Vol. 12 No. 11
May 1991

PEDIATRICS in Review

323 • Pediatrician and Pharmaceutical Manufacturer – Nazarian

325 • Celiac Disease – Murphy and Walker

333 • Osteosarcoma – Jaffe

344 • Health Counseling of Adolescents – Joffe and Radius

AMERICAN ACADEMY OF PEDIATRICS
CONTENTS

COMMENTARY

323 The Pediatrician and the Pharmaceutical Manufacturer
Lawrence F. Nazarian

ARTICLES

325 Celiac Disease
M. Stephen Murphy and W. Allan Walker

333 Osteosarcoma
Norman Jaffe

344 Health Counseling of Adolescents
Alain Joffe and Susan M. Radius

ABSTRACTS

330 Sepsis in Infants

331 Ibuprofen Overdose

332 Psychologic Preparation of Children for Hospitalization
and Surgery

343 Department of Corrections

351 Perilum Fistulas in Infants and Children
Commentary

The Pediatrician and the Pharmaceutical Manufacturer

In our second year of medical school, we students were offered a personalized black bag that was filled with medical equipment by a major pharmaceutical manufacturer. For some, this was a welcome bonanza, freeing precious dollars for other necessities. Others were indignant, viewing the offer as indecent payola for future favoritism. The protestation, “Are you going to allow yourself to be bought?” was countered by, “Is a bag of equipment all it takes to buy you?” The dilemma resurfaced when, as house officers, we had to decide whether to accept free formula for our babies from the friendly manufacturer’s representative or to stand firm in the face of lean financial circumstances, refuse the offer, and remain objective in our formula recommendations.

Perhaps some training programs discuss the relationship between the physician and manufacturers; I doubt if most do. However, those who make drugs, formula, and equipment are important players in our chosen work, and we must relate to them properly and fairly. A series of questions is presented here to stimulate discussion among residents and their mentors, and even among seasoned practitioners. I present some of the arguments but not many answers, because the answers must be determined by each of us individually.

“Who are these pharmaceutical people?” They are the people who discover, manufacture, and distribute the substances that have revolutionized health care. Without their products, many reading this journal would not be alive, and most of us would be limited severely in our abilities to care for our patients. They are also men and women of business, who are trying to make a good living for themselves and money for their stockholders. No doubt, one will find idealism in the industry. These are, after all, real people with values and with families of their own. No doubt, one will find greed in the industry. These are, after all, real people trying to get a bigger piece of the pie. One complication in recent years has been the acquisition of companies by larger conglomerates, shifting the power to make decisions away from those directly involved with the products.

“Are pharmaceuticals too expensive?” This thought recurs whenever we note the huge price tag on many medications. At the same time, we need to be reminded that years of intense research can end in the failure to come up with a new or useful product, not to mention the cost of liability or the expense of meeting regulations in this highly regulated industry. There does seem to be a lot of waste, however. Most physicians are turned off by glossy advertisements and the endless stream of gimmicks designed to catch our eyes. Could this expense be spared to reduce the cost to the patient? Are there ways in which physicians and manufacturers could put their heads together to make medicine more affordable, especially for the low income patient who is not on Medicaid?

“Should samples be accepted?” Anyone in practice very long appreciates the usefulness of a sample in the middle of the night and the ability of samples to ease the burden of a particular patient. The samples also foster a familiarity with the product, for better or worse. If a patient is started on a sample of a given brand of drug, is it ethical to finish the course with anything else? Does the acceptance of the samples involve any moral obligation? Or, are samples primarily unsolicited merchandise to which we owe only an acknowledgment of their existence?

“Should physicians prescribe by brand or generically?” This question involves several issues. Is the generic drug really bioequivalent? Is it really that much less expensive? Assuming that the generic drug is known to be of good quality and substantially cheaper, is it fair to those manufacturers who bear the brunt of research and development to prescribe it? Should one prescribe brand names for patients with prescription riders or good incomes and generic drugs for those less affluent? Denenberg is quoted and supported by Stickler in stating, “The patient is entitled to the lowest cost drugs possible consistent with quality requirements.”

“What kind of relationship should the physician have with the pharmaceutical representative?” The representative can provide information—solicited and unsolicited—on his or her products that many pediatricians find valuable, although the diligent physician uses such information to supplement data from more objective sources. The representative also can disrupt the flow of patient care and waste time delivering a canned speech that provides

Self-Evaluation Quiz—CME Credit

As an organization accredited for continuing medical education, the American Academy of Pediatrics certifies that completion of the self-evaluation quiz in this issue of Pediatrics in Review meets the criteria for two hours of credit in Category 1 of the Physician’s Recognition Award of the American Medical Association and PREP credit.

The questions for the self-evaluation quiz are located at the end of each article in this issue. Each question has a SINGLE BEST ANSWER. To obtain credit, record your answers on your quiz reply cards (which you received under separate cover), and return the cards to the Academy. On each card is space to answer the questions in six issues of the journal: CARD 1 for the July through December issues and CARD 2 for the January through June issues. To receive credit you must currently be enrolled in PREP or a subscriber to Pediatrics in Review—and we must receive both cards by August 31, 1991.

Send your cards to: Pediatrics in Review, American Academy of Pediatrics, 141 Northwest Point Blvd, PO Box 927, Elk Grove Village, IL 60009-0927.

The correct answers to the questions in this issue appear on the inside front cover.
Celiac Disease


Epidemiology


Littlewood JM, Crollick AJ, Richards IDG. Childhood coeliac disease is disappearing. Lancet 1980;2:1359


Etiology and Pathogenesis

Alpers DH. Another piece to the celiac puzzle. J Pediatr Gastroenterol Nutr. 1987;6:5-7


Investigation, Diagnosis, and Treatment


Presenting Features


Prognosis


Self-Evaluation Quiz

1. Characteristic histopathologic changes in celiac disease include all of the following except:
   A. Patchy involvement of the small intestine mucosa that is most pronounced distally.
   B. Increased numbers of plasma cells and lymphocytes in the lamina propria.
   C. Flattening of the intestinal villi.
   D. Increased rates of cell proliferation in the crypts.
   E. Poor definition of brush borders and loss of disaccharidase enzymes.

2. In celiac disease, the most likely factor causing injury to the small bowel epithelium is:
   A. A direct toxic effect of gliadin on the epithelial cell.
   B. Susceptibility inherited as an autosomal recessive trait.
   C. An abnormal immunologic response to gliadin.
   D. Prolonged breast-feeding.
   E. A metabolite of rice protein that is toxic to enterocytes.

3. Which of the following clinical manifestations is not characteristic of celiac disease?
   A. A one-year-old child with failure to thrive.
   B. A two-year-old child with normal growth and development but a history of recurrent diarrhea.
   C. Vomiting and carbohydrate intolerance in an 8-month-old infant.
   D. An adolescent with delayed puberty.
   E. A three-year-old child with milk intolerance.

4. The diagnosis of celiac disease is associated with all the following except:
   A. Iron deficiency anemia.
   B. Hypoalbuminemia.
   C. Impaired absorption of lactulose.
   D. Impaired absorption of α-xylene.
   E. Serum antigliadin and reticulin antibodies.

5. Successful management of celiac disease requires a diet that is free of:
   A. Rice and soya flours.
   B. Unprocessed vegetables.
   C. All traces of gluten.
   D. Large amounts of fats and fried foods.
   E. Barley and rye flours.

Sepsis in Infants


A prospective study was conducted to determine the frequency and distribution of bacterial and viral pathogens in infants hospitalized with suspected sepsis and to evaluate the potential of virus detection for improving patient treatment. A causative organism was detected in 157 (67%) of 233 previously healthy infants aged less than 3 months who had been hospitalized for suspected sepsis: 19 (8%) had bacterial infections, 135 (58%) had viral infections, and 3 (1%) had mixed viral-bacterial infections. Viral infections occurred in a seasonal pattern: enteroviruses were responsible for most of the hospitalizations during summer and fall (65 of 110, 63%), and respiratory syncytial and influenza A viruses were responsible for most of the infections during winter (44 of 81, 55%). In contrast, bacterial infections were not distributed seasonally. Virus was detected in 33% of the 138 infected infants within 24 hours, and in 64% within 3 days. These researchers conclude that viral infections are prevalent among infants hospitalized for suspected sepsis, and most viral infections can be detected early enough to influence patient treatment. (R.J.H.)

Self-Evaluation Quiz
6. Each of the following is a true statement regarding etiologic factors associated with osteosarcoma, except:
A. Peak incidence occurs between the ages of 15 and 25 years.
B. It is more common in tall teenage individuals and young adults.
C. Repeated trauma increases the risk for osteosarcoma.
D. Prior therapeutic radiation to bone and exposure to radioactive substances have been associated with osteosarcoma.
E. It has been associated with retinoblastoma.

7. Which of the following is a true statement concerning the clinical manifestations of osteosarcoma?
A. Few patients complain of pain and swelling at the tumor site.
B. 90% of the tumors occur in the metaphysis.
C. The majority of patients have swelling at the site without pain or increased temperature.
D. There is little limitation of movement of the joints proximal and distal to the tumor.
8. Each of the following is a benign neoplastic tumor except:
A. Langerhans cell histiocytosis.
B. Giant cell tumor.
C. Osteoblastoma.
D. Ewing sarcoma.
E. Chondromyxoid fibroma.

9. Treatment of osteosarcoma may include each of the following, except:
A. Amputation proximal to the tumor and chemotherapy.
B. Preoperative chemotherapy and later surgical excision.
C. Radiation and chemotherapy alone.
D. Postoperative chemotherapy.

10. The initial site of spread of metastases with osteosarcoma is:
A. Liver.
B. Kidney.
C. Brain.
D. Lung.
E. Spleen.

11. Recent evidence suggests which of the following prognostic factors to be beneficial?
A. Tumors of the extremities (compared to those of the trunk).
B. Telangiectatic form of osteosarcoma (compared with chondroblastic forms).
C. Sex of the patient.
D. Coexisting pathologic fracture.
E. Tumor size and amount of destruction induced by preoperative treatment.

DEPARTMENT OF CORRECTIONS
In the supplement to the March 1991 issue of Pediatrics in Review, "Guide for Record Review: Neonatal Hyperbilirubinemia," a line of type was omitted on page 5. The second and third sentences in the first complete paragraph on page 5 should read, "All infants with clinically significant hemolytic disease of the newborn should be treated with phototherapy in an effort to avoid the need for exchange transfusion. Likewise, all infants who have had exchange transfusions should be treated with phototherapy to prevent, if possible, the need for a second exchange transfusion."
Self-Evaluation Quiz

12. Which of the following is most likely to cause concern among young people of all stages of adolescence:
   A. Weight control.
   B. Sex.
   C. Dental problems.
   D. Sexually transmitted diseases.

13. The group of adolescents particularly vulnerable to adopting health-risking behaviors is:
   A. Early adolescents.
   B. Late-maturing boys.
   C. Early-maturing girls.
   D. Middle adolescents.

14. Which of the following is least likely to persuade adolescents to adopt preventive behaviors following counseling about smoking:
   A. Bad breath.
   B. Tooth stain.
   C. Lung cancer.
   D. Decreased athletic ability.

15. Risk taking may satisfy a number of developmental needs. A particular risk-taking behavior can enable the adolescent to develop a sense of each of the following except:
   A. Achievement and mastery.
   B. Adult status.
   C. Sexuality.
   D. Independence from peers.

16. Which of the following approaches to the counseling process is most likely to succeed:
   A. Discussions during regular appointment times.
   B. Group discussions.
   C. Guided decision making.
   D. Discussions at the request of parents.

---

EDUCATIONAL OBJECTIVE

124. The pediatrician should have an appropriate awareness of the clinical features of perilymph fistulas in infants and children. (Recent Advances, 90/91)

Perilymph Fistulas in Infants and Children


Perilymph fistulas are spontaneous leaks of perilymph (cerebrospinal fluid) into the middle ear. They can be classified as congenital (temporal bone or extracranial abnormalities); acquired (iatrogenic, or by direct or indirect trauma, or barotrauma); or due to bony erosion arising from infection, neoplasm, or cholesteatoma. Infants or children with tinnitus or progressive, fluctuating, or sudden sensorineural hearing loss (with or without vertigo) should be examined for perilymph fistula. These examinations should include early and frequent audiological evaluation and computed tomography scan of the temporal bone. Exploratory tympanotomy may be necessary to confirm the diagnosis.

Reilly describes a 3-year prospective study of 244 children with sensorineural hearing loss in which 57 children (23%) had computed tomographic scan abnormalities of the temporal bone. Of these 57 children, 15 (26%) were found to have an active congenital perilymph fistula. Bluestone reported in 1988 that, of 37 children treated, 28 (76%) had had documented history of otitis media or middle ear disease. Thus, clinicians must be alert for the presence of a congenital perilymph fistula when sensorineural hearing loss develops or progresses during an episode of otitis media. These fistulae are caused by either congenital ossicular deformities, or abnormalities of the labyrinthine windows, or coexistence of both conditions. There appears to be a likelihood that surgical repair, patching the perilymph leak with a connective tissue graft, will bring relief from vertigo and tinnitus, and no further deterioration in hearing. Best results were obtained in patients with traumatic fistulae. Clearly, early diagnosis and repair of these fistulae are most important. (Kurt Metzl, MD, Editorial Board)