



Perinatal-Pediatrics

Bulletin

Issue No. 2

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American Association
for Respiratory Care

Notes from the Chair

by Katie Sabato, MS, RRT

His heart is red and full of love

He cares for you so give him a hug

Keep him close when feeling blue

Feel the love he has for you!....

— from Beanie Baby Valentino's tag

Spring has sprung in California and we are hoping that the past months of unending showers will bring us lots of May flowers. The deadline for this issue of the Bulletin also “sprung” on me — right in the middle of my Spring vacation, so I am writing to you from the banks of the Connecticut River — thousands of miles from rainy California. However, my thoughts are still on the soggy winter just past, the kids we treated during it, and what we might do differently next time around. Specifically, I want to address the issue of Albuterol and bronchiolitis.

While it rained cats and dogs outside this winter, droves of infants with congested, snotty, rapid, wheezy breathing poured into our emergency room and, I'm sure, most ERs across the country. Their diagnosis? Bronchiolitis. Bronchiolitis is seasonal and often more prevalent in certain years. This year was a big one, and RCPs across the county were busy delivering buckets of the multipurpose treatment for anything that faintly resembles a wheeze. The treatment I am referring to? Albuterol. Before I get on my soapbox about the wonder drug, though, here are a few basic but informative facts from the literature concerning bronchiolitis:

- It affects infants between the ages of six months and two years.
- It is one of the major causes of hospital admissions in infants under

the age of one.

- RSV is the etiologic agent in the majority of cases (a common cold virus in you and I).

- In infants living in large cities it peaks at two months of age.

- In infants living in the country there are no peaks.

- It tends to be more severe in males.

- Initial severity can often be determined by the respiratory rate (rates greater than 60 breaths per minute are generally associated with a decrease in oxygen and carbon dioxide tension).

- It is most prevalent in previously uninfected infants attending day care.

- It has a strong association with subsequent development of asthma.

- **And last, but not least, just because it begins with the root-“bronchi” doesn't necessarily mean it should be treated with bronchodilators, specifically Albuterol.**

The role of Albuterol in the treatment of the bronchiolitic infant who wheezes is controversial. There is little or no convincing scientific literature pointing to positive patient outcome (outcome being an improvement in gas exchange or a decrease in the number of hospital days) when Albuterol is utilized to treat wheezing in the bronchiolitic. Despite the limited data supporting

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the effectiveness of Albuterol, however, physicians continue to request, and RCPs continue to deliver, countless nebulized Albuterol treatments.

As a supervisor of a very busy pediatric center, I would like to believe that I am directing our resources appropriately and efficiently. I question the hours spent routinely delivering Albuterol to wheezy broncholitics. I know I am not alone in this thinking, as I have received many phone calls specifi-

cally addressing this issue.

A break in the weather over this issue finally came with the March issue of Pediatrics (Vol. 101, No.3) with the publication of a scientific paper titled The Use of Albuterol in Hospitalized Infants with Bronchiolitis. Although the study only looked at 52 patients, the group out of Maricopa Medical Center in Phoenix, AZ, concluded that nebulized Albuterol therapy does not appear to enhance recovery, or attenuate severity of illness, in infants hospitalized with acute, moderate bronchiolitis as evidenced by improvement in oxygen saturation, time to meet standard discharge criteria, or length of hospital stay.

I also would like to recall the abstract presented at the 1996 AARC national conference by my friends at Primary Children's Medical Center in Salt Lake City, UT. Their retrospective study concluded

that the cost of treating children with bronchiolitis may be reduced by discontinuing Albuterol in cases where children do not respond. A limited supply of additional supportive documents questioning the practice of routine administration of Albuterol to bronchiolitics also exists.

Additional research is warranted if we are to become more objective and efficient in the treatment of this prevalent disease. I would like to encourage further thoughts, observations, and insights on this controversial area on the our web page, including any alternatives emerging to the status quo. For example, at our medical center, we are beginning to see the administration of vaponephrine to treat respiratory distress in the bronchiolitic. I look forward to further discussion on this issue, both on the web and in upcoming Bulletins and research articles. ■

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Recent Publication on Guidelines for Pediatric Equipment and Supplies for Emergency Departments

by *Katie Sabato, MS, RRT*

Emergency rooms that are not equipped with appropriate medical equipment to treat all populations of patients can be devastating for everyone involved. Institutions that choose to offer services for children must be prepared. Unfortunately, guidelines to help smaller community, as well as large adult, facilities determine essential equipment have been lacking. To help alleviate that problem, I recently participated in a consensus study conducted by the National Emergency Medical Services for Children Resource Alliance and funded in part by a grant from the Maternal and Child Health Bureau.

Our committee of 13 people was selected from various national health organizations to develop a consensus on what constitutes minimum equipment and supplies to care for

pediatric patients. The consensus list that we developed was recently published in three medical journals, the February issue of *The Journal of Emergency Nursing*, the February issue of *Pediatric Emergency Care*, and the February issue of *Annals of Emergency Care*. The procedure was quite an eye opener for me. I never really appreciated the full spectrum of resources we have available to us.

There are a large number of smaller community emergency rooms that, although on a lesser scale, are subject to the same medical emergencies that we have in big facilities. This list was directed at these facilities, and we hope that our experiences and expertise can help prepare them when they are faced with the ever-challenging task of saving the life of a child. ■

FYI...

Measuring infants' response to bronchodilators

Do infants really respond to treatment with bronchodilators? Applying low-frequency forced oscillations in the respiratory system to assess airway resistance can measure the effects of inhaled bronchodilators in this population, say researchers from Perth, Australia. Their study of 13 infants with a history of recurrent wheeze and nine healthy controls found a fall in airway resistance after salbutamol administration but not after placebo when using this technique. (*Am J Respir Crit Care Med* 1998;157:574-579)

Bathing can be hazardous to preemies

Routine sponge baths can cause a jump in heart rate, increase in cardiac oxygen demand, and decrease in oxygen saturation in premature infants, say researchers from the University of Alberta in Canada. When they monitored 14 preemies before, during, and after sponge baths in the NICU, they found that heart rate and oxygen demand were both elevated during and after bathing. Nine of the infants required increased concentrations of ambient oxygen, and a correlation between physiological stress responses and behavior such as thrashing and crying was also noted. Although most of the infants in the study had respiratory problems, none suffered from

neurological abnormalities. (*American Journal of Critical Care* 1998; 7:90-100)

Growth retardation due to steroids short-lived

Researchers who charted the growth of 50 asthmatic children on inhaled steroids both before beginning treatment and then every six weeks for 18 weeks found that most growth retardation due to the drug occurs in the initial weeks of treatment. The average rate of growth for the children before starting the medication was 0.140 mm/week. That dropped to 0.073 mm/week during the first six weeks but began a slow climb at week seven which, by week 18, had reached pre-treatment levels. The group believes their findings can help assuage fears that parents have about the effects that taking inhaled steroids on a regular basis may have on their children's growth. (*Arch Dis Child* 1998; 78:172-173)

ETS raises risk of lung diseases for kids

An analysis of the health records of 7,680 children ages two months through five years indicates that about half of all early childhood cases of asthma, chronic bronchitis, and wheeze are due to environmental tobacco smoke (ETS). Using data from the Third National Health and Nutrition Examination Survey, 1988-1994, the Agency for Health

Care Policy and Research found significant increases in the rates of these conditions in all children exposed to ETS, regardless of whether that exposure occurred from a mother who smoked while pregnant, a mother who smoked, or someone else in the household who smoked. Increases in chronic bronchitis and wheeze were noted in children between the ages of two months and two years, while asthma was more prevalent across the entire age group. Asthma severity, however, was not significantly affected by ETS exposure. (*Pediatrics* 1998; 101:e8)

Treadmill running, free running tests elicit comparable results

Spanish investigators have found that either a free running or treadmill running test may be used as a provocation test for exercise-induced asthma in children. When they compared the results of the two types of tests in 30 asthmatic kids and 30 non-asthmatics, they found that 73% of the children with asthma had positive treadmill results and 63.3% had positive free running results — a difference that was not statistically significant. They emphasize, however, that environmental conditions could impact these results. In the study, temperature, humidity, and exercise intensity were kept the same for both tests. (*Ann Allergy Asthma Immunol* 1998;80:232-236)

Specialty Practitioner of the Year: Request for Nominations

Don't forget to make your nominations for the Perinatal-Pediatric Specialty Practitioner of the Year. The winner of this important award will be determined by the Section Chair or a selection committee appointed by the chair, and will be

honored during the Awards Ceremony at the AARC Convention. Each nominee must be a member of the AARC and a member of the Section. Mail or FAX a short (500 words or less) essay outlining your nominee's qualifications to the

Section Chair at the address/number listed on page 2 of this issue. Be sure to include both your name, address, and phone number, along with that of your nominee. ■

Visit AARC on the Internet—<http://www.aarc.org>

Consultant Panel Update

by Mike Czervinske, RRT

The Perinatal Pediatric Section Consultant Panel now has almost 120 members and 700 listings. Section members who would like to

be on the panel but who do not find a suitable category for their specific interests should contact me at the address/numbers listed on page 2 of

this and every issue. Section members on the list are encouraged to check their listings for accuracy and contact me if changes are required.

Topics

(choose no more than 10)

- | | | |
|--|--|---|
| <input type="checkbox"/> Airway Management | <input type="checkbox"/> HFV, Oscillator | <input type="checkbox"/> Mixed Gas Administration, Nitric Oxide |
| <input type="checkbox"/> Anatomic Anomaly | <input type="checkbox"/> High Risk Delivery | <input type="checkbox"/> Nebulized Medication and MDI |
| <input type="checkbox"/> Apnea Management and Monitoring | <input type="checkbox"/> Home Care | <input type="checkbox"/> Nebulized Medication, Continuous |
| <input type="checkbox"/> Asthma | <input type="checkbox"/> Infectious Diseases | <input type="checkbox"/> Neonatal Life Support |
| <input type="checkbox"/> Blood Gases | <input type="checkbox"/> Invasive Monitoring & A-line Management, Administration | <input type="checkbox"/> Networking, Professional |
| <input type="checkbox"/> Bronchial Hygiene | <input type="checkbox"/> Management, Patient Focused Care | <input type="checkbox"/> Noninvasive Monitoring |
| <input type="checkbox"/> Bronchial Hygiene, Vest | <input type="checkbox"/> Management, Productivity | <input type="checkbox"/> Outpatient Clinic |
| <input type="checkbox"/> Bronchoscopy | <input type="checkbox"/> Management, Protocols | <input type="checkbox"/> Oxygen Administration |
| <input type="checkbox"/> Calorimetry | <input type="checkbox"/> Management, Quality Improvement/Assessment | <input type="checkbox"/> Pediatric Life Support |
| <input type="checkbox"/> Cardiology | <input type="checkbox"/> Mechanical Ventilation, Monitoring | <input type="checkbox"/> Pharmacology, Neonatal |
| <input type="checkbox"/> CPAP | <input type="checkbox"/> Mechanical Ventilation, Neonatal | <input type="checkbox"/> Polysomnography |
| <input type="checkbox"/> Critical Care, Pediatric | <input type="checkbox"/> Mechanical Ventilation, PSV | <input type="checkbox"/> Pulmonary Function, Infant |
| <input type="checkbox"/> Critical Care, Perinatal | <input type="checkbox"/> Mechanical Ventilation, Pediatric | <input type="checkbox"/> Radiologic Topics |
| <input type="checkbox"/> Cystic Fibrosis | <input type="checkbox"/> Mechanical Ventilation, Synchronize | <input type="checkbox"/> Research and Publication |
| <input type="checkbox"/> Discharge Planning | <input type="checkbox"/> Mechanical Ventilation, Volume | <input type="checkbox"/> Ribavirin Administration |
| <input type="checkbox"/> ECMO | <input type="checkbox"/> Mechanical Ventilation, Work | <input type="checkbox"/> Surfactant Replacement |
| <input type="checkbox"/> Education, Patient/Family | <input type="checkbox"/> Mixed Gas Administration, Helium/Oxygen | <input type="checkbox"/> Tracheostomy Care |
| <input type="checkbox"/> Education, Staff | <input type="checkbox"/> Mixed Gas Administration, Hypoxic Mixtures | <input type="checkbox"/> Transport, Neonatal |
| <input type="checkbox"/> Education, Transport | | <input type="checkbox"/> Transport, Pediatric |
| <input type="checkbox"/> Growth/Development | | <input type="checkbox"/> Trauma |
| <input type="checkbox"/> HFV, Interrupter | | |
| <input type="checkbox"/> HFV, Jet | | |

Consultant Panel Form

New Panel Member Returning Panel Member with Changes

Please Drop My Name from the Panel

Name _____

Title _____

Institution _____

Complete Work or Home Address (up to 2 lines): _____

Phone(s) _____

FAX _____

e-mail _____