HHS Rule to Require Graphic Warnings

BY ALICIA AULT
Elsevier Global Medical News

The Department of Health and Human Services issued a sweeping new tobacco control strategy that would require cigarette makers to place photographs and graphic depictions of the harms of smoking prominently on the packages or in advertising.

The graphic warnings—which will be regulated by the Food and Drug Administration—were part of a proposed rule issued by the agency. They were required by the Family Smoking Prevention and Tobacco Control Act and are the centerpiece of the 66-page strategy released by the HHS.

Every day, almost 4,000 youth try a cigarette for the first time and 1,000 youth become regular, daily smokers,” HHS Secretary Kathleen Sebelius said in a statement. “Today marks an important milestone in protecting our children and the health of the American public.”

The HHS estimates that 443,000 Americans die from tobacco-related diseases each year, with 50,000 of those deaths caused by secondhand smoke. Some 8.6 million Americans have smoking-related chronic diseases. FDA Commissioner Margaret Hamburg said, “When this rule takes effect, the health consequences of smoking will be obvious every time someone picks up a pack of cigarettes.”

The agency will require a disturbing photograph or graphic to take up half a package of cigarettes or be prominently placed in an ad, and include one of the following warnings: “Cigarettes are addictive,” “Tobacco smoke can harm your children,” “Cigarettes cause fatal lung disease,” “Cigarettes cause strokes and heart disease,” “Smoking during pregnancy can harm your baby,” “Smoking can kill you,” “Tobacco smoke causes fatal lung disease in nonsmokers,” and “Quitting smoking now greatly reduces serious risks to your health.”

See Warnings • page 8

Start E-Prescribing Now to Avoid Incurring Penalty

Faxing a prescription does not count.

BY SUSAN LONDON
Elsevier Global Medical News

VANCOUVER, B.C. — The Centers for Medicare and Medicaid Services is currently offering providers a bonus for e-prescribing, or electronically transmitting prescriptions to pharmacies. But soon, providers will instead be hit with a penalty if they don’t get on board with this practice.

“They are really promoting this,” Michael K. McCormick, a practice administrator at the DuPage Medical Group in Winfield, Ill., said at CHEST 2010, the annual meeting of the American College of Chest Physicians. But by transitioning from a bonus to a penalty over several years, “they are giving you time to get going on it.”

The Medicare Electronic Prescribing (eRx) Incentive Program, which began in 2009 and runs through 2013, provides bonus payments for e-prescribing when certain eligibility criteria are met, with bonus percentages being reduced over the span of the program, according to Mr. McCormick, a registered respiratory therapist.

But the CMS also will start financially penalizing providers who do not begin e-prescribing in 2011. The penalty for failing to e-prescribe will be 1%, 1.5%, and 2% of all Medicare Part B charges in the years 2012, 2013, and 2014, respectively.

The bottom line is to “e-prescribe at least 10 times in the first 6 months of 2011 so you won’t be penalized in 2012,” Mr. McCormick recommended. “You really need to start doing this in 2011.”

The 2010 reporting criteria require that health care providers report e-prescribing for at least 25 eligible patient encounters (which can include transitions of care) for Medicare and Medicaid participating providers.

Postop Outcomes Worse in COPD

BY SUSAN LONDON
Elsevier Global Medical News

VANCOUVER, B.C. — Patients with chronic obstructive pulmonary disease are more likely to die after surgery than are those without COPD, even after controlling for comorbidities and type of surgery, according to a cross-sectional study of nearly half a million patients undergoing surgery in the United States. The researchers found that patients with COPD were 29% more likely to die and 35% more likely to experience complications, compared with similar patients without the disease, said presenting investigator Dr. Prateek K. Gupta, a surgeon at Creighton University in Omaha, Neb.

In addition, hospital length of stay was four times longer for the COPD group. “Knowledge of the increased risk associated with COPD may improve patient selection and the informed consent process,” he said at CHEST 2010, the annual meeting of the American College of Chest Physicians.

Sleep Medicine

OSA in Inpatients

Majority of hospitalized patients are at high risk for sleep apnea. • 23

Thinking about a change? Interested in relocating? Go where the jobs are...
Two randomized, controlled trials found no statistically significant differences in survival.

BY ROBERT FINN

The American Heart Association guidelines for cardiopulmonary resuscitation (CPR) have been changed to advocate starting chest compressions before and perhaps without starting rescue breathing.

The AHA’s previous CPR guideline advised rescuers to clear the victim’s airway, breathe into the victim’s mouth, then start giving chest compressions. Modifying the CPR recommendations that had stood for more than 40 years, the new guidelines acknowledged that bystanders undertaking CPR focus on performing chest compressions, as any delay in chest compression increases the risk of death (Circulation 2010;122[suppl 1]:S640-56).

The AHA guideline change comes after two independent, randomized, controlled trials, published this past summer, found no statistically significant differences in survival between patients in cardiac arrest who are given standard CPR with chest compression and rescue breathing, compared with those given chest compression alone.

The studies both concluded that when performed by laypeople, CPR with chest compression alone was at least as effective as compressions plus rescue breathing, while also being simpler to teach and to perform.

These randomized, controlled trials confirm and extend the conclusions of earlier studies. In one of the recent studies, dispatchers in London and in two counties in the state of Washington randomly delivered compression-only or standard CPR instructions to 911 callers (999 in London). That study, led by Dr. Thomas D. Rea of the University of Washington, Seattle, eventually enrolled 1,941 patients, of whom 981 received chest compression alone and 960 received chest compression plus rescue breathing. Among those patients, 12.5% who received chest compression alone and 11.0% who received compression plus rescue breathing survived to hospital discharge. The difference was not statistically significant (N. Engl. J. Med. 2010;363:423-33).

One difference between the two groups approached – but did not reach – statistical significance. Patients who had a cardiac cause of arrest were somewhat more likely to survive to discharge if they received compressions alone (15.3% vs. 12.3%, P = .09).

In the other study, investigators randomized 1,276 patients who were the subjects of calls to the 18 emergency medical dispatch centers in Sweden. At the direction of dispatchers, 620 received compression-only CPR, and 656 received standard CPR. Dr. Leif Svensson of the Karolinska Institute, Stockholm, and his colleagues found that the rate of 30-day survival was 8.7% in the compression-only group and 7.0% in the group receiving standard CPR (N. Engl. J. Med. 2010;363:434-42).

Several subgroup analyses also failed to reveal significant group differences. The survival rates did not differ significantly with age, with the interval between the call and the first EMS response, or with the interval between the call and the first cardiac rhythm.

Dr. Svensson and his colleagues also pointed to studies showing that laypeople have difficulty providing adequate ventilation using rescue breaths. CPR guidelines call for the two rescue breaths to take 1.5-2 seconds/breath. But in one study, people not trained in CPR took 16 seconds on average to deliver the two breaths.

In addition, a new meta-analysis by Dr. Michael H. Hulfil of the department of anesthesiology at the Medical University of Vienna and colleagues pooled data from three randomized trials (the two previously described plus one other [N. Engl. J. Med. 2000;342:1546-53]). They found that chest compression-only CPR performed by bystanders under directions from a telephone dispatcher was associated with an improved chance of survival, compared with standard CPR performed by the same (14% vs. 12%) in adult patients experiencing cardiac arrest outside a hospital. The absolute increase in survival was 2.4%, with the relative chances improved by 22% by chest compression-only CPR (Lancet 2010 Oct. 15 [doi:10.1016/S0140-6736(10)61454-7]).

In a secondary meta-analysis of seven observational cohort studies, the researchers saw no significant difference between the compression-only and standard CPR arms.

Compression-only CPR, the investigators concluded, should become the default instructions for dispatchers to give to bystanders. “The pooled effect size of about 22% might seem small, but rates of survival after out-of-hospital cardiac arrest have been about 4%-8% for the past few decades, so our result could represent important progress,” they wrote.

In the United Kingdom, compression-first CPR is already the standard recommendation for treating sudden adult cardiac arrest; guidelines since 2005 have reduced (but not eliminated) the recommended amount of mouth-to-mouth or mouth-to-nose ventilation. The Resuscitation Council UK, which makes CPR guidelines widely followed in the United Kingdom and the rest of Europe, has new guidelines for bystanders in the works that do away with the recommendation for rescue ventilation.

“If people have not been trained, they should be no doubt doing compression only,” said Dr. Jerry P. Nolan of the Royal United Hospital NHS Trust in Bath, England, and an author of existing Resuscitation Council guidelines. However, for trained professionals, standard CPR with ventilation remains preferable, he said. Compression-only CPR “works for only about the first 4 or 5 minutes. The whooping is gone, the hands go down to what is ideal for the bystander’s level of training,” Dr. Nolan said.

The Washington/London study was funded by the Laerdal Foundation for Acute Medicine. Two investigators received defibrillators and funding from Philips Medical Systems and Physio-Control; their institutions received funding from the Medtronic Foundation. The Swedish study had funding from Stockholms County Council, SOS Alarm, and the Swedish Heart-Lung Foundation. The Vienna study received funding from the U.S. National Institutes of Health and the American Heart Association.

Michele G. Sullivan and Jennie Smith contributed to this report.
Some patients have ZYVOX written all over them

With proven efficacy, excellent tissue penetration, and clear and consistent dosing, count on ZYVOX to treat MRSA* in patients with nosocomial pneumonia whose conditions are complicated by renal insufficiency.¹³

— Please see www.zyvox.com for further information

ZYVOX is indicated in the treatment of the following infections caused by susceptible strains of the designated microorganisms:

Nosocomial pneumonia caused by Staphylococcus aureus (methicillin-susceptible and -resistant strains) or Streptococcus pneumoniae (including multidrug-resistant strains [MDRSP]).

Complicated skin and skin structure infections, including diabetic foot infections, without concomitant osteomyelitis, caused by Staphylococcus aureus (methicillin-susceptible and -resistant strains), Streptococcus pyogenes, or Streptococcus agalactiae. ZYVOX has not been studied in the treatment of decubitus ulcers.

ZYVOX use is contraindicated in patients with known hypersensitivity to linezolid or any of the other product components.

ZYVOX should not be used in patients taking any medication which inhibits monoamine oxidases A or B (e.g. phentermine, isocarboxazid) or within 2 weeks of taking any such product.

Unless patients are monitored for potential increases in blood pressure, ZYVOX should not be administered to patients with uncontrolled hypertension, pheochromocytoma, thyrotoxicosis and/or patients taking any of the following drugs: directly and indirectly acting sympathomimetic, vasopressor, and dopaminergic agents.

Unless patients are carefully observed for signs and symptoms of serotonin syndrome, ZYVOX should not be administered to patients with carcinoid syndrome and/or patients taking any of the following medications: serotonin reuptake inhibitors, tricyclic antidepressants, serotonin 5-HT1 receptor agonists, meperidine, or buspirone.

Spontaneous reports of serotonin syndrome have been reported with the coadministration of ZYVOX and serotonergic agents. If signs or symptoms of serotonin syndrome, such as cognitive dysfunction, hyperpyrexia, hyperreflexia, and incoordination occur, discontinuation of one or both agents should be considered.

Myelosuppression (including anemia, leukopenia, pancytopenia, and thrombocytopenia) has been reported in patients receiving ZYVOX. In cases where the outcome is unknown, when ZYVOX was discontinued, the affected hematologic parameters returned to pretreatment levels. Complete blood counts should be monitored weekly, particularly in patients who receive ZYVOX for longer than 2 weeks.

ZYVOX is not approved and should not be used for the treatment of patients with catheter-related bloodstream infections or catheter-site infections.

ZYVOX has no clinical activity against Gram-negative pathogens and is not indicated for the treatment of Gram-negative infections. It is critical that specific Gram-negative therapy be initiated immediately if a concomitant Gram-negative pathogen is documented or suspected.

Clostridium difficile associated diarrhea has been reported with use of nearly all antibacterial agents, including ZYVOX, and may range in severity from mild diarrhea to fatal colitis.

Lactic acidosis has been reported with the use of ZYVOX. Patients receiving ZYVOX who develop recurrent nausea, vomiting, unexplained acidosis, or a low bicarbonate level should receive immediate medical evaluation.

Periperal and optic neuropathy have been reported primarily in patients treated with ZYVOX for longer than the maximum recommended duration of 28 days. If patients experience symptoms of visual impairment, prompt ophthalmic evaluation is recommended.

Convulsions have been reported in patients treated with ZYVOX. In some of these cases, a history of seizures or risk factors for seizures was reported.

The most commonly reported adverse events in adults across the 3 clinical trials were diarrhea, nausea, and headache.


Please see brief summary on adjacent page.

ZYVOX (linezolid)
CONFIDENCE TO FACE COMPLEXITY
DENVER – Asthma may be a risk factor for lung cancer, according to two new meta-analyses. The public health implications of such an association would be enormous. Asthma affects at least 15 million Americans, 40% of them children. Its prevalence has been climbing steadily for decades in developed countries, more than doubling in the United States during a recent 20-year period. And lung cancer is the second most common noncutaneous malignancy in this country, with 10% of lung cancer deaths not attributable to tobacco. Chanis Merckado at the annual meeting of the American Public Health Association. One of the two meta-analyses she performed as a Ph.D. candidate in public health and hygiene at the Chinese University of Hong Kong involved 17 high-quality case-control studies with a total of 54,238 subjects. The conclusion was that individuals with asthma had 34% greater odds of having lung cancer, compared with matched controls without asthma. The other meta-analysis involved 16 high-quality cohort studies and 1,384,824 subjects showed that those with asthma were 46% more likely to develop lung cancer than were subjects without asthma. These results were statistically robust. Eliminating any individual study didn’t substantially change the results. Tests for the existence of publication bias proved reassuringly negative.

One possible mechanism for the observed asthma-lung cancer association is persistent chronic inflammation that is a defining feature of asthma causes DNA damage to cells in the airway. Another is that asthma patients have defective clearance of airway epithelium, resulting in prolonged local exposure to carcinogens, she said.

Meta-Analyses Link Asthma to Higher Lung Ca Risk
MEMBERS OF THE FDA's Cardiovascular and Renal Drugs Advisory Committee who voted positively said that while that measurement—the pulmonary arterial hypertension index (PVR)—had limitations, its use as an end point in studies of drugs in children would help get effective drugs approved for the pediatric pulmonary arterial hypertension (PAH) population, particularly those more useful than the 6-minute walking test in this population, which is used as a clinical end point in adult studies. The pulmonologists and the pediatric cardiologist on the panel explained that while there were some differences, they said they believed PAH in children was similar enough to the disease in adults—including hemodynamic manifestations—that PVR results could be used to extend the adult indication to children.

The FDA is considering making the PVR a basis for expanding the indication of drugs approved for PAH in adults to children with PAH. Currently, none of the drugs approved for treating PAH in adults is approved in children with the disease.

In adults, sildenafil and other drugs for PAH have been shown to improve exercise capacity in children who are taking medication regularly. Exercise testing in children, particularly those under age 7 years, is difficult to perform, and another way to objectively measure responses to treatment in this population is needed.

At the meeting, Pfizer Inc., the manufacturer of the phosphodiesterase-5 inhibitor sildenafil, which was approved for adult PAH in 2005, presented data from adult studies and a pediatric study that showed improvements in exercise capacity were associated with improvements in PVR. (Pfizer markets sildenafil as Revatio for PAH and as Viagra for erectile dysfunction.)

In 2005, the FDA issued a written request to Pfizer to conduct a pediatric study of sildenafil for PAH in children. In response, the company conducted a study of 214 patients, which was started in 2003 and used exercise testing as the main end point. However, because of the difficulty performing exercise testing in children, the company has requested that hemodynamic data in children be included, but declined because of insufficient data to make the decision.

In 2008, Pfizer asked to vote on whether they thought the available hemodynamic data should be included, but declined because of insufficient data to make the decision.

Pfizer was planning to file for approval of sildenafil for PAH in children, if the panel had voted that the hemodynamic data could be included. A statement issued by the company after the meeting said that the panel was encouraged by the panel's discussion about establishing a path forward for conducting clinical trials for pediatric patients with PAH, and that it planned to continue to work with the agency to evaluate the findings of the pediatric study, with the goal of gaining approval for this population.

Members of the FDA advisory panels have been cleared of conflicts related to the topic under discussion.

Dr. Joseph B. Barney, FCCP, commented: In putting this into perspective, I think it's important that a process be established for the collection and analysis of measurement for PAH therapy as soon as possible. It should be as close to the patient as possible across the board if the physiology is similar enough between adult and pediatric patients.
**OPINION**

The new 13-valent pneumococcal conjugate vaccine (Pneuva 13) is picking up where the 7-valent version left off. It has been 10 years since the introduction of the 7-valent pneumococcal conjugate vaccine (Pneuvax). Overall, in the United States, the program has had significant success, with an approximate 65%-70% reduction in invasive disease due to Streptococcus pneumoniae. We’ve also seen substantial reductions in acute otitis media (AOM) and community-acquired pneumonia (CAP).

Nonetheless, in the last few years we’ve seen the emergence of multidrug-resistant pneumococci, particularly strain 19A. While these strains are usually sensitive to vancomycin, linezolid, and fluoroquinolones, they are resistant to the usual first-line antimicrobials, including amoxicillin, clindamycin, and trimethoprim-sulfamethoxazole, as well as ceftriaxone and other cephalosporins. Thus, both CAP and AOM have become more difficult to treat in children who don’t respond to initial therapy.

**PERSPECTIVE**

PCV13 Will Further Reduce Disease

**STEPHEN L. PEITON, M.D.**

The key in setting up the BATTLE program was to develop a collection of diseases. Lung cancer is probably one of the best targets for therapy, but for the most part, these therapies are still being applied broadly to all comers in the clinic. The BATTLE (Biomarker-Based Approaches of Targeted Therapy for Lung Cancer Elimination) program aims to show that with a well-designed translational research strategy, it is feasible to personalize therapy according to a tumor’s molecular profile.

Lung cancer is proving to be a collection of diseases that have highly diverse pathogeneses and molecular characteristics, even within a given histologic tumor type. The numerous pathways and genetic alterations make therapy for this cancer challenging. In particular, it is difficult to discern in advance which patients are most likely to benefit from a given therapy. For the BATTLE program, based at the University of Texas M.D. Anderson Cancer Center in Houston, we have taken the lab to our clinic so that we can use a tumor’s molecular profile to help guide the choice of therapy for a given patient at the time of treatment. In essence, we let the biology of the tumor teach us how to treat it.

The key in setting up the BATTLE program was to link our large, multidisciplinary clinical team with a molecular pathology lab that is dedicated to research and that can provide biomarker profiles within 2 weeks. We streamlined this interaction and the eligibility assessment to reduce barriers to participation for both staff and patients. After an adjustment period, the process worked seamlessly.

**PERSPECTIVE**

Personalized Medicine in Lung Cancer

**ROY S. HERBST, M.D., PH.D.**

Personalized medicine is gaining acceptance among patients and clinicians, and the rapid advances in genomics and proteomics are leading to identifying therapeutic targets. The development of therapeutic agents that target these targets is enabling the true potential of personalized medicine.

In lung cancer, the number of potential targets is vast, and the approach is to first identify the molecular alteration that is present and then to match the patient with an appropriate therapy. This is the goal of the BATTLE program, which aims to develop a personalized medicine approach for patients with lung cancer.

**DECEMBER 2010 • CHEST PHYSICIAN**
Nonetheless, this finding “begs the question of a possible hormonal factor.”

Study results for race showed that the proportion of all lung cancers that were of small cell type was consistently lower among African American patients than among white patients throughout the study period. As of 2005, the value was 9% compared with 12% for white patients. Age at presentation was younger among African American patients than among white patients. For example, roughly 50% of African American patients received their cancer diagnosis before age 64, compared with 40% of white patients. But the two racial groups did not differ with respect to the stage at diagnosis or cancer-specific survival.

Here, again, smoking patterns and susceptibility may explain some of the observed differences, according to Dr. Arora. “We all know that small cell lung cancer is very closely related to smoking,” Dr. Arora commented. Hence, differences between the sexes in smoking patterns may explain some of these findings.

On one hand, African American smokers smoke fewer cigarettes daily than do their white peers and start smoking later in life, she said. But “because of their lower quit rates, their prevalence of smoking is higher.” Also, they smoke more menthol cigarettes, which have higher levels of tar than the nonmentholated kind.

“On top of that, there is a race effect,” Dr. Arora noted. “African Americans are 1.8 times more susceptible than whites to developing small cell lung cancer with the same amount of smoking.”

In general, Dr. Arora reported that she did not have any relevant financial conflicts.
‘Smoking Can Kill You’

Warnings • from page 1

The cancer warning might have a photograph of an obvious, terminally ill person in a hospital bed, or a close-up of a mouth riddled with rotting teeth and sores. The heart disease warning might have a photograph of a man clutching his chest, in the throes of a myocardial infarction.

The FDA is seeking the public’s input on which graphic depiction to use for each warning. It is accepting comments until Jan. 9, 2011. Then the agency will select one graphic for each of the nine warnings and publish the choices in a final rule to be issued by June 22. The five택 manufacturers would have 15 months from that time — by October 2012 — to come into compliance. If they do not comply, their product will be banned from sale in the United States.

Public health advocacy groups applauded the HHS plan and the FDA proposal. “The new warnings represent the most significant change in U.S. cigarette warnings since they were first required in 1965,” Matthew L. Myers, president of the Campaign for Tobacco-Free Kids, said in a statement.

‘Make no mistake, smoking cessation is there,” he said. In fact, smokers want to stop and 30% try each year, according to Dr. Arunabh Talwar, FCCP.

Physicians Can Tip the Balance to Smoking Cessation

BY SUSAN LONDON

Elsevier Global Medical News

VANCOUVER, B.C. — Although physicians might be reluctant to bring up smoking cessation with their patients for many reasons, it is one of the most important preventive activities they can undertake, according to Dr. Arunabh Talwar, FCCP.

Many smokers are ambivalent about smoking, he said at CHEST 2010, the annual meeting of the American College of Chest Physicians. On any given day, their smoking status hangs in balance between at least one set of factors favoring quitting and another set favoring continuing (BMJ 2007;335:37-41).

“All we need to do is just [tip the balance],” said Dr. Talwar, a pulmonologist at North Shore University Hospital in Manhasset, N.Y.

Indeed, if self-reports are reliable, about 70% of smokers want to stop and 30% try each year, but only 4% succeed.

Referring to the multistage model of behavioral change, he noted that making smokers aware of the link between smoking and end-organ damage is critical in starting the process. “That is the most important thing that physicians do: They move patients from a precontemplation to a contemplation stage and set the stage for the smoking cessation process to occur.”

There is compelling evidence of the benefits of smoking cessation, he said. It has been identified as the single most effective step for lengthening and improving patients’ lives (BMJ 2004;328:947-9).

“Make no mistake, smoking cessation activity is very cost effective,” he added. “I think it is the most cost-effective primary prevention action that a physician can take.”

Brief advice to quit costs $338 per year of life saved — or less than 5% of the cost per year of life saved from giving pravastatin for primary prevention of cardiovascular disease, aspin for secondary prevention of myocardial heart disease, or simvastatin for secondary prevention of MI (BMJ 2004;328:397-9).

Still, physicians cite numerous barriers to promoting smoking cessation with their patients, according to Dr. Talwar (J. Smok. Cessat. 2008;9:92-100). A common one is being too busy.

“But studies show us, a minimal inter- vention — as [little] as 3 minutes of a physician’s time — can move patients from precontemplation to contemplation, can help improve quit status,” he said. Furthermore, “as you increase the inter- vention, the success rate will improve.”

For example, just 0.3% of smokers succeed in quitting long term on their own, but the value rises to 1.6% when physicians simply ask their smoking status, to 3.3% when physicians ask and provide advice on quitting, and to 5.1% when physicians ask, advise, and give a pamphlet (BMJ 1979:2:231-3).

Busy physicians can streamline their efforts by using a team approach. “Some of it can be shared by other health care providers, whether they are nurses, nurse practi- tioners, physician assistants,” he explained. “We use our respiratory ther- apists and [pulmonary function test] lab technicians as well; that way, the load gets divided. But also, repeated messages to the patient will help move them forward.”

Physicians should also consider using telephone “quitlines” (now freely available in all states) and patient support groups in the behavioral modification parts of cessation, he advised.

Another barrier physicians cite, lack of expertise, has a stronger negative influence on their smoking cessation activities than lack of interest, time, or materials (Eur. J. Public Health 2005;15:140-5).

Indeed, in a survey of New York City-area health care providers, Dr. Tal- war and his colleagues found that only 20% believed their training had ade- quately prepared them to treat tobacco dependence. And less than 10% were familiar with treatment guidelines. “We are a little bit behind in this, but medical schools have made a change, and most medical schools now have some courses to make sure that standard curricula [on smoking cessation] are there,” he said.

In addition, comprehensive information is readily available in the ACCP’s Tobacco Dependence Treatment Toolkit (http://tobaccodependence.chestnet.org).

Reassuringly, physicians who receive training in this area are 1.5 to 2.5 times more likely to perform smoking cessation tasks (Cochrane Database Syst. Rev. 2000;CD000214).

Physicians also report a lack of financial incentives to be a barrier. Dr. Talwar noted that two CPT codes — 99406 and 99407—specifically pertain to cessation activities during visits. Physicians can usu- ally bill for this counseling, in addition to routine office visits, four times annually.

Half of physicians still believe that re- imbursement is insufficient. “But the sit- uation is much better than 7 or 8 years ago, when it was much more difficult to get reimbursement for these activities,” he commented.

Physicians also mention patients’ low likelihood of quitting as a barrier to broaching smoking cessation, according to Dr. Talwar. But the irony is that quit rates are influenced in large part by physicians’ efforts and the intensity of those efforts.

Discussing the so-called 5 As of smoking cessation — ask, advise, assess, assist, and arrange — he noted that physi- cians do fairly well on the first two, but not so well on the others.

For example, a study of 246 community-based primary care physicians found that 67% asked their patients about smoking status and 74% gave advice, but just 33% assisted with smoking cessation efforts and merely 8% arranged for follow-up (Prev. Med. 1998;27:270-9).

It is important to under- stand that relapses are part of the cessation process. Dr. Tal- war stressed, in fact, smokers who succeed in quitting make five to seven attempts, on average, before succeeding. Hence, “you have just to have to be patient with them.”

It might also be possible to improve the odds of successful quitting by ap- proaching patients at teachable mo- ments, he further noted. For instance, “admission [to the hospital] is an oppor- tunity to interact, to make the change. Maybe that’s the time when you need to approach them.”

His own 800-bed hospital generates a list each day of inpatients who smoke. A smoking cessation therapist then visits these patients and invites them to the smoking cessation clinic. A final barrier is that some physicians themselves are smokers. “It’s been shown that physicians who smoke have very lit- tle faith in their own ability to promote smoking cessation,” Dr. Talwar commented (Prev. Med. 2005;40:595-601).

On the other hand, this group has greater insight into the difficulties of quitting and might be able to draw on their own experiences to assist patients in this endeavor, he added.

Dr. Talwar did not report any conflicts of interest.

PAIN RELIEVERS

Non-Narcotic Area

“Let me remind you. Wherever I happen to be there is a smoking area.”

Dr. Philip Marcus, FCCP, comments: Stronger warnings on cigarettes are a long time coming. However, it is unclear whether they will have a significant impact on those experimenting with cigarette smoking. It is certainly a step in the right direction, but better public education must take place as well.
Midlife Smoking Doubled Later Dementia Risk

Dr. Rusanen and her colleagues used data from a large, multiethnic cohort of more than 33,000 members of the Kaiser Permanente Medical Care Program of Northern California. The study cohort took part in the Multifactorial Health Checkup and were first assessed at enrollment between 1978 and 1985, when they were aged 50–60 years. For the analysis, the medical records of 21,123 people who were still living and in the health plan in 1994 were reviewed for dementia diagnoses. A total of 5,367 people (23%) were diagnosed by neurologists, neuropsychologists, or internists as having dementia, including 1,136 cases of Alzheimer’s disease and 416 cases of vascular dementia.

After researchers adjusted for age, sex, and certain cardiovascular risk factors, they found that people who smoked two or more packs per day at midlife were more than twice as likely as nonsmokers to develop dementia (risk-adjusted hazard ratio, 2.14). Alzheimer’s disease (HR, 2.57), or vascular dementia (HR, 2.72) 20–30 years later.

The association between smoking and dementia risk was analyzed separately for people who had stroke because stroke is a robust predictor of dementia and is highly associated with smoking. Midlife smoking remained a robust independent predictor of dementia and dementia subtypes in that subanalysis, the investigators said.

Compared with nonsmokers who had a stroke, those who had smoked two or more packs per day and had a stroke were 1.83 times more likely to develop dementia. The link between midlife smoking and later dementia remained robust when the data were adjusted for patient race, ethnicity, and gender. “The deleterious effects of smoking on risk of dementia seem to be the same for both sexes and across different ethnic groups,” Dr. Rusanen and her associates said.

The study was supported by Kaiser Permanente Community Benefits and several national institutions in Finland. One investigator reported ties to Elian Corp., Pfizer, Janssen, and Novartis.
Tuberculosis Rate Falling, But Not Fast Enough

Currently, the annual global decline is estimated at a modest 0.07%.

By Jennie Smith
Elsevier Global Medical News

Through the global incidence rate of tuberculosis is falling, thanks to widespread implementation of standardized anti-TB interventions, the goal of eliminating TB by 2050 will not be met without new technologies and approaches, say specialists at the World Health Organization.

The reasons for the slower-than-expected reduction of TB incidence, which now holds at less than 1% per year, are economic, geographic, and technological.

Current diagnostic methods in wide use detect only about 60% of TB cases. Vulnerable people in many poor countries still do not have access to affordable treatment or early diagnosis. Meanwhile multidrug-resistant (MDR) TB remains a threat in some regions, particularly Europe; and HIV infection fuels tuberculosis incidence in other regions, particularly Africa. In 2008 there were an estimated 139 incident cases of TB per 100,000 population, or 11 million world-wide, with 1.8 million associated deaths.

In an article on TB interventions published online in the Lancet, Dr. Knut Lönnroth and Dr. Mario Raviglione of WHO’s Stop TB program in Geneva, along with colleagues in the United States, Kenya, and India, undertook a broad review of published studies and of epidemiologic data to measure progress on TB reduction goals set by WHO and the United Nations between 1990 and 2000. They also surveyed control policies and health systems in 22 nations that together make up 80% of the world’s TB burden, while noting that data reporting in many of the high-burden countries could be subpar or inconsistent.

Dr. Mark Metzker, FCP, comments: As in so many other areas of health care, possessing the knowledge of how to reduce TB rates is not enough. Adequate resources and effective planning and implementation are also necessary.

The WHO and UN goals included halting and beginning to reverse by 2015 the rise in incidence of TB, halving by 2015 the incidence and death rates of 1990; and reducing TB incidence to one billion people by 2050. The first goal, Dr. Lönnroth and Dr. Raviglione concluded, may have been met as early as 2002. The second will likely be met in most regions, they said, but not all. The third goal may be out of reach without a reconsideration of overall strategy and further technological improvements.

Though some newer technologies, such as preventive therapy with isoniazid, are helping and should be expanded, “we can still wish for a better technology in terms of drug treatment for people with active disease. We want better, simpler diagnostic tools that can be used in peripheral settings, such as rural clinics,” Dr. Lönnroth said in an interview. And the ultimate thing we can wish for is a new and better vaccine.”

But Dr. Lönnroth noted that there are countless factors affecting TB rates, not all of which can be addressed with technology. “One thing is not going to help the situation,” he said. “It has to be a combination of different types of efforts.”

Combining different types of efforts also the basic philosophy of directly observed therapy, short course (DOTS), WHO’s standardized package of tuberculosis interventions, which was started in 1995. The key components of DOTS are diagnosis through bacteriology, standardized and supervised treatment, an effective drug supply system, and monitoring and evaluation of performance.

Between 1995 and 2008, a period during which DOTS was implemented in 181 countries (including all 22 of the high-burden countries), 36 million people were cured of TB, with an estimated 6 million more lives saved than if DOTS had not been adopted, wrote Dr. Lönnroth and Dr. Raviglione. TB fatality rates worldwide dropped by half in that period, from 8% to 4%.

However, TB case detection rates, after a period of acceleration, leveled off in 2007 at around 60% globally, short of WHO’s goal of 70%. Treatment success under DOTS has proven uneven, with Mediterranean, Pacific, and Southeast Asian countries reporting successful treatment rates as high as 92% in 2007, while Europe and Africa saw 67% and 79% that year, respectively.

Dr. Lönnroth and Dr. Raviglione estimated that detection of incident cases above 70% and treatment rates over 85% would be necessary to produce reductions in the TB rate of 5%-10% per year. Currently, the annual global decline is estimated at a modest 0.07%.

While the European region, notably Russia, continues to struggle with MDR tuberculosis, inadequate treatment success, and high dropout rates, there is the strong likelihood of Africa that will cause the 2015 target of halving the 1990 rates to be missed, wrote Dr. Lönnroth and Dr. Raviglione.

HIV infection increases vulnerability to TB coinfection by a factor of 20, and the rapid increase in TB incidence and deaths in Africa during the 1990s was related to the high regional incidence of HIV.

In concluding their analysis, the authors made note of the relationship between poverty and the epidemiology of TB, a relationship underscored in an associated editorial by Dr. Richard Horton, the Lancet’s editor in chief, and Dr. Pamela Das, its executive editor. Treatment-related actions alone, Dr. Horton and Dr. Das wrote, “will be insufficient to reach global goals. There is an urgent need to assess interventions for social and economic determinants, such as malnutrition, alcohol use, poor housing, indoor air pollution, and poverty.”

Other papers and related comments in the Lancet addressed topics including the interaction of age and immunity with TB, the need to strengthen health systems, and the research priorities for diagnosis, management, and control of tuberculosis.

In a paper on TB vaccines, researchers led by Prof. Stefan H. E. Kaufmann of Max Planck Institute for Infection Biology in Berlin, said that “after decades of inactivity in research and development for tuberculosis vaccines, 11 candidates are currently in the clinical trial stage. Most of the candidates are intended to replace or be boosters for the recombinant live vaccine (BCG) that is currently in use. The BCG vaccination provides insufficient protection against adolescent and adult TB, and while it is more effective in infants, it has safety issues in those who also have HIV, researchers explained.

The potential for improvement is great, they wrote. A key message of their report is that “new vaccines can contribute to the ambitious goal of reducing the yearly incidence of tuberculosis by 50% and the number of new case per million population by 2050.” However, the efforts are severely under-funded, and costs are projected to be $2 billion/year over the next 10 years.

COPD Surgical Risk
Outcomes • from page 1

“Perioperative optimization of these patients may help in improving outcomes and health care costs, and there is a need to study such strategies in multicenter, randomized, prospective trials,” he added. These strategies may involve patients respiratory exercises and encouraging them to quit smoking, he said.

Dr. Gupta and his colleagues used the NSQIP (National Surgical Quality Improvement Program) database, which collects data from more than 250 hospitals, to identify patients who underwent surgery in 2007 and 2008.

They then compared 30-day postoperative outcomes among patients who did and did not have COPD, defined in the database as GOLD (Global Initiative for Chronic Obstructive Lung Disease) stage II, III, or IV or a prior hospitalization for COPD.

Analyses included 468,795 patients who underwent surgery. The types of surgery were typical of those seen in the general population, according to Dr. Gupta, with a predominance of cholecystectomy, appendectomy, hernia repair, vascular and breast surgeries.

A total of 5% of the patients had COPD. Relative to their unaffected peers, COPD patients had a higher mean body mass index (29 vs. 28 kg/m²) and older median age (69 vs. 55 years); were more likely to be male (52% vs. 42%), white (82% vs. 72%), smokers (41% vs. 20%), and alcoholics (5% vs. 2%); and were more likely to be on corticosteroids (10% vs. 3%).

The group with COPD also had higher prevalences of more than a dozen comorbidities, especially hypertension (74% vs. 44%), dependent functional status (20% vs. 6%), diabetes (25% vs. 14%), and an American Society of Anesthesiologists score of 3 or 4 (55% vs. 22%).

Median length of hospital stay was much longer for patients with COPD than for their unaffected peers, at 4 days vs. 1 day (P less than .0001, Dr. Gupta said. And the 30-day rate of postoperative mortality and morbidity, at 6.7% vs. 1.4% (P less than .0001).

After the investigators took into account more than 50 comorbidities and the type of surgery, patients with COPD still had higher risks of postoperative morbidity (odds ratio, 1.35; P less than .0001) and mortality (OR, 1.29; P less than .0001).

The odds of nine postoperative complications individually were also elevated for the COPD group, with the greatest increases seen for pneumonia (OR, 1.71), reintubation (OR, 1.54), and failure to wean from the ventilator within 48 hours (OR, 1.45) (all P less than .0001).

The study was limited by a lack of detailed information on therapies that patients were receiving, Dr. Gupta acknowledged. “We just know that they had this surgery [and] that they had a COPD [but] we don’t know what medication or what preoperative optimization they underwent,” he said.

In addition, the study did not specifically assess any influence of the urgency of the surgery (emergency vs. elective) and did not assess the potential impact of mild COPD.

GOLD stage II-IV COPD is “common among patients undergoing surgery and is associated with increased morbidity, mortality, and length of stay,” Dr. Gupta concluded. Physicians may be able to use this information to help guide selection of appropriate surgical candidates, counsel patients about risks, and tailor interventions to improve outcomes, he said.

Dr. Gupta reported having no conflicts of interest related to the research.
An estimated 24 million Americans may have COPD—50% are undiagnosed. The number of patients with COPD seen weekly was 11 for participants and 15 for nonparticipants. The mean number of years in practice was 28 and 24, respectively. The groups were about equally divided between family physicians and internists.

Survey results showed that participants were more likely than nonparticipants to recognize COPD in case vignettes of patients with dyspnea (90% vs. 54%, P < .001) and to be aware of the greater susceptibility of women compared to men to the harmful effects of smoking (90% vs. 54%, P < .001). Also, when asked which of several pathophysiologic features was one of COPD, participants were more likely to correctly answer alveolar destruction (94% vs. 74%, P = .007) and to be aware of the initiative’s emphasis on the importance of early recognition and treatment of COPD.

The COPD Alliance was formed to provide you with timely information, tools, and support to facilitate the recognition, diagnosis, and treatment of COPD. The Alliance is composed of multidisciplinary societies and corporations whose commitment is to help clinicians improve their patients’ quality of life through early recognition and management of COPD—the 4th leading cause of death in the United States.

Visit www.copd.org to learn more.
Palivizumab Use Linked With Shorter Hospital Stay

BY PATRICE WENDLING
Elsevier Global Medical News

VANCOUVER, B.C. — The introduction of palivizumab as a preventative treatment for respiratory syncytial virus appears to be associated with a shorter length of hospital stay for the disease, one California study showed.

Hospital charges for respiratory syncytial virus (RSV) also increased at a slower pace than for other causes of infant hospitalization, according to a retrospective analysis of California discharges among 3,443,918 infants less than 1 year of age.

The data provide real-world evidence about the impact of palivizumab (Synagis) in the community since its approval in 1998 based on one company-sponsored study, said Dr. Andrew Racine, chief of the general pediatrics section at Albert Einstein College of Medicine in New York City.

“This is important for the following reason: The U.S. sales of palivizumab have gone from about $225 million in 1998 to over $1.5 billion in 2007,” he said.

“We’re using a lot of this; we might as well know if it’s effective,” Dr. Racine commented.

Palivizumab costs about $900 a dose, with most at-risk children receiving five doses as prophylaxis. There is no treatment for RSV.

Dr. Racine cautioned that the findings were from a single state and were not stratified by risk categories for RSV. In addition, the findings were based on an intent-to-treat analysis and thus may not reflect whether patients actually received the medication. There are plans to link the birth certificate to the hospitalization and to identify gestational age and congenital illnesses.

The researchers used data from the California Patient Discharge Database and individual-level hospitalization records to compare length of stay and hospitalization costs among infants less than 1 year of age during two time periods: before (1995-1997) and after palivizumab (2005-2007).

The mean length of stay for RSV hospitalizations fell 12.9% from 3.95 days before palivizumab to 3.43 days after the drug.

This compares with a decrease of 3.4% for non-RSV hospitalizations, which went from 3.2 days to 3.09. The difference was statistically significant at a P value less than .001.

Dr. Racine said that less use of albuterol, corticosteroids, and imaging studies also may have occurred during the second time period, but that these data were not examined and that his own “heartbreaking” experience suggests that these practices continue.

“There are a lot of things we are still doing to these children with this condition that are completely unnecessary and costly,” he said.

A study led by Dr. Caroline B. Hall, whose earlier work led to the approval of palivizumab, reported that only 3% of 355 outpatients with confirmed RSV infection received an RSV diagnosis, with 20% of these children diagnosed with bronchiolitis.

Dr. Hall and her associates estimated that RSV infection results in 1 of 334 hospitalizations among children under the age of 5 years (N. Engl. J. Med. 2009; 360:588-98).

Dr. Christopher Carroll comments: In addition, there are other factors that could be driving down RSV length of stay that are unrelated to palivizumab. These include the increased use of noninvasive ventilation, improvement in hospital care, differences in RSV viral pathogenicity from season to season, and others.

Dr. CARROLL of the Connecticut Children’s Medical Center in Hartford is a guest adviser for this publication.

One Breath

Make The Most Of It

The CHEST Foundation is pleased to introduce its new One Breath campaign, an exciting public-facing campaign that incorporates its three pillars: education, care, and community. One Breath: Make The Most Of It emphasizes that living well means breathing well and inspires people to take care of their lungs and heart, never taking their next breath for granted.

The Foundation’s mission remains the same: to provide prevention and education programs and valuable resources in cardiopulmonary and critical care medicine. The four focus areas of tobacco prevention and cessation, humanitarian service, clinical research, and critical care/end-of-life care, continue to be the core programming elements.

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coming January

CHEST 2011 Opportunities

Call for Abstracts
Submit an abstract of your original investigative work for presentation at the meeting. Submission is free to ACCP members.

Watch for details and submission opportunities, coming January 31.
www.accpmeeting.org
Submission deadline: May 4

Call for Case Reports
ACCP affiliate members are invited to submit case reports for presentation during special sessions.

Watch for details and submission opportunities, coming January 31.
www.accpmeeting.org
Submission deadline: May 4

The CHEST Foundation 2011 Awards Program
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The CHEST Foundation tradition of recognizing and rewarding health-care professionals for volunteer service, leadership, and clinical research continues in 2011. You could be eligible.

Watch for details and application opportunities, coming in January.
onebreath.org
Application deadline: May 4
Drug-Resistant KPC Spreading in U.S., Globally

BY ROBERT FINN

VANCOUVER, B.C. – There’s a new bad bug on the block, and it appears to be making appearances in long-term care facilities, at least in the Chicago area, according to a recent study presented at the annual meeting of the Infectious Diseases Society of America.

Carbapenem-resistant Enterobacteriaceae, particularly those that produce Klebsiella pneumoniae carbapenemase (KPC), are becoming increasingly problematic in the Chicago area, Dr. Mary K. Hayden said during a press briefing. The first case appeared in Chicago in December 2007, but by March 2009 an Internet-based survey of infection preventionists revealed that 26 of 53 facilities (49%) had reported one case, and the mean number of cases per facility was 3.8.

In a subsequent survey in February 2010, 37 of 57 facilities (65%) had reported at least one case, and the mean number of cases per facility was 10.2.

According to the 2009 survey, 81% of the affected patients had been transferred from a long-term care facility or a long-term acute care hospital. In 2010, 75% of patients came from such facilities.

Dr. Hayden, of Rush University Medical Center, Chicago, declined to refer to KPC as a “superbug,” a term favored in the popular press, but she did say, “I think it is an organism that should be identified as requiring particular attention. [It] can cause serious, life-threatening infections in hospitalized patients.”

These organisms, which are aerobic gram-negative bacilli, produce infections that are particularly difficult to treat because they’re resistant to most and sometimes to all available antibiotics. “This rapid increase in KPC is not unique to the Chicago area,” Dr. Hayden said. “KPC was first identified in North Carolina in the late 1990s, and over the next 10 years remained restricted to the East Coast, causing significant morbidity and mortality in areas such as Brooklyn, N.Y. But in the last couple of years, KPC has spread globally, with reports now from multiple areas in the United States and from South America, Europe, and Asia. An extreme example was seen in Israel, which reported a nationwide outbreak of KPC only about 2 years after their first case was identified.”

Dr. Hayden said that her team believes their findings point to the need for a regional approach to KPC control. “It will require coordinated collaboration between acute care hospitals, long-term care facilities, and public health [departments],” she said. The authors had no disclosures.

Any combination was linked with significantly lower mortality, compared with monotherapy.

BY NEIL OSTERWEIL

BOSTON – Bacteremia secondary to pneumonia caused by carbapenem-resistant Klebsiella pneumoniae carries a high mortality rate, but combination antimicrobial regimens involving polymyxins, tigecycline, or carbapenems improve survival compared with monotherapy, according to the findings of an observational treatment study conducted at two medical centers.

Among 41 patients infected with K. pneumoniae bacteria that produce Klebsiella pneumoniae carbapenemase (KPC), 14-day mortality was 24% and 28-day mortality was 35%, Dr. Zubair A. Qureshi reported at the annual Inter- science Conference on Antimicrobial Agents and Chemotherapy.

Mortality was increased when patients received monotherapy with either colistin (4 deaths among 7 patients) or tigecycline (3 deaths among 5 patients). However, there were no deaths within 28 days among patients treated with either colistin or tigecycline added to any carbapenem, even when the infectious organism was reported to be nonsusceptible to carbapenems, said Dr. Qureshi of the division of internal medicine at the University of Pittsburgh Medical Center.

He noted that the preliminary findings are consistent with a recent review of KPC infections that documented better clinical outcomes with combination therapy compared with monotherapy (J Antimicrob Chemother. 2010;6:1119-25).

KPC-type beta-lactamases confer either decreased susceptibility or resistance to virtually all beta-lactam antibiotics, including the carbapenem class imipenem, meropenem, and ertapenem.

Investigators at the University of Pittsburgh and St. Luke’s-Roosevelt Hospital Center in New York City conducted the single-arm observational study of treatment outcomes in patients with bacteremia due to KPC-producing K. pneumoniae. Patients were screened for the presence of KPC by reduced susceptibility to ertapenem, which was confirmed with polymerase chain reaction.

The authors looked at risk factors, antimicrobial therapy, and in-hospital mortality rates. They identified 41 patients (24 women, 17 men) with KPC-producing K. pneumoniae, with a median age of 62 years (range 25-90 years). All of the cases appeared to have been acquired in either the hospital (78%) or other health care settings such as long-term care facilities. There were no identified cases of community-acquired infections.

The source of the bacteremia was vascular catheters in 29% of the cases, pneumonia in 27%, urinary tract in 15%, intra-abdominal in 4%, and superficial wounds in 4%. The source was unknown in the remaining patients.

The primary risk factor was immunocompromised status, either from a transplant, malignancy, diabetes, connective tissue disease, chronic renal failure, or HIV infection. In all, 76% of patients had recently received antimicrobial agents, and 41% were nursing home residents.

Death occurred in 7 of 11 patients with pneumonia as the source of bacteremia, 3 of 12 patients with vascular catheters as the source, 1 of 6 patients with urinary catheter-based infections, and 3 of 12 patients whose infections were due to other or unknown sources.

When the investigators looked at 28-day mortality in patients who received definitive therapy, they found that any combination was associated with significantly lower mortality, compared with monotherapy (6% vs. 59%, P = .002).

The analysis did not include two patients who were lost to follow-up.

Major Finding: Combining a carbapenem antibiotic with either colistin or tigecycline improved 28-day survival in patients with bacteremia secondary to pneumonia caused by KPC, compared with those who received monotherapy (6% vs. 59%, P = .002).

Data Source: Single-arm observational study.

Disclosures: Dr. Qureshi reported having no conflicts of interest. Several of his colleagues reported receiving consulting fees from AstraZeneca, Merck, Novartis, Leo Pharmaceuticals, Three Rivers Pharmaceuticals, and/or Johnson & Johnson.

The regimen consisted of various combinations of polymyxins, tigecycline, and carbapenems.

“The combination of colistin and carbapenem appears to be superior to any other antibiotic combination, but there is a need for more observation as well as randomized clinical trials to help define the optimal treatment for KPC infections,” Dr. Qureshi said.

PULMONARY MEDICINE
Although successful return of spontaneous circulation (ROSC) and survival to hospital discharge (STD) depend upon the provision of high-quality CPR, data exist to show that resuscitation quality is often lacking. Researchers from the University of Chicago reported inadequate compression rates by medical house staff in 28% of events, insufficient compression depth (37%), excessive ventilation (61%), and zero compressions for the first 5 min of resuscitations (40%) (Abella et al. JAMA. 2005;293[3]:308).

An analysis of outside the hospital cardiac arrest (OHCA) resuscitations in experienced Norwegian emergency medical technician (EMT) personnel showed similar inadequacies in compression depth and excessive hands-off time (Wik et al. JAMA. 2005;293[3]:299). Compared with continuous compressions, hands-off no flow time is especially deleterious in animal models of CPR, as excessive leaning was demonstrated to result in elevated intrathoracic pressure, decreased resuscitation perfusion, and decreased survival outcomes with a reduction in compression depth without loss of compression rate, after 90 sec or longer of metronome-guided compressions. It is not clear whether hands-off time associated with a more frequent change of rescuers would offset any advantage gained in compression quality (Sugarman et al. Resuscitation. 2009;80[9]:981).

To address problems with rescuer fatigue and inadequate rate and depth of compressions, automated battery-powered compression and compression-decompression devices have been tested. These devices have been associated with improved secondary outcomes (end-tidal CO₂, myocardial blood flow, blood pressure, and coronary and carotid perfusion pressures), but neither device introduced in the last 5 years has produced better survival outcomes, possibly due to the hands-off time required for initial deployment (Perkins et al. Circ Arrhythm Electrophysiol. 2010;3[1]:196). The use of a weekly, structured debriefing of house staff with a morbidity/mortality format resulted in improvement in CPR quality and a 33% improvement in ROSC but no improvement in STD (Edelson et al. Arch Intern Med. 2008;168[10]:1063). An abstract from a group in San Diego reported improved survival outcomes with a resuscitation bundle (simulation-based training, a rapid response team, adherence to the principles of CCR, and feedback debriefers) (Sell et al. Circulation. 2009;120[S144]). In the new 2010 guidelines, the AHA gave Class I recommendations to competency-based assessment in CPR courses, skills retesting within the 2-year certification cycle, the use of videos for consistent training, and emphasis on teamwork and leadership skills, as well as debriefing.

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**Editor's Insight**

This article concludes Dr Honig's apt review of recent advances in CPR, but it does not suffice as a comparison of the 2005 and 2010 guidelines. Please access the 2010 American Heart Association Guidelines for CPR and ECC to review current key recommendations, such as the new sequence for institution of basic life support, a recommended compression depth of 2 inches, a compression rate of at least 100 beats per minute, and compression-only CPR for untrained resuers, among others (Field, et al. Part 1: Executive summary: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2010;122[183]:S640 or www.heart.org/CPR).

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**Pulmonary Perspectives**

**CPR – 50 Years On: Part 2**

**Dr Eric G. Honig, FCCP**

Editor, Pulmonary Perspectives

**Dr Marilyn G. Foreman, FCCP**

Editor, Pulmonary Perspectives

**Dr Loren J. Harris, FCCP**

Deputy Editor, Pulmonary Perspectives
Cardiac arrest remains a common and generally deadly problem, 50 years after Kouwenhoven.

Injury complicated by persistence of the underlying cause of the arrest.

Brain injury is associated with “neuroexcitotoxicity,” calcium dysregulation, free radical production, protease cascades, cell death and apoptosis, impaired microperfusion and macroperfusion, and dysautoregulation. Cardiac dysfunction (tachycardia, hypotension, elevated left-sided filling pressures, and decreased cardiac output) is seen in 50% of patients with PCAS. Hypotension, in particular, carries a twofold risk of death.

The cytokine profile associated with ischemia-reperfusion injury in PCAS is similar to that seen in sepsis and has led to suggestions that PCAS may be managed according to similar principles. Mild hypothermia after cardiac arrest (HACA) has been shown to improve survival and neurologic outcomes in select patients with OHCA VT/VF arrests, though the original 2002 reports restricted HACA to only 8% of events (Hypothermia After Cardiac Arrest Study Group. N Engl J Med. 2002;346(8):549).

In the 2010 CPR guidelines, the AHA continues to recommend (Class I) that induced hypothermia be employed for all patients still comatose after ROSC for VT/VF OHCA and considered (Class IIb) for all comatose arrest patients re-suscitated from any IHCA and from nonshockable OHCA events.

There is a paucity of clinical data to absolutely support extension of HACA to these other groups, and the potential complications of hypothermia (shivering, bradycardia, electrolyte abnormalities, hyperglycemia, increased infection, and decreased drug clearance) need to be considered (Arrich et al. Cochrane Database Syst Revs. 2009;4:CD004128).

Some groups have integrated HACA and the principles of early goal-directed therapy for sepsis to set protocols for care of patients with PCAS. In addition to HACA, cardiac dysfunction is managed by maintaining a central venous pressure at 8 to 12 mm Hg, a mean arterial pressure of 65 to 100 mm Hg, using dobutamine drip and intra-aortic balloon pump, if necessary. Urine output and lactate levels are reported as being more useful than central venous oxygen saturation.

Hemoglobin value is maintained at 9 to 10 mg/dL. Patients are ventilated to normocapnia. Hyperoxia is avoided; oxygen saturation is kept at 94% to 96%.

Hypoglycemia is considered far more dangerous than hyperglycemia; blood sugars are maintained between 100 and 180 mg/dL.

Electrolytes are normalized as much as possible. No randomized trials are currently available to confirm the utility of PCAS protocols, but two small trials with historical controls demonstrated a doubling of survival for OHCA patients, irrespective of initial rhythm (Sunde et al. Resuscitation. 2007;73(1):29; Gaieski et al. Resuscitation. 2009;80(4):418).

An organized multisystem approach to the management of PCAS is endorsed and discussed in detail in one of the more important new sections of the 2010 AHA CPR guidelines.

Conclusion

Cardiac arrest remains a common and generally deadly problem, 50 years after Kouwenhoven. We have made progress in our ability to restart stopped hearts, but we can do better.

Improved training, frequent refresher training, feedback, and debriefing should lead to better resuscitation performance and, hopefully, to better outcomes.

Systematic analysis of the quality of our CPR performance should help distinguish the elements of the ACLS and BLS protocols that are truly important. Advances in the systematization of care provided to the post-cardiac arrest patient have the potential to yield greater improvements in our desired end point, which is neurologically intact survival to discharge.

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FROM THE CEO

A
s I walked from my hotel in Honolulu, Hawaii, the idyllic backdrop, close to 5,000 attendees descended on CHEST 2010, with the largest number of international attendees (30%) in the history of the meeting. CHEST 2010 was noteworthy in other significant ways. We moved toward “paperless” CHEST meetings by making use of electronic communication tools. The ACCP offered 24/7 access to the most current and late-breaking meeting information and, in so doing, saved considerable printing and paper costs.

New at CHEST 2010, we offered robust online meeting planning tools to allow attendees to search sessions, build a daily itinerary, select session handouts, and download material to various electronic platforms. Other new features at CHEST 2010 included an earlier meeting start day, postgraduate multipass courses, and clinical care-focused tracks. In addition, The CHEST Foundation announced its new OneBreath campaign, and initiatives of the newly formed COPD Alliance were highlighted.

We used social media to help promote CHEST 2010 and generate attendance. A new tool, eventSocial, allowed attendees to check if contacts from their social networks or e-mail accounts were attending the meeting. If not, they could easily use eventSocial to invite colleagues. Overflow rooms were available this year, offering live broadcasts of sessions that were expected to fill to seating capacity. These overflow rooms turned out to be almost as popular as the sessions themselves and were well used.

The ACCP also welcomed worldwide media coverage surrounding the scientific abstracts presented at CHEST 2010. Abstracts generating the most interest were related to a variety of consumer-focused topics, including the link between teens, texting, and sleep disorders; and bronchial thermoplasty as a new treatment for asthma. These abstracts and many others resulted in hundreds of print, broadcast, and online stories around the world. While we are in the process of analyzing the rich data that we collected from the meeting, several high-level themes emerged to the focus groups that we conducted. For example, many of the research participants who attended CHEST 2010 said that they consider the meeting to be a can’t-miss event because the education is more clinically focused than that at other meetings. The enhancements at CHEST 2010—many of which originated from feedback that we received from members like you—combined with the spectacular physical setting, resulted in what I have been referring to as “an aura of happiness,” an energized meeting and superlative attendee experience.

One of the more gratifying moments for me occurred after the meeting on my return flight from Vancouver. A passenger who attended CHEST 2010 animatedly described the meeting to a fellow passenger. In particular, the keynote address, Percussing the Chest in the Era of Homo Technologicus, by the best-selling author, Abraham Verghese, MD, moved this attendee. Dr Verghese provided thoughtful insight into taking the history and physical exam of the patient and asserted the importance of this ritual in the era of the “patient.” The attendee compared the keynote to his participation in the ACCP Simulation Center, where he gained experience in health-care systems that provide tele-ICU services. Tele-ICU is a growing part of critical care practice, with 10% of adult patients receiving critical care services in the United States now supported by off-site providers. These two very different, yet valuable, experiences struck this attendee and speak to the tremendous breadth of high-quality clinical education that CHEST offers.

I welcome your comments and suggestions for CHEST 2011. Plans are well underway for this meeting that will be held October 22-27, 2011, in Honolulu, Hawaii, which will feature opportunities for the local community to present best practices in “Centers of Excellence,” and for attendees to learn about the local policies affecting practice, experience additional CME on neighboring islands, and much, much more.

Missed CHEST 2010? Abstracts of original investigations and case reports presented at CHEST 2010 are now available online at http://chestjournal.chestpubs.org.

On behalf of the ACCP, aloha, and best wishes for a happy and healthy New Year!

| Dir MARKOWSKI is Executive Vice President and Chief Executive Officer of the American College of Chest Physicians. |  

PRACTICE MANAGEMENT RESOURCES

Strong Presence at CHEST 2010

The ACCP Practice Management Department has provided two unique educational opportunities for attendees for the past 5 years at the annual CHEST meeting.

One-on-One Practice Management Consultations

Diane Krier-Morrow, MBA, MPH, CCS-P; and Marla Brigha

The ACCP Practice Management Consultations program provides consultations for pulmonary physicians and non-Medicare third-party payers. The program is a new opportunity for participants to discuss practice management, billing, and critical care with experts in the field.

Three individuals working in the same state (an NP, an RRT, and an administrator new to the practice) met with Diane sequentially to discuss PQRS. Diane encouraged these attendees to keep in touch and continue the dialogue that began at CHEST on PQRS.

A new solo practitioner brought sample E/M documentation to discuss. Scott Manaker, MD, FACP, joined this discussion and enhanced the information provided to the attendee.

An attended wanted to talk about problems with Medicare and had not realized that CPT 92910 could be reported (if documented appropriately), in addition to critical care reporting, CPT codes 99291 and 99292.

Two industry representatives discussed their devices and how to proceed with development of CPT codes.

Practice Management Roundtable Discussions

Informal discussions led by members of the Practice Management Committee and the Practice Operations Network took place on Tuesday and Wednesday in the Lung Health Lounge during the lunch hour.

Topics included:

- Coding and Reimbursement Issues: Facilitated by Alan Plummer, MD, FACP, and Diane Krier-Morrow, MBA, MPH, CCS-P
- Using Nonphysician Providers in Your Practice: Facilitated by Joseph Austin, MD, FACP, Michael McCormick, RRT, Irby Williams, MBA, and Tom Sverson, CMPE
- Electronic Health Records: Facilitated by Kim French, MHA

Attendees at CHEST 2010 had many diverse practice management issues they were able to address in the forums provided by the ACCP Practice Management Department. Throughout the various meetings, attendees were encouraged to purchase the 2011 edition of Coding for Chest Medicine. Ms Krier-Morrow, in particular, emphasized that Coding for Chest Medicine 2011: Pulmonary, Critical Care, Sleep addresses almost every type of inquiry she had during her one-on-one consultations and at the roundtable discussions. This publication is an invaluable practice management resource tool that is a “must-have” in every pulmonary, critical care, and sleep medicine practice in the United States. She also noted that in addition to Coding for Chest Medicine 2011, the ACCP is selling the AMA’s professional edition of CPT® 2011. Order both resources today at https://accp.chestnet.org/store/VA/StoreAction.do?method=VIEW&pcrNum=23.

Take advantage of one-on-one consultations and practice management roundtables at CHEST 2011 next October in Hawaii.

By DIANE KRIER-MORROW, MBA, MPH, CCS-P, AND MARLA BRIGHA

Strong Presence at CHEST 2010

Notes From CHEST 2010

FROM THE COLLEGE

NEWS FROM THE COLLEGE

DECEMBER 2010 • CHEST PHYSICIAN
Breathe Strong

BY SANA RAOOF

In the 2009-2010 academic year, I had the pleasure of lecturing on the benefits of regular cardiovascular exercise, especially running, and the dangerous bodily effects of smoking cigarettes.

In the New York Jericho School District (where I grew up), health and social workers, as well as every middle and high school health teacher, worked with me to coordinate 2 weeks (1 in the winter and 1 in the spring) during which I could teach the health classes about the theme of ‘breathing strong’. After 35 classes, I was overwhelmed by positive feedback and sincere responses from students across the spectrum—grades 7 through 12, all demographics, athletic and nonathletic, and smokers and nonsmokers included. I would like to discuss some of the smoking-related components of my presentation.

Having graduated from high school only 2 years ago, I remember the classic smoking education in health class quite clearly, as well as the degree of detachment and desensitization that my classmates and I felt with regards to the health warnings.

In response to this phenomenon, my presentation intentionally represented a stark departure from traditional health lectures. Every minute or so, I kept attention and enthusiasm alive by asking students questions, for example: (1) What are some ingredients in cigarettes? (2) Who can trace the pathway from breathing smoke all the way to nicotine getting to your brain? (3) Which smoke do you play? How would your performance in that sport be changed if you dropped your bronchies? My questions were meant to make the students imagine their priorities? My questions were meant to make the students imagine their priorities?

One image that evoked startling reactions was that of a 32-year-old man, looking muscular and healthy in one photo with his toddler son, oblivious to his lung cancer, and a photo of him 2 months later, lying like a skeleton on a hospital bed, supported by a respirator and his son by his side.

By prompting the students repeatedly to apply concepts we had discussed to different scenarios such as this one, I am confident that the message became quite real and personal to them.

I segued into the running component of my presentation by juxtaposing an image of a 16-year-old female runner and a 16-year-old, unathletic female smoker. I asked which girl was likely to have more friends. Although the kids uniformly chose the runner, I explained that both girls at the age are statistically likely to have similar numbers of friends, but the runner’s friends are likely to be non-smokers and to look like her (fit and athletic), whereas the smoker’s friends are probably smokers and unathletic, as well.

The message was diplomatic enough to be received well by both the fit and the athletically challenged and the smokers and the nonsmokers in the room.

I am fortunate to be continuing the program throughout the Jericho School District again this year and am incredibly eager to deliver it in other districts, states, and regions. If readers envision this program being given in their local schools, please contact me at sraoof@gfas.harvard.edu, and I will be excited to come to your district.

SANA RAOOF is a 20-year-old junior at Harvard University, studying chemistry and physics. She participates in debate and track at Harvard, both of which influenced her in her efforts to persuade kids to run and not to smoke.

Introducing the COPD Alliance

BY BRIAN W. CARLIN, MD, FCCP
Chair, COPD Alliance

The American College of Chest Physicians and four other international medical societies have announced their formal partnership in the fight against chronic obstructive pulmonary disease. The COPD Alliance, composed of the ACCP, the American Academy of Nurse Practitioners, the American Academy of Physician Assistants, the American College of Osteopathic Family Physicians, and the American College of Osteopathic Internists, represents 200,000 primary care and specialty clinicians and proposes to use a focused awareness and education campaign to bring about significant change in the recognition, diagnosis, and treatment of patients suffering from COPD.

Although COPD awareness programs are not new, the COPD Alliance is taking a unique approach to COPD education by targeting primary care clinicians. This is significant because it is estimated that 24 million Americans may have COPD, with only 50% having been diagnosed.

In 2010, the total economic cost of COPD is expected to be $49.9 billion. This figure includes $29.5 billion in direct health-care expenditures and $20.4 billion in indirect costs.

The burden of the morbidity and mortality associated with COPD has a significant negative impact on the quality of life of the patients and their families and society as a whole.

The Alliance will be using its pooled resources to engage a broad range of primary care clinicians to step forward in the fight against COPD. Primary care clinicians will be asked to integrate the routine use of validated screening measures for patients at risk for the development of COPD, to use spirometry to confirm the diagnosis, and to manage these patients with the best available evidence-based therapy.

To keep COPD information at clinicians’ fingertips, the COPD Alliance has launched www.COPD.org, a central, Web-based repository of new and existing COPD tools readily available and accessible for free. COPD.org will serve as an electronic tool kit supporting the efforts of health-care providers, as well as patients and caregivers. A variety of outreach and promotional strategies will be used to access members of the partner organizations.

In 2011, each organization will be developing and delivering educational strategies for its members. These strategies will be tailored to the organization’s particular membership. In addition, clinicians-in-training will be targeted through these educational strategies, for few training programs currently offer any comprehensive training in COPD management for residents or fellows.

The goal of these efforts is to improve clinician acumen in the early recognition and appropriate diagnosis of COPD, as well as to develop strategies to more effectively treat patients who have this chronic illness.

Currently available tools, such as the COPD Population Screener, the Tobacco Dependence Treatment Toolkit, the GOLD recommendations for the diagnosis and treatment of COPD, and case-based COPD video vignettes will be used as part of the Alliance’s strategy.

The COPD Alliance was officially launched at the American Osteopathic Association annual meeting in October and at CHEST 2010. Further launches are planned for the AANP, AAPA, and ACOI meetings early next year.
Ibogaine's computer, not through a fax," our computer to the pharmacy, he said. "So if you are going to go dipping, start generating complete lists of all medications a patient is taking; provide information related to any lower-cost, therapeutically appropriate drugs; and, most notably, transmit prescriptions to pharmacies electronically.

Faxing of the prescription does not count, even if a computer system auto-generates the fax, Mr. McCormick cautioned. The prescription “must basically go from your computer to the pharmacy’s computer, not through a fax,” he specified.

To obtain the bonus, providers can report their use of e-prescribing in any of three ways. “Probably the easiest way to get started is the claims-based reporting,” he said, which entails simply adding the G8533 code to the other codes.

Alternately, providers can use registry-based reporting or electronic health record (EHR)-based reporting.

The list of patient encounters considered eligible for e-prescribing is “pretty comprehensive,” including all outpatient office visits (those having 992xx codes), home health visits, nursing home visits, and psychiatric care visits, he said. However, inpatient visits are not eligible.

A noteworthy caveat is that providers will not be able to earn both the e-prescribing bonus and another bonus for implementing the EHRs that the CMS is offering, because e-prescribing is among the 15 core measures of EHR implementation.

Put another way, “there is no double-dipping, starting in 2011,” Mr. McCormick said. “So if you are going to go for that [EHR] bonus, which is a lot more money – $44,000 per provider paid over 5 years – you can’t use it for the eRx bonus as well.”

Certain providers will be exempt from the penalty, he added: those who generate fewer than 100 claims with eligible eRx patient codes, those for whom less than 10% of patient encounters are eligible (e.g., hospital-based physicians), and those facing relevant hardships, namely, practicing in a rural area with limited high-speed Internet service or a limited number of pharmacies able to receive prescriptions electronically.

The program’s rules, which change annually, can be found online (www.cms.gov/ezRxIncentive).

By Susan Birk
Elsiever Global Medical News

CHICAGO – Contrary to common perception, “the nation’s antitrust laws allow – even encourage – doctors to collaborate in ways that lower costs and improve patient care,” said Jon Leibowitz, chairman of the Federal Trade Commission, at the annual meeting of the American Medical Association House of Delegates. If doctors join forces to fix prices, the FTC will stop them, but if they work together to deliver affordable, high-quality care, “not only will we leave you alone, we’ll applaud you. And we’ll do everything we can to help you put together a plan that avoids antitrust pitfalls,” Mr. Leibowitz said in a speech that sought to dispel any stereotype that physicians might have of the commission as being run by “fastidious bureaucrats” and “skeptical socialists” determined to keep doctors from charging fair prices.

“Too often, I believe, our antitrust enforcement actions are portrayed as a barrier to improved care,” he said.

The relationship between organized medicine and the FTC has become strained recently by physician opposition to the “Red Flag Rule” that requires small businesses, including medical practices, to develop policies to detect and prevent identity theft.

The American Medical Association, the American Osteopathic Association, and the Medical Society of the District of Columbia filed suit against the FTC in May to block it from enforcing the rule against physicians. The “bureaucratic burden” imposed by the rule “outweighs any benefit to the public,” Cecil B. Wilson, then AMA president-elect, said in a statement.

Mr. Leibowitz said the commission agrees with physicians that the rule is overreaching, and has urged Congress to provide a legislative fix for the issue as soon as possible.

Mr. Leibowitz cited several areas for potential cooperation between physicians and the FTC, all stemming from the Affordable Care Act. The use of health information technology to improve work flow and monitor populations and individuals; clinical integration; and accountable care organizations (ACO) are among the areas that hold potential for collaboration to improve quality and lower health care costs, he said.

Although they are not “a free pass to fix prices,” he said that health information technology systems “can be an important tool” to make patient care more effective and affordable. The FTC recently issued three favorable advisory opinions on HIT use by health care providers.

In the area of clinical integration, the FTC provides guidance to providers in the form of advisory opinions regarding joint ventures. The FTC will analyze a proposal and, where feasible, provide an opinion on whether it would recommend an enforcement action if the proposal were implemented, he said.

With regard to ACOs (integrated health systems that will be responsible for providing care to defined populations), “there is already talk of their moving into the private sector,” and “we want to work with you moving forward” to avoid competition issues, he said. “As long as the government purchases the services and unilaterally sets payment levels and terms, there won’t be an antitrust issue.”
By Mary Ellen Schneider

Medicare’s decision to eliminate consultation codes has resulted in a loss of revenue for many physicians and forced some to cut back on appointments with Medicare beneficiaries, according to a survey commissioned by the American Medical Association and several other medical specialty societies.

In January, officials at the Centers for Medicare and Medicaid Services discontinued the use of inpatient and outpatient consultation codes when billing Medicare, except for telehealth codes. Physicians instead were asked to use new or established office visit codes, initial hospital care codes, or initial nursing facility care codes. At the time of the policy change, CMS officials said they could no longer justify paying physicians more for a consultation when they had reduced so much of the documentation required to bill for these consultations. The agency also said that eliminating consultation codes would reduce the confusion around the definitions of consultations, transfers, and referrals.

However, many specialists believe that the approach is flawed and is hurting both their financial bottom line and patient access to care.

In an online survey of about 5,500 physicians, 72% said that not being able to bill for consultations had decreased their total revenues by more than 5%, with about 30% reporting their revenues had fallen more than 15%.

The loss of revenue has in turn had an impact on physicians’ practices. For example, 20% of respondents said they have already reduced the number of new Medicare patients seen in their practices. Additionally, 39% said they will hold off on purchasing new equipment or health information technology.

The policy change may also undermine efforts to improve patient care coordination. About 6% of responding physicians said they have stopped providing primary care physicians with written reports following consults with Medicare patients, and another 19% said they plan to do so.

In a letter to the CMS, officials from more than 30 medical specialty societies, including the American College of Physicians, the American College of Gastroenterology, the American Geriatrics Society, and the Society of Thoracic Surgeons, urged the agency to revise the policy when they issue a final regulation on the 2011 Medicare Physician Fee Schedule this fall. The organizations suggested that the CMS consider paying consulting physicians for providing the referring physician with a comprehensive report.

They also said the CMS could ease some of the financial pressure on physicians by revising its guidelines for prolonged visits to allow for reimbursement for services provided outside of the face-to-face visit, such as reviewing charts and communicating with families and other health care providers.

Dr. Philip Marcus, FCCP, comments: The wholesale elimination of reimbursement for consultations has hurt many physicians who provide no procedural services but spend a significant amount of time with a complex patient. The reactions expressed in the survey, viz., limiting Medicare patients and eliminating reports, will likely increase. Also, it is likely that other insurers will follow Medicare’s lead. Unless this situation is remedied, the entire scope of consultations as we knew it will change forever.

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American College of Chest Physicians
Education Calendar 2011

Sleep Medicine 2011
January 27-30
Tempe, AZ

Celebration of Pediatric Pulmonology 2011
April 8-10
Ft. Lauderdale, FL

ACCP Critical Care Medicine Board Review 2011
August 26-30
San Antonio, TX

ACCP Sleep Medicine Board Review 2011
August 26-29
San Antonio, TX

Lung Pathology 2011
August 30
San Antonio, TX

Mechanical Ventilation 2011
August 30
San Antonio, TX

ABIM Critical Care Medicine and Pulmonary Disease SEP Modules
August 30
San Antonio, TX

ACCP Pulmonary Medicine Board Review 2011
August 31-September 4
San Antonio, TX

CHEST 2011
October 22-27
Honolulu, Hawaii

ACCP Simulation Program for Advanced Clinical Education

Basic and Advanced Bronchoscopy Skills
February 11-13
Orlando, FL

August 5-7
Chicago, IL

Improving Outcomes in Critical Care
February 18-20
Chicago, IL

Mechanical Ventilation
February 25-27
Chicago, IL

Difficult Airway Management
March 18-20
July 22-24
Northbrook, IL

Ultrasoundography: Fundamentals in Critical Care
April 15-17
Baltimore, MD

Focused Pleural and Vascular Ultrasound
September 22-23
Chicago, IL

Critical Care Echocardiography
September 24-25
Chicago, IL

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New Assay Stratifies Risk in Pulmonary Embolism

The highly sensitive TnT assay identifies patients who warrant closer long-term follow-up.

BY BRUCE J ANCIN
Elsevier Global Medical News

STOCKHOLM – New-generation, highly sensitive troponin T assays provide added value in the form of improved early risk stratification of normotensive patients with acute pulmonary embolism, according to a prospective head-to-head study.

“I think the most important finding of this study is that with this new highly sensitive troponin T assay, we could safely identify those patients who have a low 30-day risk of adverse events, with a sensitivity of 100% and also a negative predictive value of 100%,” Dr. Mareike Lankeit said at the annual congress of the European Society of Cardiology.

In contrast, the conventional troponin T assay had a negative predictive value of only 50%. It would have missed half of the patients who experienced an adverse event (defined as death, endocardial tubulation, need for catecholamines, or cardiopulmonary resuscitation). Moreover, of the three biomarkers studied, including N-terminal prohormone brain natriuretic peptide, only baseline highly sensitive troponin T (hsTnT) was a significant predictor of mortality risk during long-term prospective follow-up of nearly 3 years, added Dr. Lankeit of Georg-August University Göttingen (Germany). Recent guidelines emphasize the need for early risk stratification of patients with acute pulmonary embolism. Consensus exists that patients who present with refractory hypotension or shock are at very high risk of early mortality and should undergo urgent recanalization.

For strategies on non-high-risk patients (that is, those who are normotensive on admission) remain controversial. Dr. Lankeit’s hypothesis was that the use of more-sensitive laboratory biomarkers in the emergency department would result in improved prognostic assessment of these normotensive patients with acute pulmonary embolism. Patients who were identified in this very low-risk group might be possible candidates for home treatment.

She presented a prospective study of 156 consecutive normotensive patients with confirmed acute pulmonary embolism in which she compared the prognostic value of baseline hsTnT, conventional TnT, and NT-proBNP testing.

An hsTnT cutoff value of 14 pg/mL, which 64% of the patients met or exceeded, had a 100% prognostic sensitivity and negative predictive value for 30-day adverse outcomes.

The NT-proBNP assay performed equally well, but the conventional TnT assay, using the cutoff value of 0.03 ng/mL, would have misclassified 50% of patients with an adverse early outcome as being at low risk.

An elevated baseline hsTnT alone was associated with a twofold increased risk of adverse 30-day outcomes. An elevated NT-proBNP was associated with a 2.3-fold risk. But when an hsTnT of at least 14 pg/mL was associated with evidence of right ventricular dysfunction on echocardiography, the 30-day adverse outcome risk was increased to 11.9-fold.

The prognostic power of echocardiography, which has the advantage of right ventricular dysfunction plus an NT-proBNP of at least 1,000 pg/mL was even more impressive, with an associated 17.8-fold increased risk of an adverse 30-day outcome.

In contrast, the conventional TnT assay didn’t provide additive prognostic information when it was combined with evidence of right ventricular dysfunction.

During a median follow-up of 3 years, 14.4% of the patients died. The only baseline variables that were significantly associated with increased long-term mortality risk were an elevated hsTnT, malignancy, and heart failure.

Thus, a baseline hsTnT of 14 pg/mL or greater identifies a subgroup of patients with acute pulmonary embolism who warrant closer long-term follow-up, according to Dr. Lankeit.

She said that in her hospital, where hsTnT is now part of the routine diagnostic laboratory panel that is administered in the emergency department to patients presenting with acute pulmonary embolism, the hsTnT results come back within 30 minutes.

Several of Dr. Lankeit’s coinvestigators have received research funding and honoraria for lectures from Roche Diagnostics, which markets the hsTnT assay. Dr. Lankeit declared that she has no financial conflicts.

Incidence, Risks for Thoracic Aneurysm in AAA Defined

BY RICHARD M. KIRKNER
Elsevier Global Medical News

NEW YORK — About one in four patients with abdominal aortic aneurysm may be at risk for thoracic aortic aneurysm, judging by results of a single-center retrospective study of more than 1,000 patients.

Dr. Rabih Chaer, a vascular surgeon at the University of Pittsburgh, and his colleagues found that, among 1,082 patients diagnosed with abdominal aortic aneurysm (AAA) who had chest CT at follow-up, 23.4% had some sort of thoracic aneurysm afterward.

“Despite the clinical associations that have been observed between AAA and peripheral aneurysms and thoracic aneurysms, screening for other common aneurysms continues to be controversial,” Dr. Chaer said at the annual meeting of the Eastern Vascular Society.

Therefore, they conducted the study to quantify the risk for thoracic aortic aneurysm in these patients and to identify the factors that might increase or decrease the risk.

AAA patients with aortic aneurysm (n = 253)

Demographic

Demographic

AAA without thoracic aortic aneurysm (n = 829)

AAA with thoracic aortic aneurysm (n = 253)

Average age

74.1

76.3

White

92.4%

86.2%

Black

6.4%

12.6%

Female

30.5%

41.5%

Family history AAA

2.2%

5.9%

Family history TAA

0.2%

1.6%

AAA location

Juxtarenal

2.8%

8.3%

Infrarenal

94.8%

77.1%

Suprarenal

2.4%

14.6%

Comorbidities

Diabetes mellitus

22.1%

12.2%

Hypertension

72.3%

81.8%

COPD

36.1%

39.1%

Smoking

79.2%

72.7%

Obesity

17.4%

22.5%

Source: Dr. Chaer

In a prospective study of 156 consecutive normotensive patients with confirmed acute pulmonary embolism in which she compared the prognostic value of baseline hsTnT, conventional TnT, and NT-proBNP testing.

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During a median follow-up of 3 years, 14.4% of the patients died. The only baseline variables that were significantly associated with increased long-term mortality risk were an elevated hsTnT, malignancy, and heart failure.

Thus, a baseline hsTnT of 14 pg/mL or greater identifies a subgroup of patients with acute pulmonary embolism who warrant closer long-term follow-up, according to Dr. Lankeit.

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Several of Dr. Lankeit’s coinvestigators have received research funding and honoraria for lectures from Roche Diagnostics, which markets the hsTnT assay. Dr. Lankeit declared that she has no financial conflicts.
Home Oxygen Safe for Some Bronchiolitis Patients

By Susan London
Elsevier Global Medical News

VANCOUVER, B.C. – Selected children with bronchiolitis seen in the emergency department could be safely managed with home oxygen therapy and thereby avoid hospital admission, according to Dr. Sarah M. Halstead and her co-investigators.

In a retrospective study of more than 5,000 pediatric cases of bronchiolitis with hypoxia seen in the emergency department (ED), only 6% of children sent home on oxygen had to be admitted to the hospital at a later time, with none having adverse outcomes or requiring intensive care or placement of an advanced airway.

Moreover, the ED’s overall rate of hospital admission for children with bronchiolitis fell by about a third from historical levels before the home oxygen protocol was used, based on results reported at the annual meeting of the Pediatric Academic Societies.

“To improve clinical care, we hope that this data, which does support the safety of a home oxygen program for patients with bronchiolitis seen in the ED, will encourage other institutions to consider similar home oxygen protocols,” Dr. Halstead and her co-investigators said in a poster.

“Increasing ED overcrowding and boarding of inpatients makes the development and analysis of this and other novel outpatient care strategies imperative,” they said.

The investigators used electronic medical records to assess outcomes among children aged 1-18 months seen in the emergency department with bronchiolitis during the 2005 through 2009 bronchiolitis seasons, a period when the ED had a home oxygen protocol in place.

Children with cardiopulmonary conditions who required oxygen at baseline were excluded.

“Prior to discharge on home oxygen, we observed patients in the ED for 8 hours,” explained Dr. Halstead, a pediatrician at the Children’s Hospital in Aurora, Colo.

“If they had oxygen saturations of greater than 90% on half a liter or less of nasal cannula oxygen, they were able to maintain adequate hydration without frequent deep suctioning, they had no signs of respiratory deterioration, and both the caregiver and the attending were comfortable with discharge home, then a follow-up appointment was arranged and home oxygen was supplied for the family,” Dr. Halstead said.

The study results were based on data from 5,065 patients with bronchiolitis seen in the emergency department, 13% of whom were discharged on home oxygen therapy.

Within this group, only 6% had to be admitted at a later time – a value that did not differ significantly from the 4% seen among children discharged on room air.

The leading reason for admission after a discharge on home oxygen was an increased oxygen requirement (51%), followed by increased work breathing (46%), parental concern or compliance issues (24%), need for intravenous fluids (8%), and difficulties with home oxygen therapy (5%).

“There were no adverse outcomes. ICU admissions, or need for advanced airways in any of these patients,” Dr. Halstead reported.

The ED’s overall hospital admission rate for bronchiolitis (which captured both children initially admitted and children admitted after initially being sent home) was 28% during the 2005-2009 study period – substantially lower than the 39%-40% seen historically before implementation of the home oxygen protocol.

Because some children sent home on oxygen may have been admitted later to outside institutions, the admission rate found in the study may be an underestimate, Dr. Halstead said.

She attributed the success of the home oxygen protocol in large part to support from respiratory therapists and primary care providers.

“We have respiratory therapists available in the ED 24 hours a day, 7 days a week. They perform home oxygen teaching and arrange for oxygen to be delivered to the family,” Dr. Halstead pointed out.

“We also have support from the [primary care providers] in the community who have made themselves available for follow-up within 24 hours of discharge. They are comfortable caring for their patients on home oxygen, including weaning them off oxygen in an outpatient setting,” she said.

Severe Asthma’s Economic Toll Exceeds $10 Billion

By Heidi Splete
Elsevier Global Medical News

NEW ORLEANS – Children’s school absences and their parents’ absences from work reflected the greatest economic burden of impairment in children with severe asthma, according to data from an observational study of more than 600 children.

“Asthma costs in the United States have exceeded $10 billion,” said Dr. Stanley J. Szefler of National Jewish Health, Denver, and his colleagues. That figure includes $4.6 billion in indirect costs, such as mortality and lost school and work days, and $6.1 billion in direct costs, such as medications and hospital stays.

Dr. Szefler and his colleagues examined whether improvements in asthma impairment in young children reduced the cost burden of asthma. The study was the first to assess the economic burden of asthma in children aged 6-12 years with severe or difficult-to-treat illness as defined by the National Heart, Lung, and Blood Institute (NHLBI) guidelines, the researchers said. The results were presented in a poster at the annual meeting of the American Academy of Allergy, Asthma, and Immunology.

The study included 628 children aged 6 years and older with severe or refractory asthma. At baseline, 386 children had very poorly controlled (VPC) asthma, 219 had well-controlled (NCW) asthma, and 23 had high-controlled (WC) asthma. The children were a subgroup of the TENOVA study, a large observational study that assessed patients with severe and difficult-to-treat asthma. Asthma impairment status was determined using the NHLBI guidelines. On the basis of the guidelines, 62% of the children were classified as VPC, the researchers noted.

The investigators compared the cumulative costs for patients who were consistently VPC at baseline, 12 months, and 24 months with the costs for patients who improved over the 24-month study period. Primary outcomes included school days lost, cost of asthma medications, unscheduled doctor visits, overnight hospital stays, and emergency department visits.

Overall, the costs of school and work days lost in the VPC group at baseline, 12 months, and 24 months were $3,087, $3,139, and $4,277, respectively. Those costs were significantly higher than for the NCW group ($369, $251, and $478, respectively) and the WC group ($0, $166, and $0, respectively).

The costs of school absences were measured using gender-specific dollar amounts to represent a parent’s lost work day and adjusted to 2002 dollars. Medications were the next largest contributor to cost burden. Medication costs in the VPC group at baseline ($2,117), 12 months ($2,312), and 24 months ($2,298) were significantly higher than in the NCW group ($1,949, $1,987, and $2,312, respectively) and the WC group ($1,861, $1,640, and $1,605). The costs were measured using the average recommended daily dose.

“Significant reduction in cost was observed for patients whose impairment status improved after baseline,” the researchers noted. “The highest costs were associated with patients whose asthma impairment status remained consistently VPC,” they wrote. Cost reductions asso- ciated with improved impairment status occurred in measures of fewer hospital overnight stays, fewer unscheduled physician visits, and fewer emergency department visits.

The likelihood of a patient changing from VPC to WC is small, but the results suggest that even an improvement from VPC to NCW could have a noticeable impact on the costs of asthma care, the researchers said.

The study was sponsored by Genentech. Dr. Szefler received funding from several organizations that are sponsored by the National Institutes of Health, as well as from several pharmaceutical companies.
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VANCOUVER, B.C. — A significant number of hospitalized patients are at high risk for obstructive sleep apnea, but few have been evaluated for OSAP, Dr. Sunita Kumar reported at CHEST 2010, the annual meeting of the American College of Chest Physicians.

Because OSAP has been shown to increase the risk of adverse outcomes such as stroke and heart failure, screening inpatients might help prevent complications. However, Dr. Kumar noted, the diagnosis and treatment of OSAP in hospitalized patients have not been previously shown to affect outcomes.

Of 195 inpatients surveyed over a 24-hour period at Loyola University Medical Center in Maywood, Ill., 157 (81%) were found to be at high risk for OSAP. Of those, 41 had undergone a previous sleep study, and of the 41 who had been evaluated, 31 were found to have OSAP, Dr. Kumar said of the division of pulmonary and critical care medicine at Loyola.

In comparison, 5% of the general population is estimated to have sleep apnea. The patients' mean age was 62 years, and 82% were older than 50 years.

States, and 82% were older than 50 years. The 195 inpatients had a mean BMI of 28.

The patients' mean age was 50 years. Those with known OSAP had a mean BMI of 44, the high-risk patients had a mean BMI of 32, and the low-risk patients had a mean BMI of 28.

Dr. Aukley of Case Western Reserve University, Cleveland, and his colleagues undertook their 4-month, prospective observational study to explore earlier findings that patients with OSAP experience more adverse outcomes in the perioperative setting (Chest 2008;133:1128-34).

In their study, 18% of those with diagnosed OSAP, 22% of those at high risk, and 14% of the low-risk patients experienced complications. Hypoxemia was the most frequent complication. The incidence in complication rate between the known OSAP patients and the low-risk patients was significant, even after researchers controlled for age, diagnosis, and comorbidities.

Patients with sleep apnea more commonly experience complications, especially hypoxemia, while hospitalized, Dr. Aukley concluded. The questionnaires have not been validated in hospitalized patients, and the patients were not monitored continuously, which were two limitations of the study, he noted.

Dr. Kumar reported that she had no relevant financial conflicts. Dr. Aukley disclosed receiving support from RespMed and Coliphan and consulting fees from Cleveland Medical Devices, but his current study received no funding.
TYGACIL is indicated for the treatment of adults with:

- Complicated skin and skin structure infections caused by Escherichia coli, Enterococcus faecalis (vancomycin-susceptible isolates), Staphylococcus aureus (methicillin-susceptible and -resistant isolates), Streptococcus agalactiae, Streptococcus anginosus grp. (includes S. anginosus, S. intermedius, and S. constellatus), Streptococcus pyogenes, Enterobacter cloaca, Klebsiella pneumoniae, and Bacteroides fragilis
- Complicated intra-abdominal infections caused by Citrobacter freundii, Enterobacter cloacae, Escherichia coli, Klebsiella oxytoca, Klebsiella pneumoniae, Enterococcus faecalis (vancomycin-susceptible isolates), Staphylococcus aureus (methicillin-susceptible and -resistant isolates), Streptococcus anginosus grp. (includes S. anginosus, S. intermedius, and S. constellatus), Bacteroides fragilis, Bacteroides thetaiotaomicron, Bacteroides uniformis, Bacteroides vulgatus, Clostridium perfringens, and Peptostreptococcus micros
- Community-acquired bacterial pneumonia caused by Streptococcus pneumoniae (pencillin-susceptible isolates), including cases with concurrent bacteremia, Haemophilus influenzae (beta-lactamase negative isolates), and Legionella pneumophila

Important Safety Information

- TYGACIL is contraindicated in patients with known hypersensitivity to tigecycline
- Anaphylaxis/anaphylactoid reactions have been reported with nearly all antibacterial agents, including tigecycline, and may be life-threatening. TYGACIL should be administered with caution in patients with known hypersensitivity to tetracycline-class antibiotics
- Isolated cases of significant hepatic dysfunction and hepatic failure have been reported in patients being treated with tigecycline. Some of these patients were receiving multiple concomitant medications. Patients who develop abnormal liver function tests during tigecycline therapy should be monitored for evidence of worsening hepatic function. Adverse events may occur after the drug has been discontinued
- The safety and efficacy of TYGACIL in patients with hospital-acquired pneumonia have not been established
- An increase in all-cause mortality has been observed across phase 3 and 4 clinical studies in TYGACIL-treated patients versus comparator-treated patients. The cause of this increase has not been established. This increase in all-cause mortality should be considered when selecting among treatment options
- TYGACIL may cause fetal harm when administered to a pregnant woman
- The use of TYGACIL during tooth development may cause permanent discoloration of the teeth. TYGACIL should not be used during tooth development unless other drugs are not likely to be effective or are contraindicated
- Acute pancreatitis, including fatal cases, has occurred in association with tigecycline treatment. Consideration should be given to the cessation of the treatment with tigecycline in cases suspected of having developed pancreatitis
- Clostridium difficile-associated diarrhea (CDAD) has been reported with use of nearly all antibacterial agents, including TYGACIL, and may range in severity from mild diarrhea to fatal colitis
- Monotherapy should be used with caution in patients with clinically apparent intestinal perforation
- TYGACIL is structurally similar to tetracycline-class antibiotics and may have similar adverse effects. Such effects may include: photosensitivity, pseudotumor cerebri, and anti-anabolic action (which has led to increased BUN, azotemia, acidosis, and hyperphosphatemia). As with tetracyclines, pancreatitis has been reported with the use of TYGACIL
- To reduce the development of drug-resistant bacteria and maintain the effectiveness of TYGACIL and other antibacterial drugs, TYGACIL should be used only to treat infections proven or strongly suspected to be caused by susceptible bacteria. As with other antibacterial drugs, use of TYGACIL may result in overgrowth of non-susceptible organisms, including fungi
- The most common adverse reactions (incidence >5%) are nausea, vomiting, diarrhea, abdominal pain, headache, and increased SGPT
- Prothrombin time or other suitable anticoagulant test should be monitored if TYGACIL is administered with warfarin
- Concurrent use of antibacterial drugs with oral contraceptives may render oral contraceptives less effective
- The safety and effectiveness of TYGACIL in patients below age 18 and lactating women have not been established

Please see brief summary of Prescribing Information on adjacent page.