

January 2001 Press Releases

## High-Risk Female Asthma Patients Were Hospitalized Twice as Often as Males and Stayed Longer, Yet Displayed Lower Carbon Dioxide Levels

"Influence of Gender on Rates of Hospitalization, Hospital Course, and Hypercapnea in High-Risk Patients Admitted for Asthma"

David R. Trawick, MF, PhD; Carole Holm, RN; and Joel Wirth, MD, FCCP  
CHEST 2001; 119:115-119

[Abstract](#) [Full text](#)

In a study examining 10 years of high-risk asthma admissions to the Yale-New Haven Hospital, researchers found that high-risk female patients were admitted twice as often as males, stayed in the hospital almost a day longer, yet displayed lower levels of a blood marker of asthma severity.

Writing in the January issue of CHEST, the monthly peer-reviewed journal of the American College of Chest Physicians, David R. Trawick, M.D., Ph.D., along with two colleagues, studied data on 103 high-risk patients, ages 18 - 50, who had been admitted at least twice to the hospital for asthma attacks over a 10-year period. The 103 patients accounted for 382 admissions, of which 68.6% were for female patients. The average hospital stay for men was about 4 days and for women almost 5 days. There was one male and one female death among the study group. Slightly over 14% of the 382 admissions required care in the medical intensive care unit (MICU), and slightly over 7% were given mechanical ventilation. The proportion of men requiring intensive care and intubation was not significantly different from that of the female patients.

Of the 55 patients who, during at least one of their visits, was admitted to the MICU, 28 required intubation and mechanical ventilation. The duration of intubation was slightly over 67 hours for the women and almost 51 hours for the men.

The study pointed out that a national 1990 economic estimate of illness cost related to asthma hit \$6.2 billion. About \$1.6 billion represented inpatient hospital services-the largest single direct medical expenditure in the total.

"For our study, we chose to examine data from high-risk patients since they have, by definition, an increased risk for repeat hospitalization for asthma," said Dr. Trawick, who is currently associated with the Pulmonary and Critical Care Unit of the University of Rochester Medical Center, Rochester, New York. "Furthermore, all our patients met the criteria for potentially fatal asthma which would subject them to a higher rate of illness and higher health care resource utilization."

The researchers found that, overall, male asthmatics exhibited higher carbon dioxide levels than did females. Carbon dioxide is a colorless, odorless gas given off from the lungs as a waste product of respiration. Carbon dioxide levels in the blood regulate the breathing rate. The acid-base balance of the blood and other body fluids is influenced by

levels of carbon dioxide. Males admitted to the MICU had significantly higher carbon dioxide levels than their female counterparts. The highest levels were detected in males who were intubated for mechanical ventilation.

The researchers believe their study suggests that gender-specific differences in the ventilatory response to airflow obstruction or to high carbon dioxide levels in the blood could contribute to the gender-related differences in asthma hospitalizations. Hypercapnia, or excess carbon dioxide in the blood, during acute asthma is associated with severe airflow obstruction. The researchers note that asthma patients who suffer from hypercapnia often have a longer duration of chronic asthma and are more likely to be steroid-dependent. They consider the partial pressure of carbon dioxide levels to be a gauge of severity of acute asthma exacerbation and to reflect some of the chronic features of the illness in the patients. But they could not explain why high-risk males in their study were more hypercapnic than the high-risk females in the study. They hypothesize that because males can exert greater maximal inspiratory and expiratory pressure levels, women may be more symptomatic at lower airway resistance levels. This factor could prompt clinicians to order arterial blood gas analysis earlier during their evaluation of an asthma attack, a procedure supported by the data in this study.

CHEST is published by the American College of Chest Physicians, which represents more than 15,000 members who provide clinical, respiratory, and cardiothoracic patient care in the U.S. and throughout the world.

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January 2001 Press Releases

Grinding of Teeth During Sleep Associated With Other Disorders

"Risk Factors for Sleep Bruxism in the General Population"

Maurice M. Ohayon, MD, DSc, PhD; Kasey K. Li, DDS, MD; and Christian Guilleminault, MD

CHEST 2001; 119:53-61

[Abstract](#) [Full text](#)

The grinding or clenching of teeth during sleep on a weekly basis affects more than 8% of the population and is associated with other disorders such as daytime sleepiness and anxiety, according to a new study.

The study, based on 13,057 participants in Italy, Germany, and the United Kingdom, was reported in the January issue of CHEST, the peer-reviewed journal of the American College of Chest Physicians.

The condition is known as sleep bruxism, an oral habit characterized by rhythmic activity of the jawbone muscles that cause a forced contact between dental surfaces during sleep.

It has been linked to headaches, joint discomfort and muscle aches, premature loss of teeth, and sleep disruption for both the person with bruxism as well as his or her bed partner.

The study, carried out in the three European countries, aimed to document the prevalence of sleep bruxism in the general population, the risk factors associated with the disorder, and its links to other health-related and sleep-related issues. Participants were interviewed by phone. The duration of the interviews averaged 40 minutes and ranged from 10 to 333 minutes. The information gathered was entered into a Sleep-EVAL system, a software system designed to conduct epidemiologic studies on sleep, sleep habits, and mental disorders in the general population. Validation of the data was conducted at Stanford University's Sleep Disorder Center in Palo Alto, California and the Regensburg University Sleep Disorders Center in Germany.

The International Classification of Sleep Disorders (ICSD) suggests the following as minimal criteria for sleep bruxism: the presence of teeth grinding during sleep and, at least one of the following associated features  $\Delta$  abnormal tooth wear, muscular discomfort, or sound associated with the tooth grinding. The participants in the study were divided into one of three groups: those who met the ICSD criteria, those with tooth-grinding alone, and those without tooth-grinding.

Tooth grinding which occurred at least weekly during sleep was reported by 8.2% of the participants. More than 54% of those with tooth grinding reported some related problem, including 23% who said they needed dental work because of the grinding and 8% who claimed discomfort of their jaw muscles upon awakening. More than 23% said the grinding was loud enough for bed partners to hear it. The total, then, for all those in the study population who met the ICSD criteria was 4.4%, suggesting that bruxism is the third most common form of sleep disorder following talking in one's sleep and snoring.

Snoring, breathing pauses during sleep, and obstructive sleep apnea were significantly more frequent in the sleep bruxism group and the tooth-grinding alone group than in the rest of the participants. Mental disorders, mainly anxiety disorders and hallucinations, were also significantly related to tooth grinding during sleep. About 69% of those with sleep bruxism related their condition to either aggravation, stress, or anxiety. Daily use of alcohol, tobacco, or caffeine were also associated with sleep bruxism. Researchers also noted that bruxism was unrelated to gender and decreased significantly with age. The highest prevalence was observed in the 19- to 44-year-old group.

Speaking on behalf of his colleagues, Maurice M. Ohayon, M.D, Stanford University School of Medicine, said "the results of this study raise an important concern about the risk of sleep apnea for sleep bruxers. A plausible explanation for this association," he said, "could rely on the shared anatomic problems proposed by some research such as mandibular (jawbone) deficiency, temporomandibular abnormalities, and craniofacial abnormalities."

Dr. Ohayon said that sleep bruxism should be considered in patients with sleep-disordered breathing disorders. He called on general practitioners to inquire about sleep bruxism and sleep apnea symptoms when abnormal tooth wear damage is identified. He also urged dentists to ask about symptoms of sleep-disordered breathing when dental signs of bruxism are present. "Finally," he said, "further research is necessary on the pathophysiologic mechanisms of this largely unknown sleep disorder."

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January 2001 Press Releases

New Guidelines Say Low Dose Aspirin At Least As Effective as High Doses in Preventing Stroke

"Sixth ACCP Consensus Conference on Antithrombotic Therapy"

Guset Editors: James E. Dalen, MD, MPH, Master FCCP; Jack Hirsh, MD, FCCP; Gordon H. Guyatt, MD

CHEST 119/Number 1 (Suppl)/January 2001

[Full text](#)

Low doses of aspirin (80 to 325 mg) are at least as effective as higher doses (500 to 1,000 mg) in preventing stroke in patients with cerebrovascular disease, according to new guidelines released today by the American College of Chest Physicians (ACCP).

Entitled "The Sixth ACCP Consensus Conference on Antithrombotic Therapy," the guidelines represent expert consensus various complications of atherosclerosis and related medical and surgical conditions. A range of experts participated in reviewing all significant studies on the prevention and treatment of thrombosis and developed recommendations on specific conditions and approaches. The report was issued as a special supplement to January's issue of CHEST, ACCP's peer-reviewed journal.

There are nearly 4 million stroke survivors in the United States today. Of more than 730,000 who experience a stroke each year, 5 to 14% will have another stroke within one year. In addition, up to 35% of individuals who suffer a TIA (transient ischemic attack) will go on to have a full stroke, 12% within the first year after the event. Antiplatelet and anticoagulant therapy, combined with other medical management and lifestyle modifications, can significantly help to reduce the risk of a recurrent stroke.

Authors of the stroke guidelines analyzed data from several major studies including the Swedish Aspirin Low-Dose Trial that showed a significant reduction in stroke risk using only 75 mg of aspirin. In fact, the benefit was greater than that of a study using similar

patients who had a higher dosage. Another study-the Dutch TIA Study $\Delta$ compared two dosage regimens of aspirin (30 mg vs 273 mg) in over 3,000 patients who suffered TIAs or minor strokes. The findings showed the lower dose to be just as effective as the higher dose without as many bleeding events. Data from earlier studies, including the United Kingdom Transient Ischaemic Attack trial, added to the evidence that there are no important differences in daily doses of aspirin between 30 mg and 1,300 mg for preventing stroke and other vascular events.

The guidelines' authors also noted that since the previous consensus report of two years ago, other antiplatelet drugs have been found to be effective in preventing strokes and stroke deaths, including ticlopidine, clopidogrel, and dipyridamole (particularly when used in combination with aspirin). They recommended that patients with a (noncardioembolic) stroke or TIAs should receive an antiplatelet agent regularly to reduce the risk of recurrent stroke and other vascular events. The listed acceptable options for initial therapy are: 50 to 325 mg of aspirin; combination of 25 mg of aspirin and 200 mg of extended-release dipyridamole twice a day, or 75 mg of clopidogrel daily.

For treatment of acute ischemic stroke within three hours of the onset of symptoms, the guidelines recommended the administration of intravenous (IV) recombinant tissue plasminogen activator (tPA) in a dose of 0.9 mg/kg with 10 % of the dose given as an initial bolus (a large amount administered rapidly) and the remainder infused over 60 minutes for eligible patients.

The guidelines also called for all men and women over the age of 50 with at least one risk factor for heart disease to consider taking an aspirin daily as a means of helping to prevent a heart attack. These risk factors include high blood pressure, high blood cholesterol, smoking, obesity, diabetes, lack of exercise, and family history.

Other topics addressed in the guidelines include: Antithrombotic Agents in Coronary Artery Disease; Antithrombotic and Thrombolytic Therapy for Ischemic Stroke; Prevention of and Therapy for Venous Thromboembolism; Antithrombotic Therapy in Children; Use of Antithrombotic Agents During Pregnancy; IV Thrombolysis in Acute Myocardial Infarction; Antithrombotic Therapy in Valvular Heart Disease; Antithrombotic Therapy in Atrial Fibrillation; Hemorrhagic Complications of Anticoagulant Treatment; Antithrombotic Therapy in Peripheral Arterial Occlusive Disease; Antithrombotic Therapy in Patients With Saphenous Vein and Internal Mammary Artery Bypass Grafts; Antithrombotic Therapy in Patients Undergoing Percutaneous Coronary Intervention; Platelet-Active Drugs; Heparin and Low-Molecular-Weight Heparin; New Anticoagulant Drugs. and Managing Oral Anticoagulant Therapy.

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The Co-Chairs of the consensus conference are James Dalen, M.D., FCCP, of the University of Arizona College of Medicine, Jack Hirsh, M.D., FCCP, of Hamilton Civic Hospitals in Hamilton, Ontario, Canada, and Gordon Guyatt, M.D., of McMaster University in Hamilton, Ontario, Canada.. Dr. Dalen can be reached at (520) 626-7383, Ext. 1. Dr. Hirsch can be reached at (905) 527-2299. Dr. Guyatt can be reached at (905) 525-9140.

February 2001 Press Releases

Autopsies Reveal That One Death in Five in the Medical Intensive Care Unit is Misdiagnosed

"A Study of Consecutive Autopsies in a Medical ICU"

Dessmon Y. H. Tai, MBBS, FCCP; H. El-Bilbeisi, MBBS; Sanjiv Tewari, MD; et al.  
CHEST 2001; 119:530-536

[Abstract](#) [Full text](#)

A new study shows that one death in five in a medical intensive care unit (MICU) was misdiagnosed, and in almost half of these cases a correct diagnosis would have resulted in different treatment.

Findings from the study were reported in the February issue of CHEST, the peer-reviewed journal of the American College of Chest Physicians (ACCP).

Autopsies are one of the most reliable methods to validate clinical diagnoses but have been steadily declining. In the 1940s, the rate of autopsies was about 50%. By the mid 1980s, the rate had dropped to between 10 and 15%. The reasons for the decline include the fact that autopsies are costly and not reimbursable; the litigation fears of hospitals; and the technological advances in diagnostic accuracy that make some feel that autopsies are unnecessary.

Researchers reviewed the records of 1,800 admissions, over a two-year period, to the MICU at the Cleveland Clinic Foundation in Cleveland, Ohio, where there is state-of-the-art diagnostic facilities. They set out to assess the accuracy of clinical diagnosis as compared to postmortem findings, and to also assess whether premortem knowledge of the autopsy findings would have altered patient management.

Of the 1,800 patients admitted to the MICU, 401 died. Autopsies were performed on 91 (22.7%) of these patients. Those receiving autopsies were younger than those who did not, but there were no significant differences in other categories such as sex, race, and length of stay.

Eighteen of the 91 patients (19.8%) who underwent autopsy were found to have a different diagnosis from that which was made clinically. The diagnostic errors were classified in two categories. Class 1 errors were major misdiagnosis with direct impact on therapy. Class 2 diagnostic errors comprised major unexpected findings that probably would not have changed therapy for any of the following reasons: the patient was already receiving appropriate therapy even though the diagnosis was not known; effective therapy was not available; the patient had presented with an acute cardiopulmonary arrest that was managed appropriately; or the patient had refused further investigations or treatment.

Of the 18 discordant diagnosis, 8 (44.4%) were considered class 1 or major misdiagnosis. The remaining 10 were considered class 2 misdiagnosis. All the misdiagnoses were confirmed by gross and microscopic examination or by microbiological culture during postmortem study.

Commenting on the findings, Alejandro Arroliga, M.D., FCCP, noted that the 22.7% autopsy rate in the study is higher than the overall national hospital autopsy rate in the United Kingdom (12%). He also noted that the misdiagnosis rate of 19.8% was lower than that of the largest autopsy study done to date that found 30% of the clinical diagnoses to be erroneous.

Dr. Arroliga and his colleagues noted that various studies have concluded that infection is one of the most frequently overlooked diagnosis, accounting for 25% of the misdiagnoses. They

Added that pulmonary embolism has also been a most common misdiagnosed condition. In the Cleveland Clinic study, he said, two patients died from massive pulmonary embolism that was not suspected clinically. "Unexpected findings at autopsy," Dr. Arroliga said, "contribute to the increasing pool of medical knowledge and improved clinical acumen, which may lead to better patient care."

In summary, Dr. Arroliga said: "Advances in diagnostic technology have not diminished the value of autopsy. This discordance between the clinical cause of death and postmortem diagnosis was 19.8%. In 44.4% of the discordant cases, knowledge of correct diagnosis would have altered therapy. Postmortem study can serve as a valuable monitor of quality control in diagnostic accuracy of MICU patients."

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February 2001 Press Releases

Despite Earlier Warnings, Study Finds No Increased Risk From Cough Suppressant Use in 1st Trimester

"The Safety of Dextromethorphan in Pregnancy: Results of a Controlled Study "

Adrienne Einarson, RN; Dorothy Lyszkiewicz, BSc; Gideon Koren, MD

CHEST 2001; 119:466-469

Abstract Full text

Despite earlier warnings based on animal research, a new controlled study found no extra risk of major malformations in infants of women who took dextromethorphan (DM), an active ingredient in over-the-counter common cough suppressants, during the first trimester of their pregnancy.

The results of the study were published in the February issue of CHEST, the peer-reviewed journal of the American College of Chest Physicians (ACCP).

Although DM has been on the market for years, the new research findings represent the first controlled study in humans to specifically investigate this cough medication for safety during pregnancy. Prior to this investigation, a widely-publicized study based on chick embryo research had concluded that women should not use DM during pregnancy.

Gideon Koren, M.D., along with Adrienne Einarson and D. Lyszkiewicz, from the Motherisk Program, Division of Clinical Pharmacology, Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada, examined 1995 to 1998 data involving 172 live births in the study group. All women who had used DM had been counseled by the Motherisk Program during their pregnancy. Among this group, there were 10 spontaneous abortions, one therapeutic abortion, and one stillbirth. In the matched control group of mothers who did not use DM for upper respiratory infection, there were 174 live births, with eight spontaneous abortions, two therapeutic abortions, and no stillbirths. Among the 128 women who used the cough suppressant during the first trimester of pregnancy, there were three major malformations (2.3%), 10 minor malformations (of which seven women were exposed during the first trimester), and an average birth weight of approximately 3,381 grams (about 7.4 lbs.). In the control group of 174 live births, there were five major malformations (2.8%), eight minor malformations, and an average birth weight of 3,446 grams (about 7.5 lbs.). According to the authors, the expected rate of major malformations in pregnancy ranges from 1% to 3%.

The drug involved is DM--a synthetic, nonnarcotic, centrally acting cough suppressant that is available either alone in lozenges or as an oral liquid. It is also found in combination with a large number of other compounds used for upper respiratory tract infections.

The study's investigators became interested in the research due to the large number of queries from pregnant women who called the Motherisk Program at the Hospital for Sick Children in Toronto after hearing about the animal research..

"A study in chick embryos concluded that women should not use DM during pregnancy," said Ms Einarson. "These data, although very limited in their applicability to humans, received wide publicity, causing high levels of anxiety among pregnant women and their healthcare professionals. Because of the paucity of studies specifically examining DM, we carried out the present study to provide additional evidence-based information on pregnancy outcome following gestational exposure to this drug," she added.

The study authors said the rates of malformation in the DM and control groups were comparable, with no specific pattern of defects emerging in either group. They found no cases of neural tube defect in the study group infants, as was suggested by the chick embryo research.

(Neural tube defects are any of a group of congenital problems involving the brain and spinal cord, resulting from failure of the neural tube to close normally during embryonic development.)

The authors point out that no information was available on the placental transfer of DM to human infants. However, they note that the molecular weight of DM is low enough so that "transfer to the fetus probably occurs." The paper reports that the only published studies in humans involve 50,282 mother-child pairs, with 300 of the mothers using DM during their first trimester. In those studies, which did not specifically target DM, there was no increase in major malformations above the baseline rate of 1% to 3% among the 300 women and no increase in the relative risk for any specific malformation.

The researchers in this study defined major malformation as the presence of any birth defect that had an adverse effect on either the function of or social acceptability of the child.

They point out that the women who were the subjects in this study were either unaware they were pregnant or were suffering from such a bad cough they took the drug regardless of any supposed consequences. They said the research sample size had an 80% power to detect a 3.5-fold increase in the rate of malformations within the study group.

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March 2001 Press Releases

## Many Elderly Asthma Patients Not Receiving Medications Proven to be Effective

"Underuse of Inhaled Steroid Therapy in Elderly Patients With Asthma"

Don D. Sin, MD, MPH; and Jack V. Tu, MD, PhD

CHEST 2001; 119:720-725

[Abstract](#) [Full text](#)

Many elderly asthma patients are not receiving medications that have been proven to decrease the rate of hospitalizations and asthma-related deaths, according to a new Canadian study.

Don D. Sin, M.D., of the University of Alberta, and Jack V. Tu, M.D., of the University of Toronto, said: "We found that 40% of Ontario residents over 65 years old who experienced a recent acute exacerbation of their asthma did not receive inhaled steroid therapy at or near discharge from the hospital, despite the proven efficacy of these medications in reducing asthma-related morbidity and mortality."

The study appeared in the March issue of CHEST, the peer-reviewed journal of the American College of Chest Physicians.

The investigators noted that despite the improved medical technologies for the management of asthma over the past decade, asthma-related mortality in the elderly population continues to rise. "Between 1984 and 1994, for instance, there was a 24% increase in asthma-related mortality for those over 65 years old in contrast [to] other age groups [which] experienced little or no increase in mortality during the same period of time," they said.

All the hospitalized persons over 65 in Ontario, Canada, who survived an acute exacerbation of asthma between April 1992 and March 1997, 6,254 in all, were studied to determine the rate of use of inhaled steroids in this group of patients. The study also identified certain subgroups among the patients who may be particularly undertreated. Sixty-eight percent of the patients (4,261) were women and many had comorbidities (other diseases). For example, 528 patients (8%) had congestive heart failure.

Addressing the finding that only 40% of those in the study received inhaled steroids, the authors said: "These findings are disturbing because this study was conducted among patients who were recently hospitalized and were, therefore, at a high risk for future adverse events related to their asthma."

The investigators found that the lowest utilization of inhaled steroid therapy was among those with advanced age and multiple comorbidities. Patients who had three or more comorbid conditions were almost three and a half times more likely not to received inhaled steroid therapy.

As to age, those under 70 were more likely to receive inhaled steroids compared to their older counterparts. Drs. Sin and Tu observed that "although neither the American nor Canadian consensus guideline statements has indicated that the use of inhaled steroid therapy should be modified by age or comorbidities, our findings are consistent with previous reports that asthma is underdiagnosed and undertreated in the elderly population."

According to the researchers, previous studies have shown the use of inhaled steroid therapy decreases the rate of hospitalization by approximately 50% and asthma mortality by up to 90%.

They note, however, that many studies excluded elderly patients "which may make clinicians more hesitant in prescribing these medications for older patients." Another finding of the study showed that patients treated by specialists such as pulmonologists and allergists were 50% more likely to have received inhaled steroid therapy as compared to those treated by family physicians and general practitioners. "This finding," the authors said, "is consistent with a previous report that showed that patients receiving their asthma care from specialists were considerably more likely to report using both inhaled steroid therapy and having higher health-related quality of life."

The researchers said their findings show there is a window of opportunity to increase the use of inhaled steroids among elderly asthma patients who have been recently hospitalized for their disease. "Underutilization of these drugs," they said, " may be occurring particularly in patients with advanced age and those with multiple comorbid conditions, which may be contributing to the disproportionate rise in morbidity and mortality among these groups."

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March 2001 Press Releases

## Short-Course, Two-Drug Treatment for Latent Tuberculosis in High-Risk Jail Inmates Leads to Higher Completion Rates

"Acceptability of Short-Course Rifampin and Pyrazinamide Treatment of Latent Tuberculosis Infection Among Jail Inmates"

Naomi N. Bock, MD; Tara Rogers, BS; Jane R. Tapia, RN; et al  
CHEST 2001; 119:833-837

[Abstract](#) [Full text](#)

Accompanying Editorial

"Tuberculosis in Correctional Facilities: A Nightmare Without End in Sight"

Rafael Laniado-Laborin, MD, MPH  
CHEST 2001; 119:681-683

[Full text](#)

A new two-month, two-drug treatment for latent tuberculosis infection (LTBI) led to a marked increase in completion rates for the regimen in a high-risk jail population who had a positive tuberculin skin test, according to an article in the March CHEST. Prison tuberculosis (TB) rates are 6 to 10 times higher than among the general public, the study notes.

For prisoners with LTBI, the current, most common treatment regimen usually lasts one year. However, since many of those who are incarcerated leave jail before completing their treatment, they return to the community with untreated LTBI. Also, a 25-site national survey of TB infection in correctional institutions, mentioned in this new study, found that 24.6 % of inmates being discharged annually may have had TB infection.

In an allied editorial also in the same issue of CHEST, another physician points out that the TB problem in jails is so serious it has created an urgent need for improvement in control efforts directed at the disease in correctional facilities. Calling the short-course, two-drug treatment used in the present study "innovative," he presses for international standards for accreditation of health-care facilities in prisons, adequate funding to allow these standards to be met, and supervisory bodies independent of jail authorities to ensure compliance with established standards.

In her article in the monthly peer-reviewed journal of the American College of Chest Physicians, Naomi N. Bock, M.D., of the Division of TB Elimination, Centers for Disease Control and Prevention, Atlanta, Georgia, along with five associates, provided treatment for 168 prison inmates who had a positive tuberculin skin test, but whose chest radiograph for TB was normal. For two months, the prisoners received daily doses of the drugs rifampin and pyrazinamide (2RZ) while in the Fulton County, Georgia, jail. Eighty-one inmates (48%) completed 60 doses of 2RZ treatment while incarcerated. Seventy-four inmates (44%) were released from the jail before completing the two-month

plan, and none are known to have finished the regimen outside. Treatment was stopped in 13 inmates for various side-effects.

During an earlier 12-month period at the jail when physicians utilized another drug for LTBI, only 21 of 517 inmates (4.1%) completed more than six months of the year-long drug treatment with isoniazid.

According to the article, a previous study found that a two-month short-course of 2RZ was equivalent in efficacy to 12 months of daily isoniazid treatment among tuberculin skin-test-positive persons, including HIV-positive patients; it has also been recommended as an alternative for HIV-negative patients.

The study authors believe that jails pose a particularly challenging location for the treatment of latent TB. Most often they house individuals who are awaiting either arraignment, court action, or those sentenced to terms of less than one year. In a prior study, Dr. Bock had 143 inmates at the Atlanta PreTrial Detention Center begin one-year isoniazid preventive therapy. None of the prisoners completed the treatment while incarcerated at the facility, although 11 inmates (8%) finished at a local TB clinic after release into the community.

In his editorial in CHEST about the problem, Rafael Laniado-Laborin, MD, MPH, of San Ysidro, California, pointed out that effective TB control in correctional facilities is necessary for the reduction of TB rates throughout society. He said increases in both case rates and number of drug resistance bacteria have created an urgent need to improve TB control efforts in correctional facilities worldwide.

"The population that comes under the supervision of the criminal system in the United States is at a relatively high risk for TB," he said. "The main reason for the high risk for M tuberculosis infection and active TB disease in prisons is the disproportionate number of inmates who have factors for exposure to the organism, or, if infected, for development of active disease. These risk factors include prison overcrowding, inadequate ventilation, malnourishment, infection with HIV, infection with hepatitis B and C viruses, continued substance abuse, a high proportion of inmates from racial and ethnic minorities [who] frequently [are] recent immigrants from high incidence countries, and being a member of a lower socio-economic population that has inadequate access to health care."

He noted that jails also provided a magnificent opportunity to screen and treat latent TB infection, although the drug most often prescribed was not frequently offered. Or, if treatment was begun with isoniazid, it was not continued after release from the facility.

Dr. Laniado-Laborin pointed out that prisoners are entitled to the same level of health care afforded the general population. That principle is an accepted fact among enlightened societies and prison systems.  
"Contracting TB in prison is most certainly not part of a prisoner's sentence," he said.

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