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**PEDIATRICS in Review**

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the United States. Hepatitis E, unlike hepatitis A, is a highly fatal disease in infected pregnant women, in whom the mortality rate may be 10% to 20%.

**Prognosis**

The prognosis of various types of viral hepatitis has been discussed in the sections devoted to clinical manifestations, disease course, and complications.

Hepatitis A is a relatively benign disease. Occasionally the illness may be prolonged, but eventually there is complete recovery with no evidence of chronic liver disease. Fatal fulminant hepatitis A is an extraordinarily rare phenomenon.

Most patients who have hepatitis B recover completely. However, the risk of chronic infection is extremely variable; it may be low (about 3%) in young healthy adults or very high (60% to 90%) in infants born to mothers carrying HBsAg and HBeAg. The overall risk is about 10%. Chronic hepatitis B infection may progress to cirrhosis of the liver and primary hepatocellular carcinoma. The risk of fatal fulminant hepatitis B is low (<2%) except when there is superinfection with HDV. Under these circumstances, the mortality rate may be as high as 30%.

Observations of patients who have posttransfusion and community-acquired hepatitis C have revealed a relatively high (approximately 50%) incidence of chronic liver disease. Fulminant hepatitis is an occasional outcome. The overall mortality rate is 1% to 2%. Studies in Japan have revealed that HCV infection is associated with the development of hepatocellular carcinoma.

Hepatitis E is a relatively benign disease that does not progress to chronic hepatitis. However, it is highly fatal in pregnant women.

**Suggested Readings**

A list of suggested readings on this subject will be published with the second part of the article.
about abstinence, sexuality, contraception, and STDs, and can recommend ways for the adolescent to adopt less risky behaviors if necessary. This anticipatory guidance must be shaped to reflect the pediatrician’s understanding of normal adolescent development. Most adolescents have not yet developed formal operational thinking and, therefore, have a relatively limited capacity to alter their current behavior on the basis of abstract future possibilities. In addition, adolescents normally take risks as they gradually separate from their families, intensify their relationships with their peers, and pursue early romances. It is, thus, developmentally understandable, if frustrating to the clinician, that many adolescents fail to appreciate the substantial risks they incur when they engage in unprotected sexual intercourse.

All sexually active female adolescents should be screened routinely for STDs. Particularly in urban areas and at clinical sites with a high prevalence of STDs, it is standard practice to screen sexually active young women for gonorrhea and chlamydial infections every 6 months. Active and prompt efforts must be made to identify and treat the male sexual partners of adolescents who have PID. Presumptive antibiotic treatment must be given to contacts when they are first seen, whether or not diagnostic tests are obtained, to prevent delays in treatment and failures of follow-up.

**SUGGESTED READING**


Gilsrap LC, Herbert WNP, Cunningham FG, Haut RC, Van Patten HG. Gonorrhea screening in male consorts of women with pelvic infection. *JAMA*. 1977;238:965-966


**ADOLESCENT MEDICINE**

**Pelvic Inflammatory Disease**

**PIR QUIZ**

5. The best contraceptive method for the prevention of sexually transmitted diseases is:  
   A. Diaphragm.  
   B. Cervical caps.  
   C. Spermicidal foam.  
   D. Condoms.  
   E. Oral contraceptives.

6. Which of the following regimens is the most appropriate inpatient treatment for a pregnant adolescent who has pelvic inflammatory disease (PID)?  
   A. Cefoxitin, given intravenously, and doxycycline, given orally.  
   B. Cefoxitin, given intravenously, and erythromycin, given orally.  
   C. Penicillin, given intravenously, and chloramphenicol, given orally.  
   D. Ceftriaxone, given intramuscularly, and doxycycline, given orally.  
   E. Ceftriaxone, one dose given intramuscularly, and erythromycin, given orally.

7. A patient you suspect of having PID also presents with right upper quadrant pain. The most likely cause of this pain is:  
   A. Hepatitis B.  
   B. Cholangitis.  
   C. Gastric ulcer.  
   D. Perihepatitis.  
   E. Hydrops of the gall bladder.

8. All of the following are sequelae of PID, except:  
   A. Tubo-ovarian abscess.  
   B. Ectopic pregnancy.  
   C. Chronic abdominal pain.  
   D. Infertility.  
   E. Endometriosis.

9. The alternatives to culturing for *Chlamydia* are the direct immunofluorescence antibody test and the polyclonal enzyme-linked immunosorbent assay test. Which of the following is a true statement comparing these tests?  
   A. Both tests are easy to read and interpret.  
   B. The positive and negative predictive values of both tests are the same in high-risk and symptomatic populations.  
   C. Polyclonal enzyme-linked immunosorbent tests allow rapid batch testing and do not depend as heavily on the technologist’s skill as do direct immunofluorescence antibody tests.  
   D. Specimens for both tests are best obtained from the lateral vaginal walls.  
   E. A negative result from a direct immunofluorescence antibody test or polyclonal enzyme-linked immunosorbent assay test, when done properly, rules out the presence of *Chlamydia*.
**PIR Quiz-CME Credit**

The American Academy of Pediatrics is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. As an organization accredited for continuing medical education, completion of the PIR Quiz meets the criteria for 2 hours of credit, per issue, of the American Academy of Pediatrics’ PREP Education Award.

The American Academy of Pediatrics designates this continuing medical education activity for 2 credit hours, per issue, in Category 1 of the Physician’s Recognition Award of the American Medical Association.

This program has been reviewed and is acceptable for 2 Prescribed hours per issue by the American Academy of Family Physicians. (Terms of approval: Beginning date January 1992. Enduring Materials are approved for 1 year, with option to request renewal. For specific information, please consult the AAFP Office of Continuing Medical Education.)

The questions for the PIR 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 the PIR Quiz Card found in the January issue, and return the card to the Academy. (PREP group participants will receive the PIR Quiz Card and Self-Assessment Credit Reply Sheet under separate cover.) To receive CME credit on the 1992 annual credit summary, you must be enrolled in PREP or subscribe to Pediatrics in Review and return the PIR Quiz Card by February 28, 1993. PIR Quiz Cards received after this deadline will be recorded in the year it is received; with cards from the 1992 PIR journals, accepted through December 31, 1994.

The PIR Quiz card is bound into the January issue. Complete the quizzes in each issue and send it to: American Academy of Pediatrics, PREP Office, PO Box 927, Elk Grove Village, IL 60009-0927.

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

Erythema Infectiosum


Erythema infectiosum (EI) is a fairly common childhood exanthem that typically features a prodromal phase of 3 to 5 days’ duration consisting of low-grade fever, malaise, and pharyngitis followed 7 to 10 days later by a distinctive rash. It frequently is referred to as “fifth disease” because it was the fifth childhood exanthem described, the first four being measles, rubella, scarlet fever, and roseola infantum.

The rash of EI is often pruritic and classically appears first on the face with a red “slapped cheek” appearance and circumoral pallor. It frequently is followed by a symmetric, lace-like maculopapular rash on the extremities and trunk. The rash can be precipitated by exposure to heat and sunlight and may recur for weeks to months with continued exposure to these precipitants. In general, children who have EI look rather well and frequently exhibit nothing more than the typical eruption. In contrast, adolescents and adults often manifest more severe symptomatology, including high fevers, gastrointestinal complaints, and arthritis. Because EI is self-limiting, there is no specific treatment other than supportive care.

Since the early 1980s, it has been recognized that parvovirus B19 is the cause of erythema infectiosum. This single-stranded DNA virus, which infects humans only, was discovered initially during 1975 in serum samples from healthy blood donors. Transmission of parvovirus infection occurs mainly via respiratory secretions and, less commonly, via blood products. Patients who have EI are most contagious during the prodromal phase and less so once the rash appears. Human parvovirus (HPV) infection is seen most often in school-aged children between 5 and 15 years of age and usually occurs in epidemics during late winter and spring (but may occur at any time of the year). Seroprevalence studies demonstrate that approximately 50% of adults have had prior infection with parvovirus B19 compared to 20% to 40% of children 5 to 18 years of age and 5% to 10% of preschool-aged children.

In addition to EI, infection with HPV B19 has been found to cause a variety of hematologic complications, including aplastic crises in patients who have hereditary hemolytic anemias (ie, sickle cell disease) and chronic anemia in immunodeficient hosts. It appears that the primary site of HPV replication is the bone marrow, where it is cytotoxic for red blood cell precursors, thus inhibiting erythrocyte production. Consequently, patients whose red blood cells have a shortened life span (such as those with hemolytic anemia) are at risk for developing aplastic crises when infected with HPV. In contrast to EI, patients with aplastic crisis are most contagious from the onset of acute illness through the following week.

Recently, Inoue et al reported an association of parvovirus infection with idiopathic thrombocytopenic purpura, suggesting another possible hematologic complication of HPV.

When contracted during pregnancy, HPV infection has been noted to cause spontaneous abortions, hydrops fetalis, and stillbirths. Many have suggested that these sequelae are related to whether infection occurred during the first, second, or third trimester, respectively. Although infection by HPV during pregnancy is cause for concern, current data place the risk of developing fetal complications at only 1% to 2%. Interestingly, there