

PHARMASCRIP

NEWSLETTER OF THE MARYLAND SOCIETY OF HEALTH-SYSTEM PHARMACISTS

Presidential Perspective December 2000/January 2001 VOL. 23 NO. 9

Grazie Mille!

James A. Trovato, PharmD, BCOP
University of Maryland School of Pharmacy and
Greenebaum Cancer Center - University of Maryland Medicine

As my year of being President of MSHP comes to an end, I would like to recognize and extend grazie mille (many thanks) to our members who were responsible for another successful year. My role as President of MSHP has been both challenging and rewarding. I thank you again for the opportunity to serve MSHP in this capacity and look forward to many more years of being actively involved with MSHP.

I would like to thank the following members of the MSHP Board of Directors, committee chairpersons, and board liaisons for committing their time and energy to our society.

Chair Joe Botticelli
President-Elect Janet Mighty
Treasurer Annette M. Rowden
Secretary Morrell Delcher
Board Member Bob Feroli
Board Member Vince Pearson
Board Member Bonnie Pitt
Board Member Kathleen Truelove
MPhA Liaison Howard Schiff
Student Liaison Jeannie Rhee
Annual Seminar Committee Kathleen Truelove
Finance Committee Annette M. Rowden
Industrial Relations Committee
Lois Reynolds and Brett Steckman
Legal Affairs Committee David Moore
Membership Committee Vince Pearson
Monthly Programs Committee Larry Blandford
Nominating/Awards Committee Janet Mighty
Public Affairs Committee Shannon Benedetto
Publication Committee Jeffery E. Ensor

I especially would like to extend a personal thanks to Shannon Benedetto and Jeff Ensor for ensuring a very successful year for both the public affairs and publications committees, respectively. Shannon coordinated two public service awareness events for MSHP during National Poison Prevention Week and National Pharmacy Week. Thank you to Nancy Clark, Kim Compton, Louise Leach, Deborah Sarama, and Marci

Kiester who all participated in these events. Jeff went above and beyond his role as the editor of our newsletter. Jeff did a great job in making sure the newsletter was completed on time and the content was relevant to our members. Thanks to our co-editor, Ken Walters, for his valuable input and the editorial staff, Frank Briggs and Amy Holmes.

Finally, I would like to personally thank Kathleen Truelove for undertaking the leadership role in organizing and developing an excellent Annual Seminar program and Larry Blandford for another tremendous performance this past year as chair of our monthly programs committee. Both Kathleen and Larry have continued to demonstrate an ongoing commitment of their time and energy to MSHP.

Administrative Director Transition

As some of you already know, this past year was Judi Mellendick's last year of providing administrative services to MSHP. I would like to thank Judi, whose personal and unselfish dedication to MSHP and managerial expertise have been key to the smooth and efficient operations of our society. Judi has worked very hard in providing management and administrative services to MSHP over the past 10 years. On countless occasions, Judi has played the infamous "behind the scenes" role that has ensured the success of many monthly program meetings and annual seminars. Judi has truly been a great asset to our society and will be deeply missed. On behalf of the MSHP Board of Directors and our members I would like to wish Judi great success and happiness in her future endeavors.

At this time, I would like to welcome and introduce you to Anna Leonhardt, our new director of administrative services. Anna comes to use with a great wealth of skills and experience in

providing administrative services to a variety of pharmacy associations in Maryland and Virginia. Anna is most widely known for her current role as administrator for the Maryland Pharmacy Continuing Education Coordinating Council. Welcome Anna! I look forward to working with Anna in my upcoming role as Chair of the Board of Directors. Contact information for MSHP is as follows as of January 1, 2001.

Pediatrics Dosing Considerations - Part I

Jill Morgan, PharmD, BCPS
University of Maryland Medical System

Pediatric medication orders are more prone to errors because doses are not standard and math errors occur when calculating the dose. Often preparations are not available for children. Suspensions have to be compounded, tablets cut, and dilutions made so the amount is measurable. To make matters worse, children have less tolerance for error than adults. Some general things to consider when processing orders, include the following:

Medication orders should be written based on weight i.e. mg or mcg, not on volume. This helps to protect against medication errors. For example, a physician orders phenobarbital 0.5ml bid. This medication is available in multiple strengths. So which one is the right one? The answer can only be determined by rewriting the order in mg. There are some exceptions to this rule; vitamins, mct oil, eye products, and topical products can generally be ordered in a volume amount safely.

Furthermore, some combination products are dosed based on one part of a medication. For example, Bactrim (Sulfamethoxazole/Trimethoprim) is based on the trimethoprim component. However, this may vary from one institution to another so be cautious with orders involving combination products.

Another safety tip is to not use trailing zeros behind a decimal and always use a zero before a decimal. Example:

No 2.0 yes 2

No .2 yes 0.2

The zeros help to identify the decimal. If you have an order form or order copy that is difficult to read, this can help prevent a 10-fold error.

Weight: Pediatric doses are usually expressed as

Age related idiosyncratic reactions may also occur. Antihistamines and phenobarbital can cause sedation in adults, but in children we might see hyperactivity. Amphetamines are used to treat hyperactivity in children.

Administration guidelines:

IV: The syringe pump is the most accurate method of drug delivery. Avoid buretrols because they can cause incompatibilities and low drug concentrations. Piggybacks or intermate infusion devices may deliver too much free water to an infant or small child. This can cause hyponatremia, which can lead to seizures. Once the child is receiving standard "adult" doses or after they reach 10-12 years of age, piggybacks are no longer a problem.

PO: Children can be very uncooperative when it comes to taking medication. Also, many of the liquid preparations are very unpalatable. Dispense the preparation that has the smallest volume. If a medication is not available as a suspension, refer to resources such as Micromedex or the Pediatric Dosage Handbook for suspension formulas. Consider adding the medication to food or adding flavors to improve ease of administration and patient compliance.

It is not uncommon for a sick child to vomit up a dose. If this occurs within 30 minutes, repeat the dose. If more time has passed, check how long it takes for the dose to be absorbed and use your clinical judgement.

When measuring oral liquid dosages, it is important not to use household spoons or measuring devices as these are very inaccurate. Use a calibrated measuring device such as a medication oral syringe. Liquids should be given against the side of the mouth to prevent choking.

mg/kg/day or mg/kg/dose in addition to the specific dose ordered. Be sure to verify the calculation as well as the recommended dose in a pediatric dosing book.

Age: Pharmacokinetic and pharmacodynamic parameters will change as the child grows. For many drugs, the dose/kg/day and the frequency of the dosing interval will vary depending on the child's age. Some examples for this include phenytoin and theophylline. There also has to be a good understanding about different age groups. Gestational age is the time from conception until birth. Full term babies are born 37 to 42 weeks gestational age. A baby is premature if born < 37 weeks gestation. Then a baby is a neonate for the first 30 days of life and then an infant until the age of 1 year. From 1 to 2 years, the child is classified as a toddler and then makes it to the status of "child" at age 3. He continues in this classification until the age of 12 when the transition to adolescence begins.

Disease states: Certain disease states can effect the daily dosing of medication and this can be due to pharmacokinetic and pharmacodynamic differences. For example, children with cystic fibrosis have an increased clearance for many antibiotics and therefore require higher doses or more frequent dosing.

Therapeutic concentrations may vary based on the disease state. For example, target serum concentrations of theophylline are 5-12 mcg/ml for apnea of prematurity and 10 -20 mcg/ml in asthmatics.

Once the child is about 7 years old, tablets can be given. Chewable tablets can be given to a younger child. If swallowing a tablet is a problem, check to see if the tablet can be crushed and then add it to applesauce, Jell-O, or ice cream to mask the taste.

IM: Infants have small muscle mass, so IM injections have to be given in the lateral thigh instead of the arm or buttocks. Absorption is erratic due to decreased muscle contractions and some circulatory insufficiency so this route should be avoided.

Topical: Percutaneous absorption is increased due to decreased skin thickness, increased skin hydration, and increased surface area per weight. Toxicity with diphenhydramine cream, hydrocortisone cream, and rubbing alcohol have been reported. Also, an infant's skin is very sensitive. Many chemicals such as parabens and methyl salicylate can cause irritation and rash.

Dosing medications in pediatrics can be easy. Take your time and follow some of the hints discussed here. If the order looks funny, chances are it is. Question everything, a child's life may depend on it.

Editor's Note: Part 2 will appear in the next issue and will discuss Pharmacokinetics, Pharmacodynamics and drips.

Your Help is Needed

Janet Mighty
Johns Hopkins Hospital

CECC Representative

A MSHP representative is needed to be a committee member to the Maryland Pharmacy Continuing Education Coordinating Council. CECC committee members review CE programs that are submitted to CECC for credit by the ACPE. Committee meetings are held every 2-3 months. The term for a CECC committee member is 3 years. If you are interested, please contact Anna Leonhardt @ 410.465.9975.

Webpage Design

The MSHP website is being reviewed and evaluated. A task force is being developed for this purpose. If you have experience in webpage

Come To The Yards (Camden, that is)

Please keep your eye out for an invitation that should be coming in the mail shortly for the social event of the MSHP year scheduled for January 19, 2001 at Camden Yards. At this time, MSHP will welcome the new officers and board members for 2001. The highlight of the event, however, is the presentation of MSHP Awards. So don't forget to mark down this date and plan to join us at the ballyard.

design and would be interested in assisting with this project, please contact Anna Leonhardt @ 410.465.9975. Your comments or suggestions for the website are also needed.

New Leaders Elected

Janet Mighty
Johns Hopkins Hospital

The results of the election for the leaders for the 2001 year are as follows:

Secretary Vivian Rexroad

Board Member at Large Jeff Ensor

Board Member at Large

(Fill unexpired term of President Elect) Bruce Gordon

For ASHP Delegates:

David Arrington

Kathrin Kucharski

Bonnie Pitt

James Trovato

For MSHP Officers:

President Elect Robert Feroli

Treasurer Charles Twilley

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IMPORTANT

*Mark Down This **New**
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Return to the [MSHP home page](#)