

## Research Media Watch:

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### 1) Nebulised hypertonic saline (3 %) among children with mild to moderately severe bronchiolitis - a double blind randomized controlled trial

Aayush Khanal, Arun Sharma, Srijana Basnet, Pushpa Raj Sharma and Fakir Chandra Gami  
 BMC Pediatrics 2015;15:115

#### Abstract:

To Assess the efficacy of nebulised hypertonic saline (HS) (3 %) among children with mild to moderately severe bronchiolitis.

#### Methods:

Infants aged 6 weeks to 24 months, with a first episode of wheezing and Clinical Severity scores (Arch Dis Child 67:289-93, 1992) between 1 and 8, were enrolled over 4 months duration. Those with severe disease, co-morbidities, prior wheezing, recent bronchodilator and steroid use were excluded. Patients were randomized in a double-blind fashion, to receive two doses of nebulized 3 % HS (Group 1) or 0.9 % normal saline (Group 2) with 1.5 mg of L-Epineprine, delivered 30 min apart. Parents were contacted at 24 h and 7 days. The principal outcome measure was the mean change in clinical severity score at the end of 2 h of observation.

#### Results:

A total of 100 infants (mean age 9.6 months, range 2-23 months; 61 % males) were enrolled. Patients in both groups had mild to moderately severe disease at presentation. On an intention-to-treat basis,

the infants in the HS group had a significant reduction ( $3.57 \pm 1.41$ ) in the mean clinical severity score compared to those in the NS group ( $2.26 \pm 1.15$ ); [ $p < 0.001$ ; CI: 0.78-1.82]. More children in the HS group ( $n = 35/50$ ; 70.0 %) were eligible for ER/OPD discharge at the end of 2 h than those in the NS group ( $n = 15/50$ ; 30 %;  $p < 0.001$ ), and less likely to need a hospital re-visit ( $n = 5/50$ ; 10.0 %) in the next 24 h as compared to the NS group ( $n = 15/50$ , 30.0 %;  $p < 0.001$ ). The treatment was well tolerated, with no adverse effects.

#### Conclusions:

Nebulised 3 % HS is effective, safe and superior to normal saline for outpatient management of infants with mild to moderately severe viral bronchiolitis in improving Clinical Severity Scores, facilitating early Out-Patient Department discharge and preventing hospital re-visits and admissions in the 24 h of presentation.

#### Comment:

3%HS has revolutionize the treatment of bronchiolitis .It should be consider as the first line of treatment in this scenario.

### 2) Correlation Between Serum 25-Hydroxyvitamin D and Virulence Genes of Staphylococcus aureus Isolates Colonizing Children with Atopic Dermatitis

Yolanda Gilaberte , Rosalía Sanmartín , Carmen Aspiroz M.D., Ph.D, et. Al.  
 Pediatric Dermatology Volum 32, Issue 4, pages 506-513, July / August 2015

#### Abstract :

The skin of children with atopic dermatitis (AD) is colonized with Staphylococcus aureus more frequently than that of their peers. We investigated the prevalence of skin and nares colonization by S.

aureus in children with AD, the virulence genes of the isolates, and their association with allergy, AD severity, and serum vitamin D (25(OH)D). This was an observational, cross-sectional study in a sample of children diagnosed with AD in two settings in Spain. The samples were collected in 2012. Swabs from

affected skin and nares were taken for microbiologic culture. The prevalence of *S. aureus* and presence of 17 staphylococcal virulence genes were studied using polymerase chain reaction. A total of 114 patients with a mean age of  $5.7 \pm 4.1$  (range 3 mos to 14 yrs) were included in the study. Swabs were taken from the skin of 113 individuals with AD and from the nares of 85; 28.3% had *S. aureus* on the skin, which was significantly associated with positive allergen-specific immunoglobulin E antibodies and higher Scoring Atopic Dermatitis (SCORAD) scores in the multivariate analysis. The presence of virulence factors *tsst-1*, *eta*, *cna*, *aur*, and *sec* in cutaneous *S. aureus* isolates was associated with lower serum

levels of 25(OH)D. *S. aureus* on nasal swabs correlated with its presence on the skin and was associated with lower 25(OH)D levels. In conclusion, *S. aureus* colonization is associated with allergy and severity in AD, whereas certain virulence genes are associated with lower serum 25(OH)D levels.

**Comment :**

Eczema associated with low level of vit D. Eczema & low level of vit D more likely to get infection on their skin. More clinical trials need to be done to determine if vit D is a effective treatment for it.

**3) Dietary Intake of Children Attending Full-Time Child Care: What Are They Eating Away from the Child-Care Center?**

Shannon M. Robson, Jane C. Khoury, Heidi J. Kalkwarf, Kristen Copeland

**Abstract:.**

The Academy of Nutrition and Dietetics recommends children attending full-time child care obtain one-half to two-thirds of daily nutrient needs during their time at the child-care center, leaving one-third to one-half to be consumed away from the center. Although there are guidelines to optimize dietary intake of children attending child care, little is known about what these children consume away from the center.

**Objective:**To describe the dietary intake away from the child-care center for preschool-aged children relative to the expected one-third to one-half proportion of recommended intake, and to examine the relationships between energy intake away from the center with weight status, food group consumption, and low-income status.

**Design:**Cross-sectional study conducted between November 2009 and January 2011.

**Participants/setting :** Participants (n=339) attended 30 randomly selected, licensed, full-time child-care centers in Hamilton County, OH.

Main outcome measures :Child weight status and dietary intake (food/beverages consumed outside the child-care setting from the time of pickup from the

center to the child's bedtime), including energy and servings of fruits, vegetables, milk, 100% juice, sugar-sweetened beverages, and snack foods.

**Statistical analyses performed :** Generalized linear mixed models were used to examine independent associations of food group servings and low-income status to energy intake and energy intake to child weight status.

**Results:** The mean energy intake consumed away from the center ( $685 \pm 17$  kcal) was more than the recommended target range (433 to 650 kcal). Intakes of fruits, vegetables, and milk were less than recommended. Food group servings and overweight/obesity status were positively associated with energy intake while away from the center.

**Conclusions:**

Preschool-aged children consume more energy and less fruits, vegetables, and milk outside of child-care centers than recommended. Overweight status was associated with children's dietary intake after leaving the child-care center. It may be beneficial to include parents in obesity prevention efforts targeting children attending child-care centers.

**Comment :**

Balance healthy diet is the key of good health  
 .Obesity is on rise due to increase consumption of

energy rich food. Family education and their complete involvement is must to fight this epidemic .

**4) Bubble continuous positive airway pressure for children with severe pneumonia and hypoxaemia in Bangladesh: an open, randomised controlled trial**

Mohammad J Chisti, Mohammed A Salam, Jonathan H Smith, et al  
 Published Online: 18 August 2015 Lancet Pediatrics

**Abstract :**

**Background:**In developing countries, mortality in children with very severe pneumonia is high, even with the provision of appropriate antibiotics, standard oxygen therapy, and other supportive care. We assessed whether oxygen therapy delivered by bubble continuous positive airway pressure (CPAP) improved outcomes compared with standard low-flow and high-flow oxygen therapies.

**Methods:**

This open, randomised, controlled trial took place in Dhaka Hospital of the International Centre for Diarrhoeal Disease Research, Bangladesh. We randomly assigned children younger than 5 years with severe pneumonia and hypoxaemia to receive oxygen therapy by either bubble CPAP (5 L/min starting at a CPAP level of 5 cm H<sub>2</sub>O), standard low-flow nasal cannula (2 L/min), or high-flow nasal cannula (2 L/kg per min up to the maximum of 12 L/min). Randomisation was done with use of the permuted block methods (block size of 15 patients) and Fisher and Yates tables of random permutations. The primary outcome was treatment failure (ie, clinical failure, intubation and mechanical ventilation, death, or termination of hospital stay against medical advice) after more than 1 h of treatment. Primary and safety analyses were by intention to treat. We did two interim analyses and stopped the trial after the second interim analysis on Aug 3, 2013, as directed by the data safety and monitoring board. This trial is registered at ClinicalTrials.gov.number NCT01396759.

**Findings:**

Between Aug 4, 2011, and July 17, 2013, 225 eligible children were recruited. We randomly allocated 79 (35%) children to receive oxygen therapy by bubble CPAP, 67 (30%) to low-flow oxygen therapy, and 79 (35%) to high-flow oxygen therapy. Treatment failed for 31 (14%) children, of whom five (6%) had received bubble CPAP, 16 (24%) had received low-flow oxygen therapy, and ten (13%) had received high-flow oxygen therapy. Significantly fewer children in the bubble CPAP group had treatment failure than in the low-flow oxygen therapy group (relative risk [RR] 0·27, 99·7% CI 0·07–0·99; p=0·0026). No difference in treatment failure was noted between patients in the bubble CPAP and those in the high-flow oxygen therapy group (RR 0·50, 99·7% 0·11–2·29; p=0·175). 23 (10%) children died. Three (4%) children died in the bubble CPAP group, ten (15%) children died in the low-flow oxygen therapy group, and ten (13%) children died in the high-flow oxygen therapy group. Children who received oxygen by bubble CPAP had significantly lower rates of death than the children who received oxygen by low-flow oxygen therapy (RR 0·25, 95% CI 0·07–0·89; p=0·022).

**Interpretation :**

Oxygen therapy delivered by bubble CPAP improved outcomes in Bangladeshi children with very severe pneumonia and hypoxaemia compared with standard low-flow oxygen therapy. Use of bubble CPAP oxygen therapy could have a large effect in hospitals in developing countries where the only respiratory support for severe childhood pneumonia and hypoxaemia is low-flow oxygen

therapy. The trial was stopped early because of higher mortality in the low-flow oxygen group than in the bubble CPAP group, and we acknowledge that the early cessation of the trial reduces the certainty of the findings. Further research is needed to test the feasibility of scaling up bubble CPAP in district hospitals and to improve bubble CPAP delivery technology.

**Comment :**

The study could not be completed and had to be

ended prematurely as directed by the data safety and monitoring board due to high mortality in babies in the non-CPAP group. So the study is not adequately powered to evaluate the primary outcomes. But, non-invasive respiratory support, like CPAP with its ease of delivery, and less invasive nature definitely can help peripheral centres to manage their babies better, and decrease the number of referrals to higher centre. A well-structured study in this regard will be needed to recommend its use on regular basis.

### 5) Safety of Popular Herbal Supplements in Lactating Women

Marwa R. Amer, Gabriela C. Cipriano, Jineane V. Venci, Mona A. Gandhi  
 Journal of human lactation, Aug 2015

**Abstract:**

The increasing popularity and use of dietary supplements has required health care professionals to become more knowledgeable of their properties, interactions, and adverse effects. The objectives of this review were to evaluate the safety of popular dietary supplements in breastfeeding mothers and the effects on the infants. Nine of the most popular herbal dietary supplements were identified based on the 2011 US market report of the top 10 selling botanicals and the most frequently received inquiries by the Ruth A. Lawrence Lactation Study Center at the University of Rochester Medical Center. Relevant publications were identified through June 2014 using PubMed and EMBASE; tertiary references, including the Drugs and Lactation Database and Natural Medicine Comprehensive Database, were also reviewed. These herbals include black cohosh, cranberry, echinacea, evening primrose, garlic, ginseng, melatonin, milk thistle, and St John's wort. Studies varied greatly with regard to study design,

herbal intervention, and outcome measures. Findings suggested that dietary/herbal supplements have not been evaluated in high-quality clinical trials, and there is limited evidence supporting safety of use, particularly among lactating women. Therefore, it is essential for physicians to provide counseling for nursing mothers seeking information on dietary supplements, highlighting reliable safety profiles, inquiring about the potential benefits the patient is seeking, and assessing the patient's perception of this supplement during breastfeeding. More research and clinical trials are required in this area to guide the recommendations and expand our current knowledge of these products.

**Comment:**

Initiation and maintenance of breast feeding is a great challenge in modern world. Causes are many but lots of herbal preparations are available who claims to improve the lactation. As there are no control trails or detail research are done about these products one has to be very cautious before prescribing these medication .