



Hospital brought rapid cesarean delivery times into range of 10.9 minutes: Can you?

It's every provider's nightmare: Everything is going smoothly during labor, with normal progress, a reassuring fetal heart rate (FHR) tracing, and a dilated cervix. Suddenly there's profound bradycardia, with deceleration of the FHR to the 60s. The bedside nurse administers oxygen and IV fluids, but bradycardia persists.

A pelvic exam is performed; the cervix is unchanged, the baby is in vertex presentation and cord prolapse is ruled out. A fetal scalp electrode is placed; the monitor is picking up fetal, not maternal heart rate, and the baby has been "down" for over 5 minutes.

The charge nurse calls to the ob's answering service and the ward clerk "beeps" her as well. The ob calls back within 5 minutes, and the patient is moved to the operating room. The in-house ob physician, the OR team, and the ob anesthesiologist are paged "Stat" to the OR, and the baby is delivered by cesarean section, about 8 minutes after the move to the operating room—and 20 to 25 minutes after the onset of bradycardia. The placenta shows a partial abruption. The baby has depressed Apgar scores and cord blood gas studies show metabolic acidosis with pH less than 7.00.

Everything was done "right." The nurses took appropriate measures to try to resuscitate the baby in utero, the in-house physicians and OR team responded promptly, and the baby was delivered well within the American College of Obstetricians and Gynecologists standard of 30 minutes from "decision to incision." But the baby may or may not do well. Can we do better?

Sharp Mary Birch hospital in San Diego utilized an innovative approach to ob emergencies can make these unnerving episodes seem less like an avalanche and more like downhill skiing. One of the keys is replacing sequential with simultaneous activation of the ob team.

'Simultaneous team activation' as a paradigm shift

Post-hoc analysis of the time to delivery in cases of unexpected profound fetal bradycardia shows that at our institution, the nursing interventions typically require 3 to 10 minutes. Reaching the attending obstetrician by pager or phone typically requires at least 3 to 5 minutes and there may not be a response for up to 10 or 15 minutes. Even when the obstetrician is in house and decides to proceed immediately with C/S, it is unlikely that the patient and anesthesiologist will be in the OR within 10 minutes of the onset of fetal bradycardia. At our institution, delivery for intrapartum emergencies like cord prolapse and profound fetal bradycardia was historically nearly always well within 30 minutes of decision for C/S, but seldom within 15 minutes of onset of bradycardia.

First, it's necessary to activate the entire response team rapidly and simultaneously.

Even awaiting arrival of an "in-house" obstetrician prior to activation would make it virtually impossible to reach the 15-minute goal. Similarly, it's essential to empower the front-line team member—namely the L&D nurse—to make the activation decision—to pull the trigger,

- Second, the response must proceed in a coordinated, virtually choreographed fashion.
- Next, bring in the rapid response team
- Next, test your team concept

(see full article for details)

Can their program improve response times for every hospital?

Certainly, for hospitals with an in-house OR team, obstetrician, and ob anesthesiologist, a system similar to ours should be practical, and we believe it will likely have a positive impact. For hospitals without in-house teams, it may still be possible to improve

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New Guidelines for cervical cancer screening are available now

Changes were made for managing these conditions in adolescents for whom cytological follow-up for 2 years was approved. More emphasis is placed on immediate screen-and-treat approaches for HSIL. Human papillomavirus (HPV) testing is incorporated into the management of AGC after their initial evaluation with colposcopy and endometrial sampling. The 2004 Interim Guidance for HPV testing as an adjunct to cervical cytology for screening in women 30 years of age and older was formally adopted with only very minor modifications.

See GYN Hot Topics with comments by Dr. Alan Waxman

Also on-line....

Subscribe to the listserv and receive reminders about this service. If you have any questions, please contact me at nmurphy@scf.cc

Dr. Neil Murphy
Ob/Gyn—
Chief Clinical Consultant (C.C.C.)

IHS Child Health Notes

"It doesn't matter if the cat is black or white as long as it catches mice."

—Deng Hsiao P'ing (1904–1997)

Quote of the month

"There are no answers, only stories."

—Garrison Keillor

Guest Editorial

Challenges in Pediatric Rheumatic Disease: Special Issues with Native Children

James N. Jarvis, M.D. Dept. of Pediatrics, University of Oklahoma College of Medicine, Oklahoma City, OK 73104

You've probably heard this dozens of times before, "This might be an autoimmune disease. Order an ANA and a rheumatoid factor." It's a common occurrence on adult medicine wards, and all too common in pediatrics as well. It probably stems from the fact that, until recently, very few medical schools had a pediatric rheumatologist; a third of the medical schools in the United States still don't have one. Thus, pediatricians have had to undertake their evaluations of children with suspected rheumatic disease or musculoskeletal complaints using models derived from adult medicine. One of the most important advances in pediatric rheumatology over the past 15 years, and the one that has received the least attention, I think, has been the growing body of research that has shown just how inappropriate those models are for the evaluation of children with musculoskeletal complaints and/or suspected rheumatic disease.

Perhaps the most surprising finding has been the documentation that isolated musculoskeletal pain is almost never the complaint with which children with arthritis present to their primary care physicians. In a retrospective study of 414 children evaluated at a university-based pediatric rheumatology clinic, McGhee and colleagues demonstrated that not a single child among 76 diagnosed with juvenile rheumatoid arthritis (JRA) presented with a chief complaint of isolated musculoskeletal pain. Rather, children with JRA invariably presented with joint swelling and/or gait disturbance as their primary complaint. The gait disturbance, when present, was typically better with activity and worse with rest, exactly the opposite of what one finds in mechanical musculoskeletal pain syndromes. Here in Oklahoma, we have found that cultural considerations reinforce the absence of pain as a common presenting complaint of children with chronic arthritis. Based on these data, it is safe to make the cautious generalization that if a child is complaining of musculoskeletal pain, chronic forms of arthritis can safely be excluded from the differential diagnosis, particularly if the child has an otherwise normal physical exam.

There is an exception to this rule, and the exception is highly relevant to "Indian Country." Children with spondyloarthritis (e.g., ankylosing spondylitis), a form of arthritis common in Native American boys and girls, frequently present hip isolated hip pain (low back pain is seldom a part of the clinical presentation of spondyloarthritis in children). In these cases, the pain is quite typical of that found in other forms of synovitis: most prominent after periods of inactivity.

This is the point where primary care providers like to ask, "OK, if I

consider one of these diagnoses, what tests do I order?" Unfortunately, your choices are pretty slim. For example, children with chronic polyarthritis, unlike adults, seldom express IgM-rheumatoid factor (IgM-RF) detected on conventional latex agglutination assays. In 1986, Eichenfield and colleagues systematically examined the clinical utility of IgM-RF testing in children. In that study, IgM-RF tests were positive in only 4.8% of 426 children tested. The test was negative in 95 children with JRA, giving it a poor negative predictive value as a screening test for arthritis. Furthermore only 5 of the 11 children who tested positive had rheumatoid arthritis, and, in each case, the positive test added no additional value in establishing the diagnosis. "Testing for rheumatoid factor is a poor screening procedure for juvenile rheumatoid arthritis in the general situations in which it is more likely to be requested..." This is a conservative statement, and it is just as reasonable, based on these data, to state categorically that there is no reason to request a rheumatoid factor assay as a diagnostic test on any child at any time. This sweeping statement does not take into account the higher prevalence of RF-positive disease in African American and Native American children and in children from the Indian subcontinent. Until we have better population-specific data, this test should be generally considered one with such low positive and negative predictive values that its use should be considered suspect.

ANA tests are limited by the exact opposite problem: they are far too commonly positive in children to be diagnostically helpful in the evaluation of common musculoskeletal complaints. Malleson and colleagues found that 41% of ANA tests performed at British Columbia Children's Hospital were positive at titers of 1:20 or greater. Any test that is positive in 41% of the subjects tested will be extremely limited as a screening test for relatively rare diseases. Our group recently attempted to refine the Malleson data by trying to define settings where the results in ANA testing might be useful, specifically asking whether the diagnostic utility of a positive test improved at higher titers or in specific clinical settings. We found that ANA titers of children with dermatomyositis, spondyloarthritis, and JRA completely overlapped those of healthy children. Thus, as a screening test for chronic arthritis or inflammatory muscle disease, ANA tests have absolutely no diagnostic value. Titers of 1:1,080 and higher, however were commonly seen in children with systemic lupus and rarely (although occasionally) seen in healthy children. Based on these data, we recommend that ANA tests be ordered as a screening test in children to answer only a single diagnostic question: Does this child have systemic lupus? A clinician can feel confident in telling the parent of a child 10 years of age or younger with an ANA test of < 1:160 that, "The ANA test was negative."

In the final analysis pediatric rheumatology remains a "history and physical" subspecialty. For chronic forms of arthritis, in particular,

there are simply no “tests” that tell a physician that a child has or doesn’t have a given disease. Recognition of chronic forms of arthritis (and the other rheumatic diseases, for that matter) requires knowledge of the common presenting symptoms, the age of onset, and the defining clinical findings. Use of adult models to recognize pediatric diseases will only be frustrating to the physician and, more importantly, bothersome (or dangerous) to children and families. All of us start our pediatrics rotations as third year medical students being told, “Children are not just small adults.” We are still learning that lesson in pediatric rheumatology.

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Infectious Disease Updates.

Rosalyn Singleton, MD, MPH

NOTE: At the 1st International Child Health Meeting in Seattle, April 2005, several of us met to discuss the disparity in respiratory hospitalizations among American Indian and Alaska Native (AI/AN) children. We decided that minimal data were available on viral etiologies other than RSV. In October 2005 we started the Respiratory Virus Study with a grant from Medimmune.

Study of Virus Etiologies of Respiratory Hospitalizations in Alaska Native children

Background: Alaska Native infants from the Yukon Kuskokwim Delta (YKD) of Alaska have some of the highest rates of lower respiratory tract infection (LRTI) hospitalizations (284/1,000/yr) in the United States. We conducted active surveillance to describe viral & bacterial etiologies of LRTI hospitalizations in YK children.

METHODS: We obtained a nasopharyngeal (NP) swab and NP wash on YKD children <3 years of age hospitalized for LRTI. We also collected NP swabs on healthy children. We performed real time polymerase chain reaction (PCR) for RSV, influenza A and B, parainfluenza virus (PIV) 1-3, human metapneumovirus (hMPV), rhinovirus, coronavirus (COV) and pertussis..

RESULTS: From Oct. 2005–Sept. 2007, we enrolled 434 hospitalized and 553 healthy children.

PCR Positives among Cases and Controls

Oct. 2005–Sept. 2007

Viruses and Pertussis	Hospitalized Cases	Controls
RSV	102 (24%)	25 (5%)
Influenza	23 (5%)	11 (2%)
Parainfluenza	74 (17%)	23 (4%)
Metapneumovirus	66 (15%)	42 (8%)
Coronavirus	25 (6%)	29 (5%)
Rhinovirus	187 (43%)	176 (32%)
Pertussis	7 (2%)	0 (0)

*Excluding rhinovirus 41 (9%) of the positive cases were co-infected with 2 or more viruses.

Highlights:

1. RSV was the most common virus, but we found an unusually high proportion of hMPV.
2. Rhinovirus occurred in nearly half of cases but was also common among controls that may have had minor cold symptoms.
3. Pertussis only occurred during a known outbreak; however, we identified 5 hospitalized children with pertussis who were not clinically recognized.
4. Peak RSV and PIV activity occurred 2-3 months after the U.S. peak activity.

STUDY INSTITUTIONS: Alaska Native Tribal Health Consortium; Arctic Investigations Program-CDC; Yukon Kuskokwim Health Corporation; U of Washington; CDC/CCID Atlanta, GA.

Recent literature on American Indian/Alaskan Native Health

Doug Esposito, MD

Tsosie R. *Cultural challenges to biotechnology: Native American genetic resources and the concept of cultural harm. J Law Med Ethics.* 2007 Sep;35(3):396-411.

Summary

This article explores the issue of rights to ownership and privacy of human tissue and the knowledge and products derived from the study of that tissue. Anglo-American legal doctrine essentially approaches the resolution of conflicts in this arena from a personal property and privacy perspective; rights which are fundamentally protected by the U.S. Constitution. From a Western cultural standpoint, although not perfect, this doctrine seems to function reasonably well for settling conflicts arising from issues of ownership and use/misuse of informa-

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From Your Colleagues

Amy Groom

IHS Immunization Program Manager

Let's clear up any confusion over the availability of the HPV vaccine

There has been confusion over the availability of the HPV vaccine to all eligible AI/AN females. When the vaccine was first released some states placed age restrictions on usage. Apparently those restrictions have now been removed in all states with significant AI/AN populations. Unfortunately many clinics within the Indian Health Service and tribal health system still have out of date information that the HPV vaccine is restricted to certain age groups.

Please read Ms. Groom's message below. All AI/AN females up through age 18 years are eligible for free vaccine from the Vaccines for Children program in your state. If you have any questions about your ability to receive HPV vaccine for all AI/AN females between ages 11-18 years please contact your state immunization coordinator from the link that Ms. Groom has supplied. If there is any state that is limiting the HPV vaccine for AI/AN females please let me know.

—Steve Holve, MD

Chief Clinical Consultant in Pediatrics

The programs that are restricting are offering it to 11-18 only, not 9-18, so while a restriction, it isn't as restrictive as it had been. And of those, 2 of the 3 programs with restrictions are actually cities, and not cities with a significant AI/AN population (and no urban Indian facility). The other is a state (PA) with no federally or state recognized tribe and no IHS or tribal facility, so I doubt that is an issue for the folks you are talking with. Every other state, per AIM and per CDC, is offering the HPV vaccine to all VFC eligible females (which would include all AI/AN) in accordance with the ACIP recommendation—that is to say, to all 9-18 year olds.

There may be some lingering confusion or communication issues related to the earlier restrictions that some states placed when the vaccine first came out, so I would encourage people to contact their VFC program directly and ask for the specific guidance related to HPV. If there are in fact states that are still restricting the vaccine we can look into it to see what the situation is.

If people need assistance identifying the appropriate contact person at the state, I am happy to help—a list of all the VFC and Immunization Program Managers for each state is also available at: www.immunize.org/coordinators

STD Corner

**Lori de Ravello,
National IHS STD Program**

**American Indian women,
HIV/AIDS, and health
disparity**

Data are presented regarding the prevalence of HIV/AIDS among American Indian women. Health disparities found among American Indians are discussed and biological, economic, social, and behavioral risk factors associated with HIV are detailed. Recommendations are suggested to alleviate the spread of HIV among American Indian women and, in the process, to diminish a culture of treatment malpractice and a weakening of treatment ethics, racism, and genderism.

Vernon IS. American Indian women, HIV/AIDS, and health disparity. Subst Use Misuse. 2007;42(4):741-52

Hot Topics

Obstetrics

SBE prophylaxis not recommended for cesarean delivery or genitourinary procedures

CONCLUSIONS: The major changes in the updated recommendations include the following: (1) The Committee concluded that only an extremely small number of cases of infective endocarditis might be prevented by antibiotic prophylaxis for dental procedures even if such prophylactic therapy were 100% effective. (2) Infective endocarditis prophylaxis for dental procedures should be recommended only for patients with underlying cardiac conditions associated with the highest risk of adverse outcome from infective endocarditis. (3) For patients with these underlying cardiac conditions, prophylaxis is recommended for all dental procedures that involve manipulation of gingival tissue or the periapical region of teeth or perforation of the oral mucosa. (4) Prophylaxis is not recommended based solely on an increased lifetime risk of acquisition of infective endocarditis. (5) Administration of antibiotics solely to prevent endocarditis is not recommended for patients who undergo a genitourinary or gastrointestinal tract procedure. These changes are intended to define more clearly when infective endocarditis prophylaxis is or is not recommended and to provide more uniform and consistent global recommendations.

Wilson W et al Prevention of Infective Endocarditis. Guidelines From the American Heart Association. A Guideline From the American Heart Association Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group. Circulation. 2007 Apr 19

OB/GYN CCC Editorial

Please change all your SBE prophylaxis guidelines

The 2007 SBE prophylaxis guidelines are remarkable because they use levels of evidence for practice guidelines and classifications of recommendations.

Uncomplicated vaginal or cesarean delivery is not a routine indication for antibiotic prophylaxis because the rate of bacteremia is low with these procedures. However, women with the highest risk cardiac conditions described above who are undergoing uncomplicated vaginal delivery can be given the option of antibiotic prophylaxis. If bacteremia is suspected during vaginal or cesarean delivery, antibiotic prophylaxis should be administered to these patients with the highest risk cardiac conditions.

If antibiotic prophylaxis is given, the recommended drugs noted above are all safe at the time of delivery.

Indications for prophylaxis — Prophylaxis was recommended only in those settings associated with the highest risk of developing an adverse outcome if infective endocarditis (IE) were to occur. The following cardiac conditions were considered to meet this criterion:

- Prosthetic heart valves, including bioprosthetic and homograft valves.
- A prior history of IE.
- Unrepaired cyanotic congenital heart disease, including palliative

shunts and conduits.

- Completely repaired congenital heart defects with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first six months after the procedure.
- Repaired congenital heart disease with residual defects at the site or adjacent to the site of the prosthetic device.
- Cardiac valvulopathy in a transplanted heart.

No longer indicated—Common valvular lesions for which antimicrobial prophylaxis is no longer recommended include bicuspid aortic valve, acquired aortic or mitral valve disease (including mitral valve prolapse with regurgitation and those who have undergone prior valve repair), and hypertrophic cardiomyopathy with latent or resting obstruction.

Gynecology

2006 consensus guidelines for the management of abnormal cervical cancer screening

A group of 146 experts representing 29 organizations and professional societies met September 18-19, 2006, in Bethesda, MD, to develop revised evidence-based, consensus guidelines for managing women with abnormal cervical cancer screening tests. Recommendations for managing atypical squamous cells of undetermined significance and low-grade squamous intraepithelial lesion (LSIL) are essentially unchanged. Changes were made for managing these conditions in adolescents for whom cytological follow-up for 2 years was approved. Recommendations for managing high-grade squamous intraepithelial lesion (HSIL) and atypical glandular cells (AGC) also underwent only minor modifications. More emphasis is placed on immediate screen-and-treat approaches for HSIL. Human papillomavirus (HPV) testing is incorporated into the management of AGC after their initial evaluation with colposcopy and endometrial sampling. The 2004 Interim Guidance for HPV testing as an adjunct to cervical cytology for screening in women 30 years of age and older was formally adopted with only very minor modifications.

Wright TC Jr et al 2006 consensus guidelines for the management of women with abnormal cervical cancer screening tests Am J Obstet Gynecol. 2007 Oct;197(4):346-55

Editorial comment: Alan Waxman, Univ. of New Mexico (Retired IHS OB/GYN CCC)

Putting the 2006 Consensus Guidelines into perspective

In 2001, the American Society for Colposcopy and Cervical Pathology (ASCCP) responded to the “new” 2001 revision of the Bethesda nomenclature for abnormal Pap tests by convening a conference of experts to evaluate available scientific evidence and recommend management options. The big news in 2001 was the recommendations regarding use of HPV DNA testing as a triage for the ASCUS Pap. This has become widely implemented as “Reflex HPV” testing. In the years since 2001, numerous studies have been published on the natural history of HPV and cervical dysplasia and on the effects of treatment

on subsequent pregnancy. In addition, HPV DNA testing received FDA approval for use as an adjunct to the Pap test, and data from HPV vaccine trials has become available. So it seemed a good time to review and revise the ASCCP Guidelines.

The Consensus Conference process was similar to that employed 5 years earlier. Diagnosis-specific workgroups composed of physicians, expert in cervical disease, were assigned to review the literature since 2000. Preliminary recommendations were posted on a web bulletin board for comment from interested parties worldwide. By the time the consensus conference was convened in mid-September, 2001, a set of fairly mature recommendations had been developed. At the conference, each recommendation was debated by 146 representatives of 29 professional organizations and government agencies. Each recommendation was voted up or down, revised and voted on again as needed. The resulting 2006 Guidelines were published this month in the American Journal of Obstetrics and Gynecology and are available free to the public at www.asccp.org.

The new guidelines include a number of major changes that will affect the way we care for women with abnormal Pap tests. Without question, the most radical of these is in the recommended management of adolescents with LSIL or ASC-US. This is a logical progression of American Cancer Society's 2002 recommendation to delay the first Pap test in adolescent women until about three years after the onset of sexual activity or age 21. The 2006 ASCCP Guidelines acknowledge the high prevalence of HPV infection in women under age 21, but also the high probability of spontaneous resolution of SIL and very low incidence of invasive cancer in this age group. In addition several studies have shown that treatment of dysplasia is associated with an increase in premature births with subsequent pregnancy. As a result, the 2006 Guidelines recommend deferring colposcopy for adolescent women with LSIL or ASC-US for two years, while monitoring with cytology annually, and defaulting to colposcopy only if a follow-up Pap test progresses to HSIL or if it remains ASC-US or worse at two years. This approach should identify those few young women at risk of developing cancer and prevent cost, discomfort, anxiety, and potential perinatal morbidity for the large number with minimally abnormal Pap results.

The field of cervical cancer screening and HPV continues to produce a large body of innovative research. With the approval and widespread implementation of the HPV Vaccine we are likely to see the "new" 2006 Guidelines revised and improved upon in the future. In the meantime, they offer those of us caring for women a well thought out approach to the abnormal Pap test that's based on today's most current evidence.

Child Health

Traumatic events and alcohol use disorders among American Indian adolescents

Researchers analyzed interviews with 432 American Indian adolescents and young adults between the ages of 15 and 24. The participants were enrolled tribal members living on or near two closely related Northern Plains Indian reservations. As part of a larger survey on mental health, interviewers asked the participants if they had experienced any of 16 types of traumatic events and about their use of alcohol.

Over one-fourth (26 percent) of those interviewed were diagnosed

with alcohol use disorders. Overall, 21 percent had experienced one severe traumatic event, 10 percent had experienced two, and 16 percent had experienced three or more. Young adults (aged 20-24) experienced more traumatic events than adolescents (aged 15-19), as did participants in both age groups who reported that their parents used alcohol while they were growing up.

The odds for alcohol use disorders increased from nearly twofold for one trauma to somewhat less than fourfold for three or more traumas compared with no trauma. These results held after adjusting for age, gender, and parental alcohol use, suggesting a dose-response effect of trauma on alcohol disorders among American Indians living on or near reservations.

Boyd-Ball AJ et al Traumatic events and alcohol use disorders among American Indian adolescents and young adults. J Trauma Stress. 2006 Dec;19(6):937-47.

Chronic disease and illness

Aging and prevalence of CVD risk factors in American Indians: the Strong Heart Study

Although mortality rates from CVD in the United States continue to decrease, rates are rising among Native American Indians and are now likely exceed those of the general population. Also, CVD is the leading cause of death in American Indians beginning at age 45 compared with age 65 for the U.S. general population. As older American Indians age, more of them develop hypertension, diabetes, and low levels of high density lipoprotein cholesterol (HDL-C), all risk factors for developing cardiovascular disease, according to this study.

The researchers examined the development of major CVD risk factors among a rural group of 4,549 American Indians aged 45 to 74 during initial examination in 1989 to 1991 and 8 years later. Their work was part of the Strong Heart Study of 13 predominantly poor tribes of American Indians. This aging group had decreased prevalence of smoking and no consistent changes in adverse HDL-C and low-density lipoprotein-cholesterol (LDL-C) profiles. However, the group had substantial increases in the prevalence of hypertension and diabetes, two of the most important CVD risk factors.

For example, prevalence of hypertension increased from 42.2 percent at the initial examination to 61.3 percent among men 8 years later and from 36.4 percent to 60.3 percent among women. The prevalence of hypertension in this group (aged 40-59) was comparable with the 65 percent hypertension rate among an older group (60 years and older) that participated in the National Health and Nutrition Examination Survey (NHANES).

Diabetes remained markedly and disproportionately high in this age group of Native American Indians. Prevalence increased from 41.4 to 47.4 percent among men and from 48.4 to 55.8 percent among women during the study period—three times higher than the 16.4 percent of people with diabetes among a similar age group in the 1994 NHANES. Men had a nonsignificant decrease in LDL-C and men and women initially had rapid increases in the prevalence of low HDL-C, which may have been affected by factors such as diabetes or insulin resistance that were also associated with this group.

Rhoades DA, Welty TK et al Aging and the prevalence of cardiovascular disease risk factors in older American Indians: the Strong Heart Study. J Am Geriatr Soc. 2007 Jan;55(1):87-94.

Features

ACOG, American College of Obstetricians and Gynecologists Viral Hepatitis in Pregnancy

Summary of Recommendations and Conclusions

The following recommendations are based on good and consistent scientific evidence (Level A):

- Routine prenatal screening of all pregnant women by HBsAg testing is recommended.
- Newborns born to hepatitis B carriers should receive combined immunoprophylaxis consisting of HBIG and hepatitis B vaccine within 12 hours of birth.
- Hepatitis B infection is a preventable disease, and all at-risk individuals, particularly health care workers, should be vaccinated. All infants should receive the hepatitis B vaccine series as part of the recommended childhood immunization schedule.
- Breastfeeding is not contraindicated in women with HAV infection with appropriate hygienic precautions, in those chronically infected with hepatitis B if the infant receives HBIG passive prophylaxis and vaccine active prophylaxis, or in women with HCV infection.

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

- Routine prenatal HCV screening is not recommended; however, women with significant risk factors for infection should be offered antibody screening.
- Route of delivery has not been shown to influence the risk of vertical HCV transmission, and cesarean delivery should be reserved for obstetric indications in women with HCV infection.

The following recommendations are based primarily on consensus and expert opinion (Level C):

- The risk of transmission of hepatitis B associated with amniocentesis is low.
- Susceptible pregnant women who are at risk for hepatitis B infections should be specifically targeted for vaccination.

Viral Hepatitis in Pregnancy. ACOG Practice Bulletin No. 86. American College of Obstetricians and Gynecologists. Obstet Gynecol 2007;110:941-55.

Breastfeeding

Amy Patterson, California Area*

Breastfeeding Promotion:

Good Public Health Policy (first of a 3 part series)

Why do we care about breastfeeding?

Babies, mothers, and society at large all benefit from breastfeeding. Breast milk is a complete form of nutrition for infants. Breast milk has just the right amount of fat, sugar, water, and protein needed for a baby's growth and development, and is easier to digest than formula. As a result, breastfed infants tend to gain less unnecessary weight. This may carry over into adulthood. A number of studies have shown that children and adults who were breastfed are less likely to be overweight compared to those who were never breastfed. Breastfeeding has the potential to help stem the epidemic of childhood and adult obesity in the United States.

Breastfeeding also promotes good health. Breast milk contains antibodies that can protect infants from bacterial and viral infections; formula does not contain these antibodies. Breastfed babies are less likely to be hospitalized for illness than formula-fed babies. ¹ Breastfed infants also have lower rates of asthma and diabetes later in life. Research suggests that exclusive breastfeeding for at least the first 4 months is preventive for asthma and other allergies in children. ² Breastfeeding has also been correlated with a lower prevalence of type 2 diabetes in adult American Indians. ^{3,4}

By contrast, babies who are not breastfed are sick more often and have more doctor visits. They are more likely to develop a wide range of infectious diseases including ear infections, diarrhea, and respiratory illnesses. The difference in health status is stark: infants who are not breastfed are 21% more likely to die within their first year than breastfed babies in the in the U.S. ⁵ A few studies suggest that infants who are not breastfed have higher rates of sudden infant death syndrome (SIDS) in the first year of life. ^{6,7} The health disparities continue even after the first year; people who were not breastfed have higher rates of type 1 and type 2 diabetes, lymphoma, leukemia, Hodgkin's disease, overweight and obesity, high cholesterol and asthma. ⁸

The benefits of breastfeeding extend to nursing mothers as well. Nursing uses up extra calories, making it easier to lose weight gained during pregnancy. Breastfeeding lowers the long-term risk of breast and ovarian cancers, and possibly the risk of hip fractures and osteoporosis after menopause.

ACOG

Routine Thyroid Screening Not Recommended for Pregnant Women

ABSTRACT: Subclinical hypothyroidism is diagnosed in asymptomatic women when the thyroid-stimulating hormone level is elevated and the free thyroxine level is within the reference range. Thyroid hormones, specifically thyroxine, are essential for normal fetal brain development. However, data indicating fetal benefit from thyroxine supplementation in pregnant women with subclinical hypothyroidism currently are not available. Based on current literature, thyroid testing in pregnancy should be performed on symptomatic women and those with a personal history of thyroid disease or other medical conditions associated with thyroid disease (eg, diabetes mellitus). Without evidence that identification and treatment of pregnant women with subclinical hypothyroidism improves maternal or infant outcomes, routine screening for subclinical hypothyroidism currently is not recommended.

Subclinical Hypothyroidism in Pregnancy. ACOG Committee Opinion No. 381. American College of Obstetricians and Gynecologists. Obstet Gynecol 2007;110:959-60

Breastfeeding has also been linked with a reduced risk of type 2 diabetes, and the protective effect increases with exclusivity and duration. 9 Exclusive breastfeeding (meaning no supplementing with formula) also delays the return of normal ovulation and menstrual cycles, though it should not be relied upon as a fail-safe form of birth control.

Breastfeeding also makes a nursing mother's life easier; it saves time and money, and is more convenient than bottle feeding. There are no bottles and nipples to sterilize, and no risk of contamination, as there is with formula. A mother can give her baby immediate satisfaction by providing breast milk when her baby is hungry. Breastfeeding requires a mother to take some quiet time for herself and her baby, and helps them bond. Physical contact is important to newborns and can help them feel more secure, warm and comforted.

References online

Domestic Violence

Denise Grenier, Tucson/Rachel Locker, Warm Springs

Coaching Boys into Men AI/AN Poster

The FVPPF launches two new posters for use in American Indian/Alaska Native (AI/AN) communities! The posters, part of two current FVPPF campaigns: Coaching Boys into Men and Fathering After Violence, may be used in any community setting frequented by men and boys. This may include tribal offices, schools, gyms, batter's intervention programs, health care facilities and visitation centers.

About the Coaching Boys Into Men Campaign

Men—as fathers, brothers, coaches, teachers, uncles and mentors—are in a unique position to prevent domestic violence through action and conversation. Over the past five years, the Family Violence Prevention Fund (FVPPF) has refined its public education strategy to focus on men and boys as a critical part of the national movement to end violence against women and girls. Coaching Boys into Men (CBIM) is the result of this shift - helping stop violence before it starts. The campaign's core goal is to inspire men to teach boys to respect women and that violence never equals strength. Learn more about the Coaching Boys Into Men Campaign. Alternate poster versions are available for diverse communities.

The AI/AN CBIM poster was developed by a committee of leaders working in AI/AN communities and on violence prevention and is co-sponsored by Mending the Sacred Hoop Technical Assistance Project.

Contact Denise.Grenier@ihs.gov

International Health Update

Claire Wendland, Madison, WI

Treating schizophrenia in poorer countries: Old dilemmas and new directions

Although for many years the conventional wisdom in international psychiatry held that schizophrenia had a better prognosis in the Third World than in the First, this belief has recently been called into question. Evidence suggests that conditions for the chronically mentally

ill may be changing for the worse, in part because rapid social and economic change are undermining the family-based care that has traditionally provided for people with schizophrenia. (Interestingly, income inequality and urbanization are linked with poor outcomes even more strongly than poverty per se). Mental health has sometimes been called the Cinderella of international public health, and with good reason. Developing countries typically devote less than 1% of their already limited health budgets to mental health, and have on average one to two qualified mental health providers for every million population – a population that should include three to five thousand schizophrenics, as rates of schizophrenia appear to vary little among societies. Little or no community-based care for the chronically mentally ill exists, and psychiatric hospitals are few, large, and undersupplied with staff and therapies. Some evidence suggests that human rights abuses of the mentally ill are on the rise.

In a recent PLoS Medicine article, three psychiatrists with experience in India and Pakistan propose new models for treating schizophrenics. The director of a schizophrenia research foundation, R. Thara, argues that simply treating more people with antipsychotics will reduce stigma by pushing communities to accept medical (rather than magical or religious) explanations for psychotic disorders. National mental health programs can follow up with campaigns intended to destigmatize schizophrenia the way previous campaigns worked to destigmatize leprosy. Saeed Farooq, a psychiatrist from Pakistan, takes a similar approach, but one built on the model of tuberculosis. Farooq proposes that patients with schizophrenia be given free antipsychotic drugs under supervision for two years, echoing the “Directly Observed Therapy, Short-Course” (DOTS) used more-or-less successfully in many countries to control tuberculosis. Families already provide the most expensive care for these patients, Farooq argues; surely the state can shoulder a small part of the burden by paying for the drugs. Like Thara, he believes effective treatment will reduce stigma and insure that more sufferers will seek help. Vikram Patel proposes a more integrated model in which minimally trained community health workers act as case finders, referring patients to health practitioners who can make the diagnosis and initiate drug treatment. The patients are then referred back to the community health worker, who will follow up for medication adherence, refer to social welfare organizations, and help to strengthen employment options.

All three models use antipsychotics as a lever to change community perceptions of schizophrenia. All three are hazy on issues of cost and the possibility of coercion. At least one of these strategies (the DOTS analogue) is being tested in an RCT now. We should soon have better information on methods that work – or don't work – for this serious problem in international health.

Patel V, Farooq S, Thara R. What is the best approach to treating schizophrenia in developing countries? PLoS Medicine 4(6):e159, June 2007

MCH Headlines

Judy Thierry HQE

Child passengers are exposed to secondhand smoke

Similar to injuries to children from improperly installed car seats, childhood illness from secondhand smoke exposure in cars is prevent-

able. The National Highway Traffic Safety Administration (NHTSA) and the U.S. Environmental Protection Agency (EPA) Indoor Environments Division are dedicated to protecting children from the heightened risk of injury and illness in cars. With your help, parents and caregivers can learn how to prevent child passengers from being injured and becoming ill from secondhand smoke in cars.

The U.S. Surgeon General has reported that secondhand smoke is a known cause of respiratory problems, ear infections, asthma attacks, and even sudden infant death syndrome in infants and children.

While many smokers open a window or increase the ventilation in their cars, the child passenger is still exposed to secondhand smoke. When you are educating families about car seat safety, you may also want to give them written information, such as EPA's Smoke-free Homes & Cars educational materials which are free and available for downloading and distribution.

What you can do to help:

- Share this information with your affiliates, colleagues, and others in the child passenger safety community.
- Download materials from EPA to give to parents and caregivers during car seat safety inspections or other car safety events.
- Talk to organizations in your community that reach parents and caregivers of young children about the effects of secondhand smoke.

To download, print and/or order Smoke free Homes and Cars materials, see www.epa.gov/smokefree/publications.html

For more information on EPA's Smoke-free Homes and Cars Program, see www.epa.gov/smokefree or call Alexander Sinclair, U.S. Department of Transportation/NHTSA (202) 366-2723

Medical Mystery Tour

Endometriosis: Where is the real truth?

Here are the answers with discussions and references to last month's questions

- 1.) Endometriosis virtually always progresses in severity without treatment
False

It appears that endometriosis is a dynamic process of chronic and constant remodeling, not one of linear growth, which was confirmed in studies with African monkeys. As such, determining where along the course, or continuum, any individual patient might be at any one time will better let us tailor treatment to the status of that woman.

D'Hooghe TM, et al Serial laparoscopies over 30 months show that endometriosis in captive baboons (Papio anubis, Papio cynocephalus) is a progressive disease. Fertil Steril. 1996 Mar;65(3):645-9

Having said that....

The degree of response to laparoscopy is parallel to the extent of the disease.

In the first trial (Sutton 1994), women with stage I disease (a large proportion of study participants) were less likely to improve after their surgical procedure, whereas 74 percent of stage II-IV disease patients achieved pain relief. Most of the women in the second trial (Abbott

2004) had stage II-IV disease, which may account, at least in part, for the higher surgical success rate reported in this study.

Sutton CJ, et al Prospective, randomized, double-blind, controlled trial of laser laparoscopy in the treatment of pelvic pain associated with minimal, mild, and moderate endometriosis. Fertil Steril. 1994 Oct;62(4):696-700

Abbott J, et al Laparoscopic excision of endometriosis: a randomized, placebo-controlled trial. Fertil Steril. 2004 Oct;82(4):878-84

- 2.) Postoperative medical therapy has been shown to produce significant benefit in reducing pain in women who have treated for endometriosis laparoscopically
False

REVIEWERS' CONCLUSIONS: There is insufficient evidence from the studies identified to conclude that hormonal suppression in association with surgery for endometriosis is associated with a significant benefit with regard to any of the outcomes identified.

Yap C, et al Pre and post operative medical therapy for endometriosis surgery. Cochrane Database Syst Rev. 2004;(3):CD003678

- 3.) Approximately 40% of women with endometriosis and pain will derive symptomatic benefit from treatment with placebo
True

The placebo response to any treatment in chronic pelvic pain is roughly 40% for a period of at least 3 months.

Abbott J, et al Laparoscopic excision of endometriosis: a randomized, placebo-controlled trial. Fertil Steril. 2004 Oct;82(4):878-84

Dlugi AM, et al Lupron depot (leuprolide acetate for depot suspension) in the treatment of endometriosis: a randomized, placebo-controlled, double-blind study. Lupron Study Group. Fertil Steril. 1990 Sep;54(3):419-27

Sutton CJ, et al Prospective, randomized, double-blind, controlled trial of laser laparoscopy in the treatment of pelvic pain associated with minimal, mild, and moderate endometriosis. Fertil Steril. 1994 Oct;62(4):696-700

- 4.) Surgical modalities, such as electrocautery, laser, or harmonic scalpel appear to be equally effective in treating endometriosis
True

Conservative surgery is typically accomplished by laparoscopy. Adequate treatment of endometriosis is usually possible, and desirable, at the initial diagnostic procedure. This offers the advantage of ablating the implants and adhesions while avoiding possible disease or symptom progression. The currently available methods of ablation appear to be equally effective and the choice of modality is dependent on the experience of the surgeon.

Early surgical therapy also avoids the expense and side effects of medical therapy. Potential disadvantages include inadvertent damage to adjacent organs (eg, bowel and bladder), infection, and mechanical trauma to pelvic structures that may result in greater adhesion formation.

Conservative surgery involves excision, fulguration, or laser vaporization of endometriotic implants and removal of associated adhesions. Its goal is restoration of normal pelvic anatomy. Laparo-

scopic treatment offers advantages over laparotomy, including shorter hospitalization, anesthetic, and recuperation times.

Laparotomy may be more advisable, however, when dealing with extensive adhesions or invasive endometriosis located near structures such as the uterine arteries, ureter, bladder, and bowel. Ancillary procedures to laparotomy may include presacral neurectomy, uterosacral interruption of sensory nerves innervating the pelvis, and uterine suspension to avoid adhesion formation from the cul-de-sac to the posterior surface of the uterus, tube, and ovaries.

Kennedy S et al ESHRE guideline for the diagnosis and treatment of endometriosis. Hum Reprod 2005 Oct;20(10):2698-704. Epub 2005 Jun 24.

5.) Surgical aspiration is the preferred treatment method for women with ovarian endometrioma
False

CONCLUSION(S): Laparoscopic cystectomy of endometriomas is a better choice than fenestration and coagulation because the former technique leads to a lower recurrence of signs and symptoms and a lower rate of reoperation and a higher cumulative pregnancy rate than the latter.

Alborzi S, et al A prospective, randomized study comparing laparoscopic ovarian cystectomy versus fenestration and coagulation in patients with endometriomas. Fertil Steril. 2004 Dec;82(6):1633-7

6.) Treatment with a GnRH analog for 6 months is associated with an increased fracture risk in women with endometriosis
False

This study examined the effect of a low-dose E and pulsed progesterone hormone therapy (HT) regimen for add-back during long-term GnRH-agonist therapy on bone mineral density (BMD) in five patients with stage IV endometriosis. Bone mineral density was stable after initiation of HT for the entire follow-up period (up to 10 years). One patient stopped her treatment on two occasions to conceive and was successful each time with delivery of a normal baby. No patient had return of pelvic pain after HT add-back.

Bedaiwy MA, Casper RF. Treatment with leuprolide acetate and hormonal add-back for up to 10 years in stage IV endometriosis patients with chronic pelvic pain. Fertil Steril. 2006 Jul;86(1):220-2. Epub 2006 May 23.

Zupi E et al Add-back therapy in the treatment of endometriosis-associated pain. Fertil Steril. 2004 Nov;82(5):1303-8.

7.) Interstitial cystitis coexists with endometriosis in approximately 10 percent of cases
False

CONCLUSIONS: Results of this prospective study show that interstitial cystitis and endometriosis may frequently coexist in patients with chronic pelvic pain. A positive Potassium Sensitivity Test accurately predicted the presence of interstitial cystitis in 96% of these patients with chronic pelvic pain, as confirmed by cystoscopic hydrodistention. It is necessary to consider the diagnosis of endometriosis and interstitial cystitis concurrently in the evaluation of patients with chronic pelvic pain to avoid unnecessary delay in identifying either

condition.

Chung MK et al Interstitial cystitis and endometriosis in patients with chronic pelvic pain: The "Evil Twins" syndrome.

JSLs. 2005 Jan-Mar;9(1):25-9.

Extra credit

Promising therapies for endometriosis include:

- Aromatase inhibitors
- RU-486
- Levonorgestrel containing IUDs
- Antiangiogenic cancer therapy

Answer: All of the above

- Aromatase inhibitors

CONCLUSION(S): Fourteen of 15 patients with refractory endometriosis achieved significant pain relief using anastrozole and 20 microg ethinyl estradiol/0.1 mg levonorgestrel with minimal side effects. This treatment for endometriosis is a promising new modality that warrants further investigation.

Amsterdam LL et al Anastrozole and oral contraceptives: a novel treatment for endometriosis. Fertil Steril. 2005 Aug;84(2):300-4.

-RU-486, Mifepristone, an antiprogestogen

Medical treatment of endometriosis relies on drugs that suppress ovarian steroids and induce an hypoestrogenic state that causes atrophy of ectopic endometrium. Gonadotrophin-releasing hormone (GnRH) analogues, danazol, progestogens and oestrogen-progestin combinations have all proven effective in relieving pain and reducing the extent of endometriotic implants. However, symptoms often recur after discontinuation of therapy and hypoestrogenism-related side effects limit the long-term use of most medications. Furthermore, these therapies are of limited value in patients with a desire to become pregnant because they inhibit ovulation. An important target for current research is to identify effective therapies that can be safely administered in the long term. GnRH analogues with add-back therapy, progestogens and continuous oral contraceptive are options available for a medium or long-term systemic treatment. Mifepristone, an antiprogestogen, may constitute an alternative if encouraging preliminary data on its effectiveness and tolerability are confirmed. A very appealing area of interest is the possibility of treating

Fedele L, Berlanda N. Emerging drugs for endometriosis. Expert Opin Emerg Drugs. 2004 May;9(1):167-77

-Levonorgestrel containing IUDs

CONCLUSIONS: One small study has shown that postoperative use of the LNG-IUS reduces the recurrence of painful periods in women who have had surgery for endometriosis. There is a need for further well-designed RCTs of this approach.

Abou-Setta AM et al Levonorgestrel-releasing intrauterine device (LNG-IUD) for symptomatic endometriosis following surgery.

Cochrane Database Syst Rev. 2006 Oct 18;(4):CD005072. Review.

-Antiangiogenic cancer therapy

In summary, antiangiogenic agents inhibited the growth of explants in an in vivo model of endometriosis by disrupting the vascular sup-

ply, and this effect is likely to apply to the human disease. These findings suggest that antiangiogenic agents may provide a novel therapeutic approach for the treatment of endometriosis.

Hull ML, et al *Antiangiogenic agents are effective inhibitors of endometriosis. J Clin Endocrinol Metab.* 2003 Jun;88(6):2889-99.

Midwives Corner, Lisa Allee, CNM, Chinle

If you gotta use something, nitrous oxide might be better than narcotics and epidurals

Judith Rooks and Judith Bishop, two well known midwives in the United States, present information about nitrous oxide—a labor pain medication available to women in many countries, but used very little in the US. Rooks presents the evidence that self administered nitrous oxide is safe and effective. It is safe for mother and baby because it is eliminated by the lungs rather than the liver, so it has transient effects rather than cumulative. It is more effective than opioids and does not have the negative effects on babies that narcotics are well known for nor the maternal side effects of epidurals. She stresses that self administration is crucial for safety and efficacy and has the added benefit of giving women the real sense of control over their pain management. Rooks also covers the occupational and environmental concerns about nitrous oxide that are largely unfounded. Bishop shares the standardized procedure for nitrous oxide administration by CNMs at University of California San Francisco.

As I am sure you all have realized I am a staunch supporter of natural, non-medicated birth. I really think it is the gold standard. So, when I saw this article my initial reaction was “oh no, not another drug.” But I am also fully grounded in reality and have been with enough women in labor to know that medication for pain is needed and/or desired by some women. As I read on about nitrous oxide for labor, I could see that it is superior in many ways to the narcotics we usually use. The speed at which it takes effect (a minute or less) and wears off (also really quick), the lack of sleepiness in the babies, the self administration giving women complete control, and the fact that it does not slow labor and that continuous EFM nor IV fluids are needed are all huge pluses for nitrous. I was also fascinated that Rooks’ description of the experience of nitrous oxide—“diminished pain, or a continued awareness of pain without feeling bothered by it...a kind of strange sensation of feeling the pain while feel-

ing a sense of bliss...so the pain may still exist for some women, but the gas may create a feeling of: “Painful contraction? Who cares?!”—was exactly my experience when I was trained in hypnobirthing. When deeply relaxed (hypnotized) I didn’t care that someone was squeezing my ankle as hard as they could, but when I was no longer in that alpha state I rapidly pulled my ankle away yelling “Ow!” I have guided laboring women to that state and seen it have wonderful results. One young woman said “That wasn’t so bad” right after she had her first baby! So, I can see nitrous as a great tool in our bag of tricks if, for whatever reason, deep relaxation is not happening for a laboring woman. Unfortunately, however, most women in the US do not have, or even know about, this option. This is something that the midwifery community needs to explore and change. If you have experience with nitrous, are working to bring nitrous oxide to your practice, or are interested in doing so, please email me and the listserve with your observations and thoughts.

Rooks, JP *Use of nitrous oxide in midwifery practice—complementary, synergistic, and needed in the United States. Journal of Midwifery & Women’s Health* 2007 May-Jun;52(3):186-9

Bishop, JT *Administration of nitrous oxide in labor: expanding the options for women. Journal of Midwifery & Women’s Health* 2007 May-Jun;52(3):308-9

Navajo News

John Balintona, Shiprock

Acute Appendicitis and Pregnancy

Appendicitis occurs in about 1 in 5000 pregnancies making it the most common nonobstetric surgical event during pregnancy. This condition can occur in any trimester but seems to be more common in the second trimester. Obstetric providers should have high clinical suspicion and be prepared to start a treatment regimen for the patient.

Acute appendicitis during pregnancy is a potentially life-threatening condition for the mother and could possibly affect the well being of the fetus. Delay in making the diagnosis and initiating intervention contributes to increased morbidity and mortality.

Because the uterus displaces the omentum into the upper abdomen, the infectious process may not be confined and disseminate more rapidly. The increase in vascularity during pregnancy may make the inflammatory response more intense. The acuity of this response tends to increase as gestation increases and therefore maternal morbidity and

Midwives Corner

Repeat HIV testing in pregnancy identifies opportunities for antiretroviral prophylaxis

RESULTS: Fifty-four HIV-infected women were identified. Four primary HIV infections were recognized, with median estimated seroconversion at 22 weeks of gestation. All 4 women denied new sex partners, alcohol, and illegal drug use during pregnancy. Three of the 4 mother-infant pairs received antiretroviral medications. One infant was infected perinatally, with positive HIV DNA polymerase chain reaction at birth. Questionnaire data identified 2 additional women with HIV that was likely acquired during pregnancy (identified by rapid testing at labor and delivery), which suggests that 6 of 54 HIV-infected women (11%) in the MIRIAD study had primary infection during pregnancy.

CONCLUSION: Repeat HIV testing in pregnancy can identify opportunities for antiretroviral prophylaxis and should be used in areas of high HIV prevalence.

Nesheim S, et al *Primary human immunodeficiency virus infection during pregnancy detected by repeat testing. Am J Obstet Gynecol.* 2007 Aug;197(2):149.e1-5.

Menopause Management

Hormone therapy has no effect on memory but increases sexual interest

Hormone therapy taken in the first few years after menopause does not appear to affect a woman's memory, but may lead to increased sexual interest. The study also found an increase in sexual interest and thoughts in the women taking hormone therapy. The level of sexual interest reported by women on hormone therapy increased 44 percent and their number of sexual thoughts increased 32 percent compared to the placebo group

CONCLUSIONS: With the power to detect an effect size of $>/=0.45$, this study suggests potential modest negative effects on verbal memory that are consistent with previous hormone therapy trials in older women

Maki PM et al Hormone therapy in menopausal women with cognitive complaints: A randomized, double-blind trial. Neurology. 2007 Sep 25;69(13):1322-30

mortality is highest in the third trimester. Effects on the fetus are mainly due to premature delivery and if there is peritonitis present. Fetal loss rates in uncomplicated appendicitis are about 1%, rising to about 30% if peritonitis occurs.

Diagnosis

The diagnosis of appendicitis during pregnancy can be difficult for several reasons: including the anatomic changes that naturally occur and the similarity of many signs and symptoms of appendicitis and normal pregnancy. The most common clinical signs of acute appendicitis are right lower quadrant abdominal tenderness and vague abdominal pain. Due to the migration of the appendix in the second and third trimester, the pain may be found in the right upper quadrant or right flank. Rebound tenderness and guarding may not be effective diagnostic tools during pregnancy due to the laxity of the abdominal muscles. Anorexia with nausea and vomiting are common, especially in the first and early second trimester, but nevertheless should be evaluated. An elevated leukocyte count associated with appendicitis ranges from 5 – 25,000, which incorporates the normal mild leukocytosis seen in pregnancy. Studies have shown that there is no known distinguishing temperature that separates appendicitis from those that turned out to be falsely positive and therefore fever is only of limited benefit. The use of imaging techniques has proven to be a valuable diagnostic tool in the diagnosis of appendicitis during pregnancy and should be considered in the evaluation of these patients. Both ultrasound and CT have been shown to have acceptable sensitivity and specificity in the diagnosis of appendicitis. Many sources do suggest that due to radiation exposure, ultrasound should be the first imaging modality that is attempted with CT reserved for unsure findings on ultrasound.

Obstetric providers should be cognizant of other medical conditions that may mimic the signs and symptoms of appendicitis. Ectopic pregnancy can present with unilateral lower quadrant pain. Ovarian cysts and torsion can also cause pain and an inflammatory response. Degenerating fibroids have been found in patients with suspected appendicitis, as well as, gall bladder disease and hepatitis. The most common misdiagnosis is pyelonephritis.

Treatment

Many surgeons accept a 15% false positive rate for surgical intervention for suspected appendicitis in nonpregnant patients. Due to the difficulty in diagnosis and the issues related to delay in diagnosis some suggest that a 30% false positive rate is appropriate for pregnant patients. The treatment of

appendicitis is surgical. Laparotomy is viewed as the most common mode, but laparoscopy may be considered especially in the first trimester. Perioperative prophylactic antibiotics may be considered in cases of suspected appendicitis, but appropriate broad-spectrum antibiotics are indicated in cases of gangrene, perforation, or peritonitis. Surgeons should also consider placement of operative site drains especially in scenarios involving perforation and peritonitis. Prophylactic tocolysis may be considered if preterm contractions occur, however, there is no conclusive evidence that this intervention is effective.

Morbidity and mortality from appendicitis during pregnancy occurs with uncertainty in diagnosis and delay in treatment. Obstetric providers have a responsibility in providing an expeditious evaluation and treatment plan for patients with suspected appendicitis.

Oklahoma Perspective

Nathan Tillotson, DO

Hastings Indian Medical Center

Training for Shoulder Dystocia

Shoulder dystocia is an obstetric emergency with serious potential risks for both mother and fetus. The reported incidence ranges from 0.6% to 1.4% among vaginal deliveries. It is an unpredictable event with no cost-effective means of prevention for the large majority of women at higher risk. A study of 236 shoulder dystocia cases reported an 11% rate of postpartum hemorrhage and a 3.8% rate of fourth-degree lacerations. Neonates can experience brachial plexus injuries and fractures of the clavicle and humerus with shoulder dystocia. Fortunately, fewer than 10% of all cases of shoulder dystocia result in a persistent brachial plexus injury.

Training for shoulder dystocia among midwives and obstetricians using low and high-fidelity mannequins has been shown to improve performance: use of basic maneuvers 114 of 140 (81.4%) to 125 of 132 (94.7%), successful deliveries 60 of 140 (42.9%) to 110 of 132 (83.3%), good communication with the patient 79 of 139 (56.8%) to 109 of 132 (82.6%), pre- and posttraining, respectively. Training with the high-fidelity mannequin was associated with a higher successful delivery rate than training with traditional devices: 94% compared with 72% (odds ratio 6.53, $P=.002$). A delivery was considered successful if performed within 5 minutes.

ACOG Practice Bulletin Number 40, Shoulder Dystocia: November 2002.

Perinatology Picks

George Gilson, MFM, ANMC

The Dating Game

"...THE DATING GAME was and still is by all accounts, the premiere game show for singles. It was the forerunner for many imitators such as "Love Connection", MTV's "Singled Out" and numerous others. But they all have the same influence: Chuck Barris, the creator of the one that started it all! "THE DATING GAME" first premiered on December 20-24, 1965 on ABC-TV and remained a fixture on the...."

No, I don't mean the above Dating Game.

I mean Ultrasound Dating - Update 2007

We continuously play "the dating game" in obstetrics. A reliable estimation of when a woman is at term is critically important information for us to have in order to be able to plan for delivery, especially if complications of pregnancy develop later. Women and their families also want to be able to plan for the birth by having a reliable date. We often argue about the importance of "listening to women" (menstrual dates) versus "technology" (ultrasound dates) in making our decisions about when due dates will fall, but, considering the following information, this really should not be an issue.

Women who undergo ovulation induction and/or artificial insemination may have gestational age estimates of +3 days. However, for the vast majority of women, a major problem in using menstrual dates to determine fetal age is the biologic variability in the length of the follicular phase, which is not a normally distributed variable. A higher number of women ovulate late in the cycle (after day 21) than early in the cycle (earlier than day 11). In a large recent study, 3% of the gestational ages by ultrasound evaluation were greater than expected from an optimal menstrual history (indicating early ovulation), and 17% were less (indicating late ovulation). The "pregnancy wheels" we all carry in our pockets (or PalmPilots!) are not able to predict the exact due date because they are set up only for those women (about 52%) who ovulate on cycle day 14.

Early ultrasound therefore has an advantage over even "good" dates. The accuracy of first trimester (6-12 weeks) ultrasounds is also critically influenced by the caliber of the machine and the expertise of the ultrasonographer. These are variables that are usually not uniform from service unit to service unit, and it is important to know your unit's capabilities in order to be able to trust the results they generate. That said, with current equipment, and a capable sonographer, the accuracy of first trimester scans should be +3 days, not the +7 days values generated from data accrued with the older instrumentation. This result takes precedence over menstrual dates, and over first trimester pelvic exams (which are only accurate to +2 weeks). At this stage of pregnancy there is minimal biologic size variability as estimated from crown-rump length (CRL), and it remains the most reliable biometric parameter for estimation of the due date.

Measurement of crown-rump length is generally considerably more accurate than measurement of gestational sac dimensions, so, if no fetal pole is identified (<6 weeks), the exam should ideally be repeated in 1-2 weeks to document both dates, viability, and the location of the pregnancy. The gestational age established by the CRL in the first trimester should be used for the due date, and not changed based on

biometric measurements made later in pregnancy.

In the first half of the second trimester (13-20 weeks), fetal biometry remains quite accurate. The composite parameters used (BPD, HC, AC, FL) to derive the average ultrasound age (AUA) should be accurate to within +7 days at this stage of pregnancy. The machine's computational software uses a regression equation to derive a predicted gestational age from the combined measurements, so one shouldn't just add up the values obtained and divide by 4. Later in the second trimester (21-28 weeks), because of the more pronounced biologic variability in fetal growth, the most recent evidence seems to indicate that the standard deviation of the composite measurements is +14 days. This difference becomes even more pronounced in the third trimester (29-42 weeks) when the accuracy is now reduced to +21 days. These latter values are unfortunately no different from those obtained in the early 1980's with the older equipment, again because of the biologic variability in fetal size as term approaches.

What can you do with the patient who presents late for prenatal care in the early third trimester, with no or "poor" dates? If her fundal height is not congruent with the dates she gives, the question arises whether she is growth restricted, or just premature, or if she is actually farther along than suspected. In a recent WHO study in developing nations, measurement of fundal height proved to be the best screening tool for intrauterine growth restriction, but it was just that, a screening, not a diagnostic, test. Third trimester physical exam has been found to be as inaccurate as +6 weeks, again because of the "bell curve" of fetal size, as normal term infants can weigh 5 1/2 pounds or 9 pounds, and everything in between. Ethnicity and parental size are also important variables to take into consideration.

The best strategy here, time permitting, is to do serial ultrasounds 3 weeks apart. The normal fetus should follow a normal growth curve. Thus, if the first ultrasound gave a gestational age of 29+3 weeks, the subsequent scan in 3 weeks should demonstrate a gestational age of 32+3 weeks. The two estimated dates of delivery (EDD) generated should be comparable, and can then be used to set the anticipated due date, again with the known standard deviations. Scans obtained sooner than 3 weeks apart may be misleading, because of that +3 week standard deviation.

Another "quick and dirty" practical point for patients who present close to term with unknown, or unclear, dates, and who are not diabetic, but in whom an expeditious decision about gestational age needs to be made, is to rely on the biparietal diameter. This assumes the fetal head is not engaged, and a satisfactory BPD can be obtained. As a rough "rule of thumb", if the BPD is >92 mm, the infant is most likely at term. Sonographic estimated fetal weights obtained in the late trimester are no more reliable than clinical estimates however, with a margin of error of at least 20% in either direction (that could be almost 2 pounds for a suspected macrosomic fetus...).

Summary

In order to optimize our care, it would be ideal if all our service units were to use the same standards. This is especially important for regional centers and the individual outlying sites that refer women for delivery to them. From the best available evidence I have found, I would like to recommend that CRL obtained between 6-12 weeks is the most accurate parameter for establishing a due date, and supersedes menstrual dates.

In order to make this a reality, the following assumptions need to be true:

there is a capable sonographer available on a stable basis, as well up to date equipment that is well maintained with an ongoing quality assurance program. If those assumptions are the case, then our service units should use the same standards, listed below.

Average Ultrasound Age	Accuracy
6-12 weeks	+3 days
13-20 weeks	+7 days
21-28 weeks	+14 days
29-42 weeks	+21 days

References online

**Barbara Stillwater
Alaska State Diabetes Program**

Magic Pill Improves Glycemic Control and Decreases Death by 25% for Type 2's

Imagine an inexpensive pill that could decrease the hemoglobin A1c value by 1 percentage point, reduce cardiovascular death by 25%, and substantially improve functional capacity (strength, endurance, and bone density). Diabetes experts would be quick to incorporate this pill into practice guidelines and performance measures for diabetes.

Aerobic and resistance training each improve glycemic control for patients with type 2 diabetes, but the improvement is greatest when both forms of exercise are combined,

CONCLUSION: Either aerobic or resistance training alone improves glycemic control in type 2 diabetes, but the improvements are greatest with combined aerobic and resistance training.

(rapid cesarean delivery..., continued from page 1)

response times by analyzing the timing of responses, assessing the possibility of using simultaneous rather than sequential activation, and building a feedback mechanism into the emergency response concept from the start.

As they have watched Ob Team Stat evolve, thier "choreography" has steadily improved; responding to ob emergencies feels less like being caught in an avalanche and more like downhill skiing. Many of the early skeptics have become ardent proponents of the concept. We believe that this approach has also improved unit morale and "word of mouth" dissemination to other hospitals in our area. Most importantly, it seems that every week, in the lounge "the morning after," we are hearing not about "the disaster last night" but about the "great save."

Catanzarite, V et al OB Team STAT: Developing a better L/D rapid response team. Contemporary OB/GYN, Sep 1, 2007

**OB/GYN CCC Editorial
Improve your facility's response to emergencies through improved teamwork**

As was discussed at the 2007 Women's Health and MCH Conference in August there are simple practical steps to remove error and delay in your response to all emergencies.

Sigal RJ et al Effects of aerobic training, resistance training, or both on glycemic control in type 2 diabetes: a randomized trial. Ann Intern Med. 2007 Sep 18;147(6):357-69

**Women's Health Headlines
Carolyn Aoyama, HQE**

Planning Group—conference on midwifery models of care

Over the next 5 years, Indian Health Service and Health Canada, First Nations Inuit Health Branch (FNIHB) will be collaborating on various maternal and child health issues. The first topic to be explored will be midwifery care of AI/AN and First National/Inuit people.

A group has been formed and planning has begun. We have begun our discussions with differences in midwifery education, credentialing and licensure and the health care delivery systems between the US and Canada. We've had three calls over three months and more frequent follow-up conversations in between.

The planning group needs to be expanded. Please email me if you are an AI/AN midwife working in a IHS, Tribal, or Urban site. I would also like to hear from midwives who have developed one or more models of care to address a specific health disparity, or to improve cultural acceptability. And I would also like to hear from midwives who have significant midwifery experience in I/T/U settings.

Please remember that this activity requires time and commitment. We may not be able to add everyone who expresses an interest, but the idea is to be as inclusive as possible. Please contact me.

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We heard from speakers from Sharp Mary Birch hospital in San Diego (article above) the Institute for Healthcare Improvement, and from your colleagues, e. g., PIMC, Zuni, ANMC, and many others...about do-able methods to improve the system to improve the outcome.

This article highlights these concepts...

- Empowering all staff to 'pull the trigger' on a rapid response
- Simultaneous team activation as a paradigm shift
- Testing the new system

...but there are many other methods.

The lecture notes and presentations from the 2007 Women's Health and MCH Conference will be available here soon: <http://www.ihs.gov/MedicalPrograms/MCH/F/lecNotes.cfm>

(Child Health Notes..., continued from page 3)

tion in biotechnology for members of the dominant culture. However, the author of this article suggests that “the interests of Native groups cannot be accurately understood or assessed within our legal system unless we attempt to understand the different normative conceptions of property, ownership, and privacy that exist for these groups,” and that “claims made by an individual or group that are perceived to be asserting a cultural or spiritual harm based on the alleged misuse or mishandling of blood, tissue, or knowledge gained from DNA analysis may not be cognizable within existing legal theories.” As a function of these and related concerns and histories, indigenous individuals and groups are legitimately suspicious of medical research and biotechnology. Deriving from the concept of “cultural rights” as applied in international human rights law, the creation of legal protection based upon “cultural harm” is offered as a possible solution to these issues for Native people.

Editorial Comment

I must admit that I have at best a rudimentary fluency in legal language and thought. As a result, I am certain that many of the points made in this article passed over my head at least at the 10,000 foot level! Nevertheless, the conceptual framework presented by the author was very useful in helping me to develop a deeper understanding of the concerns and suspicions that Native individuals and groups have with respect to biotechnology and medical research. I have been cognizant of these issues for quite some time but have never really had a complete grasp of the complexity of the concerns. For anyone desiring a better understanding of the potential dangers that biotechnological advances and medical research pose to underrepresented indigenous individuals and populations, I would certainly recommend taking a look at this article. It is well worth the difficulty of delving into the unfamiliar (and uncomfortable) realm of legalese.

Additional Reading

Pevar, S.L. (2004): *The Rights of Indians and Tribes: The Authoritative ACLU Guide to Indian and Tribal Rights*. 3rd Ed. New York, New York University Press.

Singh GK, Kogan MD. Widening socioeconomic disparities in US childhood mortality, 1969-2000. *Am J Public Health*. 2007 Sep;97(9):1658-65.

Editorial Comment

The authors investigate the impact of socioeconomic disadvantage on trends in childhood mortality over a 30 year period. Although socioeconomic status (SES) is a well accepted modulator of childhood mortality, with lower standing having been shown to be inversely related to mortality in a number of studies, the authors claim that theirs is the first study linking measures of poverty to longitudinal trends in mortality. A description of the methods by which this is achieved and a repeat of all of the fascinating results and conclusions is beyond the scope of this review. I would encourage you all to check out this excellent report for yourselves. It really is timely and relevant!

On a positive note, overall mortality rates for children have been

declining over the past three decades. However, the speed of this decline has not been equal for all racial/ethnic groups or socioeconomic strata within our society. As we have observed from childhood injury mortality data recently reviewed in the IHS Child Health Notes,^{1,2} mortality rates for minorities and those standing on the lower rungs of the socioeconomic ladder relative to white, less deprived groups are RISING in the U.S. That is, disparities are increasing rather than decreasing, rendering Goal 2 of Healthy People 2010 (the elimination of health disparities by the year 2010) all but an optimist's fantasy at this point. This paper goes on to suggest that this deterioration in relative mortality appears to be associated with longitudinally increasing inequity in SES within and between certain groups and regions in the U.S., even as the overall economy has improved. A sadder reality could not exist! As the wealthiest and most powerful nation on earth, can't we expect better?

The authors state that, “compared with children in the least deprived socioeconomic quintile, the mortality rate for children in the most deprived socioeconomic quintile was 52% higher in 1969–1971, 65% higher in 1988–1990, and 86% higher in 1998–2000.” Furthermore, due to technical and methodological issues and dilutional effects of SES in the sampling units, these differences likely represent an underestimate of the true mortality, and by extension, disparity. And, this is not to mention the sizable impact that racial misclassification has on underestimating mortality rates for AIAN minorities in studies dependent on data from the National Vital Statistics System.^{1,2}

So, as time runs out on Healthy People 2010 and ever increasing and thoughtful data emerges demonstrating persistent and widening health disparities, I cannot help but wonder: will we redouble our efforts and target their elimination for the year 2020, or will we move on to something new? Sorry for the sarcasm, but I just don't understand why we can't seem to get it right!

References

1. Holve, S.A. ed. (2007 June/July). *IHS Child Health Notes*.

<http://www.ihs.gov/MedicalPrograms/MCH/M/documents/IHScildnotesJune2007.doc>

2. Holve, S.A. ed. (2007 August). *IHS Child Health Notes*.

<http://www.ihs.gov/MedicalPrograms/MCH/M/documents/ICHN807.doc>

SAVE THE DATES

2007 Best Practices and GPRA Measurements Conference

- November 29–30, 2007
- Sacramento, CA
- 11.75 credits, California Area IHS Office
- www.ihs.gov/MedicalPrograms/MCH/F/CN01.cfm#Nov07

2007 National HIV Prevention Conference

- December 2–5, 2007
- Atlanta, Georgia
- Center for Disease Control and Prevention
- www.2007nhpc.org/conferenceinfo.asp

23rd Annual Midwinter Indian Health OB/ PEDS Conference

- February 8–10, 2008
- Telluride, Colorado
- For providers caring for Native women and children
- Contact AWaxman@salud.unm.edu

26th Annual "Protecting Our Children"

- April 20–23, 2008
- Minneapolis, Minnesota
- National American Indian Conference on Child Abuse and Neglect
- www.nicwa.org

Abstract of the Month

- 'Simultaneous team activation' as a paradigm shift
- Can their program improve response times for every hospital?
- New Guidelines for cervical cancer screening are available now

IHS Child Health Notes

- Challenges in Pediatric Rheumatic Disease: Special Issues with Native Children
- Infectious Disease Updates—Study of Virus Etiologies of Respiratory Hospitalizations in Alaska Native children
- Recent literature on American Indian/Alaskan Native Health

From Your Colleagues

- Amy Groom, IHS Immunization Program Manager—Let's clear up any confusion over the availability of the HPV vaccine

Hot Topics

- Obstetrics—SBE prophylaxis not recommended for cesarean delivery or genitourinary procedures
- Gynecology—2006 consensus guidelines for the management of abnormal cervical cancer screening
- Child Health—Traumatic events and alcohol use disorders among American Indian adolescents
- Chronic disease and illness—Aging and prevalence of CVD risk factors in American Indians: the Strong Heart Study

Features

- ACOG—Viral Hepatitis in Pregnancy
- Breastfeeding—Breastfeeding Promotion: Good Public Health Policy (first of a 3 part series)
- Domestic Violence—Coaching Boys into Men AI/AN Poster
- International Health Update—Treating schizophrenia in poorer countries: Old dilemmas and new directions
- MCH Headlines—Child passengers are exposed to secondhand smoke
- Medical Mystery Tour—Endometriosis: Where is the real truth?

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