Sports Safety: Nutrition, Psychology, Overuse, Contact, Strength, and Non-Contact

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Dr. Jordan Metzl is the guest editor for this Sports Medicine issue of Pediatric Annals. All pediatric practitioners have patients who are active in sports at various levels, and the topics covered in this issue are relevant to your practice. As a former sports editor and lifelong sports fan, I was unaware of the potential role for the sports psychologist in dealing with adolescent athletes and their issues. Similarly, I have apparently been oblivious to the role of optimal nutrition for the young athlete. Important information is also included in the articles on non-contact sports, contact sports, overuse injury, and strength training, each from the perspective of dealing with the child or adolescent athlete.

The beautiful French art stamp issued in 1970 (see page 260) is titled “Ballerina Curtseying with a Bouquet in her Hand,” by Edgar Degas. (The artist’s actual family name was de Gas or De Gas). I’ve chosen it to illustrate one kind of physical activity that adolescents may be involved in that can lead to physical and psychologic issues. Both the article on non-contact sports (including dance) by Amanda Weiss Kelly (see page 279) and the Nutrition article by Leslie Bonci (see page 300) provide illustrative cases that involve a teen ballet dancer’s issues.

Additionally, the 2008 souvenir sheet from the Comoros Islands in the Indian Ocean appears to honor six of the most famous physicians (“les Medecins”) in history. Actually, two of the six were not physicians. These include one non-physician, Humphry Davy.
(1778-1829), who is renowned for his major chemistry discoveries, becoming president of the Royal Society. He discovered sodium chlorine, potassium, calcium, magnesium, boron, and barium, among other landmark early chemistry accomplishments. Also shown are Robert Koch (1843-1910), who discovered the anthrax and tuberculosis bacilli; Emil Adolph von Behring (1854-1917), who discovered diphtheria and tetanus antitoxin; another non-physician, Louis Pasteur (1822-1895), who proved the germ theory (among his very many achievements); Frederick Banting (1891-1941), co-discoverer of insulin; and Alexander Fleming (1881-1955), who discovered penicillin.

doi: 10.3928/00904481-20100422-01

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This stamp of a Degas painting illustrates one kind of physical activity that adolescents may be involved in that can lead to physical and psychologic issues.
SOURCE OF BOTULINUM ANTITOXIN PRODUCTS NEEDS CLARIFYING

To the Editor:

We read with interest the case report of a Colorado infant with type F botulism [“A 3-day-old Boy with Acute Flaccid Paralysis.” Pediatr Ann. 2009;38(9):479-482]. The purpose of our letter is to clarify the sources of the two botulinum antitoxin products administered to the patient in this report.

Specific treatment for botulism patients in the United States is available only through consultation with public health authorities. BabyBIG (BIG-IV; Botulism Immune Globulin Intravenous [Human]) is approved for treatment of infant botulism types A and B. It is manufactured by the California Department of Health Services and is available on a 24-hour basis through the California Infant Botulism Treatment and Prevention Program (IBTPP).1 Botulinum antitoxins intended for use in older children and adults are equine-derived and are available on a 24-hour basis from the U.S. Centers for Disease Control and Prevention (CDC). The investigational heptavalent botulinum antitoxin (HBAT, Cangene Corporation) administered to the patient in this report is manufactured under contract with the U.S. Department of Health and Human Services (HHS) and provided through the CDC, not the Department of Defense (DoD), as reported in the article.

The Colorado patient was, to date, the only infant in the United States to receive Cangene’s HBAT. Use of HBAT in this scenario required implementation of an Emergency Investigational New Drug (IND) protocol after consultation among the treating clinicians, the Colorado Department of Public Health and Environment, CDC, IBTPP, the Food and Drug Administration (FDA), and Cangene Corporation.

Cangene’s HBAT product contains neutralizing antibody to the seven known botulinum toxin types (A-G) with the following nominal potency values: 7,500 U anti-A, 5,500 U anti-B, 5,000 U anti-C, 1,000 U anti-D, 8,500 U anti-E, 5,000 U anti-F, and 1,000 U anti-G.2 After pretreatment with diphenhydramine, steroids, and morphine, the infant received two doses of HBAT administered 8 hours apart, each dose containing 10% of the adult dose (1 adult dose = 1 vial) of antitoxin. Dosing for this patient was informed, in part from the experience of treating an Ohio infant with type F botulism in 1998 (before Cangene’s HBAT was developed). The Ohio infant received a different heptavalent antitoxin product that was produced by the University of Minnesota and provided by DoD in consultation with CDC and FDA. As a result of the experience with the Colorado infant, CDC has added specific guidance about pediatric dosing to its IND HBAT protocol.

On March 13, 2010, investigational HBAT replaced a previously licensed botulinum antitoxin AB (BAT-AB) and investigational monovalent type E antitoxin (BAT-E) as the primary antitoxin for treatment of noninfant botulism in the United States.2 Importantly, types A or B botulism account for 99% of infant botulism cases in the United States,3 and BabyBIG remains the mainstay of treatment for infants. HBAT may be considered on a case-by-case basis for infants with botulism types other than A or B.

Reporting of suspect botulism cases is mandatory in the United States, and clinicians should immediately notify their state public health department of suspect cases. After initial reporting to appropriate state authorities, 24-hour consultation and treatment services for suspect cases are available for infants through IBTPP (1-510-231-7600) and for older children and adults through the CDC Emergency Operations Center (1-770-488-7100).

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THE ROLE OF THE PHYSICIAN-EDUCATOR IS EVOLVING

To the Editor:

I just finished reading in its entirety the February 2010 issue [Pediatr Ann. 2010;39(2)], which was focused on medical education, how it relates specifically to the general community pediatrician, and how Dr. Larrie Greenberg and other office-based providers relate to the education of pediatric residents in our day and age. It is to the publication’s credit that the well-known and leading expert in the field of pediatric medical education, Dr. Larrie Greenberg, was invited to be Guest Editor of the issue. Dr. Greenberg’s contributing authors include a number of distinguished community pediatricians and/or program directors who are committed to extending pediatric training far beyond the hospital/service model of pediatric training and are innovatively committed into delving deeply into the numerous benefits of the “practitioner-preceptor” model as a way of broadening the learning experience of today’s pediatric residents.

After all, the majority of pediatric healthcare across our country today is provided by primary care community pediatricians. Why not include the qualified and motivated community-based pediatrician’s years of sage experience in complementing the education received from the academic, hospital-based pediatricians? Obviously, this is not an easy task but one I see as essential if we are to meet the healthcare needs of our country’s children in the years to come.

As I see the situation from my biased but experienced perspective as a community general pediatrician who is enthusiastically committed to pediatric education, I feel our local children’s hospital (as well as the majority of American Board of Pediatrics training programs with which I am quite familiar) clearly needs to move in this direction in the near future. However, it appears to me that our local institution is moving away from this concept and, in fact, in many respects, it seems to be clearly opposed to it. If a large percentage of pediatric residents continues to move into pediatric subspecialty care, community pediatrics as a specialty as many of us once knew will be unable to meet the nation’s burgeoning primary pediatric manpower needs and may, in fact, sadly cease to exist as a specialty entirely.

As Dr. Greenberg and his contributing authors have so eloquently pointed out in this outstanding issue of Pediatric Annals, there are innovative ways to allow motivated and skilled community pediatricians to participate in highly effective ways to participate effectively in broadening the education of pediatric residents. This not only includes how the community pediatrician “in the trenches” might approach a 3-month-old infant with a 103° fever, but it may include how continuity of patient care is effectively facilitated in an office setting, how difficult issues related to office finances, billing, triage, and human resources are handled, how effective time management in a busy pediatric office takes place, and how community pediatricians remain current with the “new medicine” that seems to be coming faster than many of us are able to assimilate it. And, not least importantly, is the very important question that Dr. Greenberg’s mentor, Dr. George Miller once posed, “How are we affecting people around us?”

Dr. Greenberg and his co-authors are to be commended for their willingness to address this topic which, as Dr. Greenberg points out, “is rarely visited.” However, to a large

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degree, as a national community of pediatricians who are committed to the health of our pediatric patients for decades to come, medical education needs to be discussed and dealt with in a timely, effective, and efficient manner.

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Dr. Greenberg responds:

Dr. Cater makes some very interesting and important points in his thoughtful letter on which leaders in pediatric resident education should reflect. I would like to summarize his major points and respond through my lenses, basically because there is not a lot of evidence to cite on these issues.

Dr. Cater voiced concern about the relationship between academic health centers (AHC) and the practicing pediatric community. This has been an ongoing issue in some regions since the late 1960s as the influence of National Institutes of Health (NIH) funding and the development of subspecialty training have pushed AHCs towards tertiary and quaternary care, diluting the role and influence of the general practicing pediatrician on medical student and residency training. Even within the general pediatric field, the evolution of the hospitalist has potentially increased the gap between the AHC and the practicing pediatrician (see article by Seelbach and Ottolini, page 84). Despite these problems in some centers, there are models of excellent working relationships between AHCs and practitioners from which we all could learn. There is, however, little documentation about these collaborative efforts.

Dr. Cater suggests that there is a need to demonstrate to trainees the importance of primary care as it is facilitated in community settings, and this effort should incorporate some exposure to community pediatricians. In 1974, I initiated a community rotation for PL-2s at the Children’s National Medical Center in Washington, D.C., in which participants experience 2 weeks in office practices, with the curriculum focusing on the business aspects of practice and the approach to patients where continuity is a cornerstone.1 This rotation may be one of the longest ongoing community experiences in the country and is valued by the residents, even those that opt for subspecialty career choices. What is unclear is how many pediatric training programs include this opportunity in the curriculum. A survey to assess the state of the art is long overdue.

Additionally, Dr. Cater points out the differences between the AHC and the community practices in the approach to patients, the most documented example being the febrile infant. This is not a right-wrong issue but emphasizes the strengths of an established practice in knowing parents and having the continuity of care so important in dealing with ill children. Residents need to not only see this model first hand but to recognize what makes it work.

He also addresses the community-based practitioner being involved in training our future physicians. Two of the articles in the February issue (see Nagappan, page 67, and Allevi, page 72) discussed how practitioners can commit to teaching in the office and do it effectively. The traditional model of teaching, as most of us have learned it, does not fit a busy office practice, perhaps dissuading practitioners from participating in office education. The scheduling of patients for all three pediatric training levels as recommended by the ABP should not overwhelm the practitioner. Using some of the tips, as suggested by Allevi and Nagappan, can make this experience gratifying for all: the trainee, the pediatrician, and the family/patient.

Finally, the ABP and other pediatric organizations are re-examining the current residency training model to determine if this fits with manpower needs of the R3P project (Residency Review and Redesign). The recommendations from that group will have a large effect on the curriculum and competencies deemed important for future pediatricians. Stay tuned.

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doi: 10.3928/00904481-20100422-03