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AMERICAN ACADEMY OF PEDIATRICS
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Cover: Two Young Girls at the Piano, by Pierre August RENOIR (© 1989 The Metropolitan Museum of Art; Robert Lehman Collection, 1975. 1975.1.201). Two Young Girls at the Piano is one of at least five versions of the same scene by Renoir, including a lovely pastel recently sold at auction. Renoir was 51 years of age at the time he did this work in 1892, and at the height of his popularity. This lovely presentation evokes a former era when adolescents, at least those in favored economic status, spent their leisure learning skills such as playing the piano and singing. One of the major tasks of adolescence is to develop one's identity and sense of competence. Whether it is the charming skills so beautifully depicted in this painting or others, the task of pediatricians is to assist young people in developing skills of which they can be proud.

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Commentary

The Satisfactions of Pediatric Practice

“What is it that you find so satisfying after four decades of pediatric practice?” asked Dr Howard Spiro, Professor of Medicine, at a recent seminar in the Program for Humanities at Yale. I appreciate the opportunity to share my answer with readers of Pediatrics in Review. I practice primary pediatrics in association with Dr Robert LaCamera and Dr Robert Anderson in New Haven, Connecticut. I find that providing primary care from infancy through adolescence offers a satisfying opportunity to serve both parents and children.

In practice, we consider that the primary physician is the first contact with the health care system. We tell our parents and children that one doctor is always available by phone to consult and, if necessary, to see the child either in our office, at home, or in the emergency department. We explain that the three of us are equally interested in providing pediatric care, and we encourage parents to seek appointments with any one of us.

In our office, the prenatal pediatric conference provides an opportunity to become acquainted with prospective parents. The discussion usually focuses on the health of the expectant mother, the course of pregnancy to date, and plans for care and feeding of the infant. The expectant father usually participates actively in these discussions.

The Yale “Rooming In Plan” encourages the participation of fathers during the delivery and in the care of the infant, establishing the experience as a family event. I spend considerable time at the bedside during the lying-in period and enjoy helping mothers and fathers as they care for their infant.

The first weeks at home with a baby demand a major reorganization of parents’ priorities. New parents tend to feel inadequate when a baby suffers gas pains, spitting up, cramps, unusual bowel movements, hiccups, and fussiness. We find that a phone call (which we often initiate) is reassuring and appreciated because it indicates our desire to be supportive and helpful. Many mothers are exhausted and depressed at this moment. They are often so totally involved with the baby that it seems as if the mother and baby are one unit. Within a few weeks, however, most women begin to become increasingly interested in the home and wider community.

Well baby visits, repeated illnesses and injuries, and school and camp examinations provide opportunities for developing close relationships with parents and children. We rarely see a stranger in our practice.

I knew early in my training that it was important for a pediatrician to have an understanding of infant and child development. I did not realize, however, that this knowledge would be a part of my daily routine. A few examples will illustrate this point.

An infant aged between 4 and 8 months usually manifests “stranger anxiety,” shown as a strong preference for the primary caretaker (usually the mother), who often comments: “He’s spoiled. I can’t leave him with anyone. What did I do wrong?” When I explain that this behavior is not an indication that the infant is spoiled, but rather that he or she has matured sufficiently to be able to recognize the importance of the devoted care he or she has received from the primary caretaker, the mother’s face lights up with pride.

Early in the second year, many parents ask why a child who is increasingly independent may at times be quite clinging. A toddler’s drive to be independent and venturesome is at times frightening—he wonders whether he might wander so far away that his parents would be unable to find him. He runs back, clings to his mother for a few seconds, gets “re-charged,” and takes off again.

Fortunately, most illnesses in pediatrics are self-limited viral episodes or upper respiratory tract infections with associated otitis, which respond to antibiotics. This is usually simple to conclude after examining the child. However, the pediatrician must be always on the alert for more serious illnesses that may occur, of course, and be ready to arrange specific studies and consultation when necessary.

Easily forgotten is the fact that headache, body aches, nausea, cramps, vomiting, diarrhea, and vertigo are all disconcerting to young patients; “It’s only a viral infection and will run its course” may make sense to a physician, and to many parents, but it is hardly reassuring to a child or adolescent who is frightened by malaise and weakness. Behavioral

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 10% of the required CME 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 each article in 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.
ative one. Steroid assays require gas chromatography and mass spectrometry, with the cost of a single test being more than $100. Given that there are over one million high school football players in the United States, this would mean more than $100 million for just one test on each player each year. Oral forms of the steroids are usually not detected by urine assay 2 to 14 days after they are last used, and even injectable steroids can be identified by assaying their metabolites only up to a month after their last use (up to a year if an oil-based formula is used). Because players are most likely to take steroids in the spring and early summer to bulk-up before the season, several assays done both before and during the actual season would be necessary. Cost precludes this as a realistic solution for many school districts. It should be mentioned that, in 1989, the American Academy of Pediatrics stated as a matter of policy that "athletes should not be singled out for involuntary screening for drugs of abuse," but this refers to marijuana, alcohol, etc.7 It is regrettable, but ethically permissible, to screen high school athletes for steroid use by urine testing if this is the only way to prevent this form of cheating.

Coaches should address this problem at the beginning of each athletic season with a declaration that cheating in any form, including the taking of steroids, will not be tolerated. It is traditional for physicians not to make moral judgments about our patients' misbehavior, so we must confine our counselling to the medical risks of steroid abuse. Coaches are under no such proscription, and they can declare to the athletes that steroid use is just one more form of cheating and therefore unacceptable behavior. We must ensure that our youth, both athletes and nonathletes, are educated about the side effects of steroids. This education should occur in school health classes and during the anticipatory guidance part of the preparticipation physical examination. Unfortunately, adolescents' perception of their invincibility precludes this being very effective.

REFERENCES

SUGGESTED READING

Self-Evaluation Quiz
1. Which of the following is true about anabolic steroids? They increase
A. Muscle strength in average athletes.
B. Muscle strength in elite athletes.
C. Aerobic capacity.
D. Endurance.
E. The effectiveness of amino acid supplements.

2. Each of the following is true about anabolic steroids, except:
A. About 10% of male high school students have taken them.
B. 1% to 2% of female high school students have taken them.
C. Sports frequently associated with their use are football, wrestling, and track and field.
D. They are rarely used by boys less than 16 years of age.
E. About 25% of adolescent males using steroids do so to improve their physical appearance, rather than to enhance athletic performance.

3. Legitimate therapeutic uses of anabolic steroids include each of the following, except:
A. Initiation of delayed puberty.
B. Treatment of Turner syndrome in conjunction with growth hormone.
C. Treatment of micropenis.
D. Treatment of hypogonadism.
E. Treatment of underdeveloped musculature.

4. Which of the following side effects disappears after stopping anabolic steroids?
A. Peliosis.
B. Increased total serum cholesterol.
C. Hepatoma.
D. Epiphyseal closure.
E. Baldness.

5. Factors limiting the usefulness of drug testing for anabolic steroids in high school athletes include each of the following, except:
A. Single tests cost over $100.
B. Oral steroids are usually not detected by urine assay 2 to 14 days after last use.
C. Injectable steroids can usually be detected only up to 1 month after last use.
D. Several assays both before and after sport seasons would be required.
E. "Stacking" of oral and injectable steroids may make urine assays useless.
Upper Gastrointestinal Tract Bleeding

6. Acidosis due to blood loss is determined primarily by:
A. Gastric hypersecretion.
B. Tissue anoxia.
C. Transfer of fluid and electrolyte from the intracellular to the extracellular compartment.
D. Renal compensatory mechanisms.

7. In monitoring the clinical response of a patient with acute hemorrhage, the most valuable measurement among the following is:
A. Hematocrit.
B. Hemoglobin.
C. Volume of blood lost.
D. Vital signs.

8. In patients with upper gastrointestinal bleeding of uncertain origin, the most useful diagnostic procedure among the following is:
A. Radiographic study using barium.
B. Angiography.
C. Endoscopy.
D. Radionuclide scan.

9. Among the following, the most common cause of rectal bleeding in patients in whom proctosigmoidoscopy, colonic endoscopy and air-contrast barium studies give negative results is:
A. Intussusception.
B. Meckel diverticulum.
C. Small bowel tumor.
D. A vascular lesion of the intestine.

10. Stress ulcers in children most commonly involve the:
A. Duodenum.
B. Pyloric antrum.
C. Lesser curvature of the stomach.
D. Fundus of the stomach.

11. Agents that may be appropriately used in the management of peptic ulcer disease include each of the following except:
A. Corticosteroids.
B. Prostaglandins.
C. H2 blockers.
D. Antacids.

School Absenteeism


Children aged 6 to 17 years (kindergarten through twelfth grade) average 5 days of school missed per school year for health or health-related conditions that are most often acute and self-limited or need minimal medical intervention. Rarely is chronic illness the cause of excessive absence from school but, when it does occur, it becomes the responsibility of parent and pediatricians to initiate measures to keep the educational experience intact for such children to the extent possible considering the condition and other circumstances.

There is a significant association between lack of motivation, inappropriate lag in grade for chronological age, repeated school absence, and subsequent school failure and “drop out.” This most often has a variety of social, psychological, and perhaps economic causes. In some families, it is important to recognize that minor health problems superimposed on a complex psychosocial environment and parental anxiety may facilitate excessive absences.

In recent years, it has been recognized that excessive school absence, without contributing physical health problems, is an indicator of risk-taking or deviant behavior that can lead to health and social problems during adolescent or young adult years. Recognition by physicians of the pattern of repeated absence may allow for early interventions that could prevent such conditions as early sexual activity, substance abuse (especially smoking and alcohol use), and delinquent behavior.

Comment: Awareness by physicians and educators of repeated school absence as a symptom that requires some creative strategies for intervention may allow for the development of relevant community-based models that integrate the needs of the “at risk” student and family with community resources, including the health and educational system that ultimately must respond. (Fernando A. Guerra, MD, Editorial Board)
Dermatomyositis

day until muscle enzymes have normalized. On the alternate day, small maintenance doses of prednisolone may be needed. On occasion, when muscle enzymes are normal in the presence of clinically active disease, we have continued therapy until von Willebrand factor-related antigen has returned to normal levels, thus aborting flares once the steroids are tapered. If there is a prominent cutaneous component to the disease, treatment with hydroxychloroquin (no more than 7 mg/kg per day) may be used in conjunction with topical steroids and lubricants. In all children, use of a sunscreen (level 16 or more) will diminish exposure to the ultraviolet light spectrum, in an effort to decrease disease activation. Finally, some children with longstanding chronic disease have normal levels of muscle derived enzymes, normal levels of von Willebrand factor-related antigen and elevated levels of neopterin, suggesting immune stimulation. These children may have too much fibrosis to benefit from a short course of steroid therapy and intensive physical therapy; in these children, a muscle biopsy may be helpful to assess the potential for repair. Low dose intravenous methotrexate has also been of some use in the treatment of children with refractory symptoms, and cyclosporin has been used in England and France with moderate success. There have been no comparative studies of the efficacy of these drugs in children in the United States. Cytokan has been found to be ineffective against PM in adults, and has not been well studied as a treatment for childhood myositis.

During the past 5 years, we have been using von Willebrand factor-related antigen as a guideline to therapy in conjunction with intravenous methyprednisone at the onset of therapy. We have not had the development of soft tissue calcifications in any of the 11 children managed in this way. A concern that accompanies the use of oral steroids is the development of compression fractures as a consequence of osteopenia. We have found that children with JDMS have low levels of osteocalcin and that the levels of osteocalcin rise when the disease becomes less active. This means that bone mineral density should be determined and, if it is low, institution of vitamin D therapy and an assessment of dietary calcium intake should be considered to document the need for supplemental calcium. With respect to therapies other than steroids, a single case report suggests that intravenous y-globulin therapy may diminish disease activity, perhaps in a manner similar to that documented for Kawasaki syndrome. Others have suggested the evaluation and use of methotrexate. Evaluation of the use of cyclosporin for treatment in this country has been hampered by coexisting therapies. Children have several types of disease course (monocyclic, recurrent, continuous), and it is difficult to predict outcome at the onset of illness, although some studies indicate that prognosis is directly related to the degree of vasculitis. Overall, the greatest mortality appears to be in the nonwhite adult female patient group; improved survival has been documented for children, with less than 7% mortality in the past few years as compared to over 30% mortality 25 years ago.11 Relapse in a child with an apparent monocyclic course is not common, but has been observed 8 years after apparent complete recovery from the initial insult. There is sporadic evidence that, despite apparent clinical quiescence, there may be continued histological evidence of inflammatory muscle disease. Graded physical therapy is very important to loosen contracted muscles. Local skin care and sun protection using blocking agents (level 16 or more, p-aminobenzoic acid-free may be needed), as well as avoidance of strenuous exercise during the active phase of disease all hasten recovery.

SUMMARY

The child who develops the symptoms of the specific rash, proximal muscle weakness, and fatigue should seek medical care promptly. With the advances in physical and medical therapy, many of the consequences of the disease can now be ameliorated. There are suggestive data that JDMS and PM may each have a different pathophysiology, but more evidence is needed. The next few years should be exciting as there is increased effort to determine if there is, in fact, a causal relationship between Coxsackievirus B or other enterovirus and genetic factors that alter the susceptibility to or severity of the course of the disease—JDMS.

Self-Evaluation Quiz

12. Similar diagnostic criteria for juvenile dermatomyositis (JDMS) and polymyositis include each of the following, except:
A. Characteristic rash.
B. Symmetrical proximal muscle weakness.
C. Elevated muscle-derived enzymes.
D. Electromyogram typical of an inflammatory myopathy.
E. Exclusion of other rheumatic diseases.

13. Assays for which of the following antibodies are commonly positive in children with JDMS?
A. Scl-70.
B. SSA-Ro/SSB-La.
C. DNA.
D. Antinuclear antibodies.
E. Ribonucleoprotein.

14. A 7-year-old girl develops proximal muscle weakness and a rash. Which of the following features of her rash would not be consistent with a diagnosis of JDMS?
A. Periorbital erythema and edema.
B. Eyelid telangiectasia.
C. History of improvement after exposure to sun.
D. Atrophic skin over knuckles, elbows, and knees.
E. Violet or reddish purple color.

15. True statements about management and therapy for children with JDMS include each of the following, except:
A. Corticosteroids are of primary importance.
B. Systemic corticosteroids increase the risk for soft tissue calcification.
C. Repeated determinations of the von Willebrand factor-related antigen are helpful in monitoring therapy.
D. Physical therapy is helpful.
E. Bone mineral density should be determined.

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MUSCULOSKELETAL DISEASE

Risk of Seizures and Encephalopathy After Immunization With the Diphtheria-Tetanus Toxoids-Pertussis Vaccine


'Pertussis Vaccine Encephalopathy': It Is Time to Recognize It as the Myth That It Is. Cherry JD. JAMA. 1990;263:1679–1680.

In a report by Griffin et al, the diphtheria-tetanus toxoids-pertussis (DTP) vaccine was administered during the first 3 years of life to 38 171 children enrolled in Medicaid. A total of 107 157 doses were given. This population was monitored for febrile and afebrile seizures, encephalopathies, and epilepsy. Both inpatient and outpatient outcomes were assessed for a wide variety of neurologically oriented ICD-8 codes.

Outcome was assessed for 1187 cases, of which records were available for 828 (70%). Of 1187 cases, 358 met the study and case definition criteria. 277 children had febrile seizures, 42 had afebrile seizures, and 37 had seizures associated with other acute neurologic illnesses. Two children had encephalitis, but the onset was more than 2 weeks after DTP immunization. In a period of 3 days after DTP administration, the risk of febrile seizures was 1.5 times that of the control period of 30 or more days after DTP administration. The risk of afebrile seizures (N = 1) or acute symptomatic seizures (N = 0) showed no increase in this 3-day period compared to the control period.

Comment: The British National Encephalopathy Study previously has estimated the rate of serious neurologic outcomes in children within 7 days after DTP immunization to be 1 in 140 000 vaccinations. The rate of death or permanent brain damage was estimated to be 1 in 330 000 vaccinations. This conclusion is now known to be incorrect, based on reassessment of original data. In addition, Cherry has commented in an editorial that, in three studies (including the study by Griffin et al) that involved a total of 230 000 children and 713 000 immunizations, no causal relationship between DTP vaccination and permanent neurologic illness was noted. Cherry also makes a strong plea to end the myth of pertussis vaccine encephalopathy. The study by Griffin et al and Cherry's commentary are "must" reading for pediatricians (happily, both are in the same issue of JAMA).

This abstract is provided to correct prior accepted concepts of risks and outcomes following DTP vaccination. In an abstract published in the March 1990 edition of Pediatrics in Review (1990;11:275), the British National Encephalopathy data were quoted. It is important to correct this misconception. Although discussions with parents and members of the legal profession and education via the media will be ongoing, a strong scientific base is available to substantiate the claim that the DTP vaccine is efficacious, rational, and safe. (Daniel D. Chapman, Editorial Board)