergic Rhinitis Index by Decreasing Aeroallergens and Malodor Causing Volatile Organic Compounds by Luna Air Purifiers Using Photo-Catalytic Oxidation (PCO) Technology

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Background: The quality of the environment within buildings is a topic of major importance for public health. Breathing pure and clean air allows us to think more clearly, sleep more soundly, and stay healthier. Studies show that we receive 56% of our energy from the air we breathe, more than from food and water combined. On average we breathe 37 pounds of air a day. It has been established that the use of negative ions in a purification system is an effective means of eradicating aerosolergens in room air.

Methods: The wall-mount, Inducts and Mobile Sanifier air purification units of Luna are designed to sanitize air, to kill surface mold, bacteria, and viruses in areas up to 26,000 cubic feet. Samples were collected from the clinic rooms to analyze the VOC concentrations using the Luna air purifiers to detect the efficiency in reducing the VOCs in the indoor air. We analyzed the aeroallergens and VOCs prevalent in the indoor air in the clinics at the Coulter Animal Hospital, Amarillo, Texas. The data were correlated to the inhalant allergy index before and after running air purifiers that use PCO technology.

Results: Samples from the clinic rooms to analyze the VOC concentrations using the Luna air purifiers to detect the efficiency in reducing the VOCs in the indoor air. The SKC Pocket Pump and thermal desorption tubes were used to obtain the samples from the indoor air. Pumps were set on 200 mL/min as air flow to estimate the concentration of Acetic acid, Isobutyric acid, Butyric acid, Isovaleric acid, Valeric acid, Hexanoic acid, Phenol, p-cresol, 4-ethyl, 2-amino, Indole, and Skatole. All desorption tube samples were analyzed using a Markes UNITY and Markes Ultra automated thermal desorber (ATD) and a Varian 3800/Saturn 2000 GC with a MS. Slides with double sticky tape were exposed to room air stained with 2% safranin and were observed using a BX-40 Olympus microscope with DP-70 and Image Pro Plus software.

Conclusions: The data were correlated with the aeroallergen index and the frequency of inhalant allergy cases that showed reduction in allergic rhinitis index on using air purifiers.

175 The Missing Link!! Specialist Nurse-Led Education for Parents of Children With Atopic Eczema

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Background: Australia’s rate of children with food allergy is still on an upward trend. In infants the earliest manifestation is usually atopic eczema. Australian Bureau of Statistics National Health Survey (ABNHS, 2007–2008, p.305) reported hayfever, allergic rhinitis and asthma in the top 10 most commonly reported long-term conditions for children and young people. Early effective management of eczema is essential. Australia’s medical model means long wait for allergy appointments with a specialist, limiting review appointment availability. Following diagnosis of atopic eczema and treatment recommendations by a clinical immunologist/allergist or dermatologist, parents report having many unanswered questions -contributing to anxiety and confusion. They feel overwhelmed that eczema is incurable and long-term management and constant vigilance is required. Many feel a lack of support and despair. Education, demonstration and support by a nurse specialist in eczema management at a Children’s hospital in Adelaide has improved outcomes and reduced the psychosocial burden of the condition. Parents and children receive 30 minutes explanation, demonstration of required treatments and an individualised, written eczema action/care plan. The education sessions use a conceptual framework based on Social Cognitive Theory where active participation, goal setting and forward planning enhance understanding assisting the long-term behavioural changes needed to master eczema management effectively. The families are reviewed by the nurse several weeks later to review progress and answer questions that have arisen over the preceding weeks. The education sessions are tailored to the individual family needs, encourage self-management and aim for increased confidence to self-regulate the condition as it waxes and wanes.

Methods: Twenty-two families in a novel clinic at Children’s Youth and Women’s Health Service, Adelaide undertook a pre-post intervention questionnaire surveys.

Results: All 22 families (2009) reported that the service had assisted their understanding, enhanced management and compliance and called for expansion as soon as possible. A research project is scheduled in the near future to expand the service within the recommendations of the South Australian Chronic Diseases Action Plan 2009-2018.

Conclusions: Specialist nurse’s support assists parents to gain the required practical skills, understanding increased confidence and compliance with their recommended treatments.

176 Sublingual Immunotherapy for Grass Pollen Allergy in Children: A Systematic Review and Meta-Analysis

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Background: Sublingual immunotherapy (SLIT) using grass pollen extracts is an attractive treatment option compared with subcutaneous immunotherapy (SCIT) for children suffering with the symptoms of seasonal allergic rhinoconjunctivitis, with or without asthma. However, evidence for the efficacy of SLIT in children remains unclear. The objective was to undertake a systematic review of the available literature to identify high quality paediatric studies of SLIT for grass pollen allergy to assess the safety and benefits of SLIT compared with standard medication alone.

Methods: MEDLINE, EMBASE, CINAHL, NHSEED, DARE and Cochrane were searched from 1st Jan 2000 to June 2010. A pre-specified inclusion criteria was used to select studies, which were assessed for the risk of bias using the Jadad scale. The outcomes of interest were data from the studies including the reduction of nasal, eye and chest symptoms, use of symptom relieving medication and safety.

Results: Nine studies met the inclusion criteria. A narrative synthesis on the safety of SLIT found a high incidence of mild, adverse events. Outcomes were pooled using Rev Man 5 and the random effects model. Inter-study heterogeneity was measured using the I² statistic and was <70% in all meta-analyses. The reduction of total allergic rhinoconjunctivitis symptom scores indicated a small highly significant reduction with non-significant heterogeneity. (SMD –0.24, 95% CI 0.38 to 0.11 P = 0.0005), (I² 15% P = 0.32). The reduction in total relief medication use scores compared to placebo was non-significant. (SMD-0.25 CI -0.50, 0.01, P = 0.06). I² 67% (P = 0.006).

Conclusions: SLIT has a small benefit on symptoms but does not demonstrate a significant reduction in medication use. This justifies current SLIT use in paediatric allergy in the UK where availability is limited to children who remain symptomatic despite having proven concordance using...
177

Effect of EPA-DHA Supplementation on Forced Expiratory Volume in One Second (FEV1) and Triglycerides in Obese Adolescents With Hypertriglyceridemia

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Background: Evaluate the effect of supplementation of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) in FEV1 and triglyceride levels in obese adolescents.

Methods: Single blinded, parallel, clinical trial in 2 groups of adolescents supplemented with an intake of 3 g/dm of EPA-DHA versus 3 g of genetin for 3 months. We included adolescents with exogenous obesity with Body Mass Index (BMI) CDC > 95%. All patients underwent anthropometry, lipid profile and spirometry at baseline and study end. They were divided into 2 groups: G1: EPA-DHE obese and G2: Genetin obese. Samples analyzed by T Student (paired and independent).

Results: Adolescents were recruited with hypertriglyceridemia > 150 mg/dl, female 45.5%, male 54.5% mean and SD 12 ± 1.3 years. There were 34 patients in G1 and G2: 40 patients. The initial values averages the baseline IC 95% FEV1 G1 102.27 (106.06–98.48), G2 102.18 (106.12–98.26), Tiffaneau Index G1: 0.87 (0.90–0.84), G2 0.85 (0.83–0.88) Triglycerides G1 221.71 (246.10–197.32), G2 190.91 (206.90–174.92), Cholesterol G1 169.29 (179.35–159.23), G2 175.09 (169.90–144.28), HDL G1 32.96 (35.58–30.36), G2 33.85 (36.55–31.06). After 3 months, FEV1 G1 100.39 (104.99–95.79), G2 100.80 (105.88–95.74), Tiffaneau Index G1 0.83 (0.85–0.81), G2 0.86 (0.86–0.83) Triglycerides G1 101.00 (117.64–84.36), G2 127.09 (149.87–104.31), Cholesterol G1 169.88 (181.70–158.06), G2 163.32 (176.00–148.64), HDL G1 35.95 (40.25–31.66), G2 35.81 (38.93–32.71). Supplementation with EPA-DHA and genetin for 3 months in triglyceride basal levels had only one significant value (P < 0.05), without a significant in FEV1.

Conclusions: Supplementation with EPA-DHA and genetin for 3 months is helpful for reducing basal levels of triglycerides.

178

A Pilot Study of Caregiver’s Recall of Their Child’s Skin Test Results and Environmental Remediation Education

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Background: Allergic asthma is common in urban minorities and evidence suggests that environmental remediation is an effective management strategy. However, remediation requires complex interventions. The purpose of this pilot study, therefore, was to examine caregiver’s recall of their child’s skin test results and the accuracy of planned remediation ~4 months after testing.

Methods: A Q-sort was used to determine caregiver’s knowledge of the appropriate remediation for their child’s allergic status. Using this method, caregivers sorted cards into piles: important for my child’s asthma, not important or unsure. Each of the 52 cards represented one intervention for a common indoor allergen. Three of the 52 cards were specific to cat allergen, 3 for dog, 10 for mold and 23 for dustmite. Unlike typical Q-sorts, these cards used pictures and low-literary language. Caregivers were then instructed to place each card on a continuum of highest to lowest priority. At the conclusion of the Q-sort, caregivers received feedback on the accuracy of their prioritization in the context of their child’s skin test results. Acceptability of this technique was assessed using qualitative interviews.

Results: Five African American women (mean age 33.6; 80% receiving public assistance) caring for 5 children (4 males; mean age 7.8) were enrolled. Caregivers recalled 4.6 positive results per child; only 4.2 positive results per child were noted. However, no caregiver recall of skin test results was concordant with actual results. Caregiver’s accuracy in identifying trigger reduction strategies specific to their child’s skin test results ranged from 33 to 100% for cat, 40 to 70% for molds, 70 to 87% for dust mites, and 100% for the 1 dog allergic child. No standard battery was performed; rather each test was specific to the child’s history. Qualitative interviews showed Q-sort to be an acceptable way to learn about remediation.

Conclusions: Caregivers do not accurately recall skin test results and this may, in part, impede their ability to implement appropriate interventions. A low literacy game-style approach is a novel strategy to provide complex teaching that warrants further investigation.

179

Evaluation and Comparison of Lung Function by Plethysmography in Adolescents With Morbid Obesity, not Morbid Obesity and Healthy Eutrrophic Children

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Background: The objective was to measure and compare lung function by plethysmography in young healthy children, obese and morbidly obese.

Methods: Cross-sectional, prospective study in 150 adolescents from 11 to 17 years old, grouped according to their body mass index (BMI): group 1 (G1) healthy eutrrophic (BMI percentile 10–84 of the boards of the CDC) Group 2 (G2) not morbidly obese (BMI 85–98) and group 3 (G3), morbidly obese (BMI> 99). Anthropometry was performed and plethysmography. Statistics: mean, standard deviation (SD), confidence interval 95%, CI 95%. ANOVA post hoc analysis.

Results: The mean age was 13.7 years, 46.7% women and 53.3% men. G1 had 40 children, G2 had 67 and G3 had 43. Mean values and CI 95% of vital test results and the accuracy of planned remediation ~4 months after testing.

Methods: A Q-sort was used to determine caregiver’s knowledge of the appropriate remediation for their child’s allergic status. Using this method, caregivers sorted cards into piles: important for my child’s asthma, not important or unsure. Each of the 52 cards represented one intervention for a common indoor allergen. Three of the 52 cards were specific to cat allergen, 3 for dog, 10 for mold and 23 for dustmite. Unlike typical Q-sorts, these cards used pictures and low-literary language. Caregivers were then instructed to place each card on a continuum of highest to lowest priority. At the conclusion of the Q-sort, caregivers received feedback on the accuracy of their prioritization in the context of their child’s skin test results. Acceptability of this technique was assessed using qualitative interviews.

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Conclusions: Caregivers do not accurately recall skin test results and this may, in part, impede their ability to implement appropriate interventions. A low literacy game-style approach is a novel strategy to provide complex teaching that warrants further investigation.

180

Selecting Primal Therapy Appropriate for the Type of Pollinosis—Topic-J Study

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Background: In Japanese Guideline for Allergic Rhinitis, drugs for treatment after the start of pollen dispersal are recommended for each type of pollinosis, but drugs for primal therapy are not categorized by the type of pollinosis. We