



# Clinical Digest

## NEUROLOGY

### The Course of MS After Optic Neuritis

Most patients who develop clinically definite multiple sclerosis (CDMS) after an initial episode of optic neuritis have a relatively benign course for at least 10 years, say researchers from the Optic Neuritis Study Group. And that's the case regardless of whether or not brain lesions are visible through magnetic resonance imaging (MRI).

The investigators followed up on 127 patients at 14 clinical centers who had participated in the Optic Neuritis Treatment Trial and subsequently had been diagnosed with CDMS. Most were only mildly disabled, with 65% having an Expanded Disability Status Scale score lower than 3. The disease course was considered stable in about half of the patients and active or progressive in the other half.

Although the researchers say brain MRI is extremely valuable for assessing the risk of CDMS following optic neuritis, they found that baseline

MRI results didn't help them predict which patients were likely to develop moderate or severe disability after 10 years.

Source: *Arch Neurol*. 2004; 61:1386-1389.

## PUBLIC HEALTH

### Effects of Air Pollution on Developing Lungs

Exposure to air pollution between the ages of 10 and 18 has serious, irreversible, adverse effects on adult lung function, according to a study by researchers from the University of Southern California, Los Angeles; Sonoma Technology, Petaluma, CA; Air Resources Board, Sacramento, CA; and the University of British Columbia, Vancouver.

Over a period of eight years, the investigators measured lung function in 1,759 children from 12 southern California communities that represented a wide range of ambient exposures to ozone, acid vapor, nitrogen dioxide, and particulate matter. Exposure to pollutants was

associated with clinically and statistically significant deficits in the forced expiratory volume in one second (FEV<sub>1</sub>) at age 18. For example, the estimated proportion of 18-year-olds with a low FEV<sub>1</sub> (defined as less than 80% of expected) was nearly five times as great at the highest level of exposure to particulate matter as at the lowest level. The strongest associations, however, were observed between FEV<sub>1</sub> and nitrogen dioxide, acid vapor, and elemental carbon—all products of primary fuel combustion. The effects were similar in boys and girls and remained significant among children with no history of asthma and those with no history of smoking, suggesting that most children are susceptible to the chronic respiratory effects of breathing polluted air. The magnitude of the observed effects was similar to that reported for exposure to maternal smoking. The researchers stress that reduced lung function is a strong risk factor for respiratory complications later in life.

Source: *N Engl J Med*. 2004; 351:1057-1067.

## INFECTION CONTROL

### Early Identification of SARS

A simple clinical prediction rule may help practitioners identify patients who have severe acute respiratory syndrome (SARS) upon presenting to an emergency department. This was the major finding of an investigation funded by the government of Hong Kong and the University of Hong Kong SARS Research Fund. The study focused on 2,649 patients seen at two Hong Kong triage clinics during the 2003 SARS epidemic.

The following characteristics increased the likelihood of SARS infection: previous contact with an infected patient, fever, myalgia, malaise, abnormal chest radiograph, and low lymphocyte and platelet counts. Less likely to have SARS were patients who produced sputum and had abdominal pain, sore throat, rhinorrhea, and high neutrophil counts as well as those who were older than 64 or younger than 18.

After total risk scores were computed, patients

whose scores were above the threshold cutoff (indicating a relatively high risk for a final diagnosis of SARS) were assigned to one of four different risk classes. The scores provided a simple method by which to stratify not only risk, say the researchers, but also such resources as initial treatment regimen. The incidence of SARS was 4.4% for those assigned to the low risk group, compared with an incidence in the high risk group of 21% for quartile 1, 39.5% for quartile 2, 61.2% for quartile 3, and 79.7% for quartile 4.

The prediction rule achieved a sensitivity of 0.9 and a specificity of 0.62, the researchers say. They caution, however, that it may not apply to isolated interepidemic cases and suggest that the generalizability of their findings be confirmed in other SARS-affected countries and prospectively validated if SARS returns.

Source: *Ann Intern Med.* 2004; 141:333-342.

## EMERGENCY MEDICINE

### Putting a Stop to Necrotizing Fasciitis

Necrotizing fasciitis spreads so rapidly that early intervention remains the best hope of arresting the downward spiral. And now researchers from

Shin-Kong Wu Ho-Su Memorial Hospital, Taipei, Taiwan say they have a reliable and convenient tool for quick and relatively easy diagnosis.

They prospectively studied 234 patients who had soft tissue infection involving the lower limbs—19 of whom were determined to have necrotizing fasciitis and 215 of whom had cellulitis. Using near-infrared spectroscopy to measure tissue oxygen saturation, they found significantly lower levels in limbs affected by necrotizing fasciitis than cellulitis (52% compared with 84%, respectively). After fasciotomy, the levels returned to 82% in the limbs that had been affected by fasciitis. The sensitivity of the measurements was 100%, with 96% specificity. In addition, the researchers point out, tissue oxygen saturation measurement allows for continuous monitoring; requires little training; uses small, portable devices; and is noninvasive, tolerable, and technique independent.

Source: *Ann Emerg Med.* 2004;44:222-228.

## ONCOLOGY

### Avoiding VTE in Cancer

The association between venous thromboembolism (VTE) and cancer is well known. Patients with cancer have a higher risk of

developing VTE than patients without cancer and, in the six months following an initial thromboembolic event, patients with VTE have a higher risk of being diagnosed with cancer than those without VTE. Furthermore, having the two conditions together substantially raises the risk of death: It's twice as high in patients with cancer and VTE compared with patients who have cancer but no VTE.

For patients with cancer who have contraindications to anticoagulation but are vulnerable to pulmonary emboli, inferior vena cava (IVC) filters have been a controversial option. Researchers from The University of Texas M.D. Anderson Cancer Center, Houston conducted a study to find out if the controversy is warranted. They contrasted their findings with those of an earlier study that challenged the clinical benefits of IVC filters in advanced cancer.

IVC filters were placed in 308 patients with VTE and cancer. Of those, 267 had solid tumors and 41 had liquid tumors (lymphoma or hematopoietic malignancies).

Overall, the median survival time was 145 days for patients with solid tumors and 207 days for patients with liquid tumors. Based on clinical suspicion, pulmonary embolism was considered responsible for four deaths and a potential

contributing factor in another 10.

The researchers concluded that IVC filters are safe and highly effective in preventing PE-related deaths in patients with VTE and cancer, though survival is lowest in patients with a history of deep vein thrombosis and bleeding and those with metastatic or disseminated cancer.

Source: *Cancer.* 2004;101: 1902-1907.

## CARDIOLOGY

### When Acute Aortic Dissection is Painless

Acute aortic dissection (AAD) is overlooked in one third of all cases—especially when it's not accompanied by the typical severe chest or back pain. That's why investigators from the Mayo Clinics and other medical centers endeavored to identify atypical characteristics of AAD, using the International Registry of Acute Aortic Dissection.

Of the 977 patients in the database, 63 (6%) had painless AAD (group 1) and 914 (94%) had painful AAD (group 2). Compared to the patients in group 2, more group 1 patients had such presenting signs as syncope (34% versus 12%), stroke (11% versus 5%), or congestive heart failure (20% versus 4%) and a his-

tory of diabetes mellitus (10% versus 4%), aortic aneurysm (30% versus 13%), or cardiovascular surgery (48% versus 20%). They were also more likely (75% versus 61%) to have type A dissection (ascending aorta), which was probably related to the higher proportion of syncope or congestive heart failure.

It's not clear why some patients with AAD don't experience the characteristic pain. One possibility that the researchers suggest is that slow or gradual dissection with less wall stretching may cause less pain. Another possibility they mention is that aortic wall damage due to disease, cannulation, or clamping may dull the pain of dissec-

tion. Stroke and syncope also could impair pain perception.

Left untreated, AAD has a mortality rate as high as 1% per hour during the first 48 hours after symptom onset. In their study, more patients in group 1 than in group 2 died in the hospital (33% versus 23%). The median interval from symptom onset to diagnosis was 29 hours for group 1 patients versus 10 hours for group 2 patients. The researchers suggest that the diagnostic delay itself may be responsible in part for the higher mortality observed in painless compared to typical AAD. ●

Source: *Mayo Clin Proc.* 2004; 79:1252-1257.

## NMSIS PROMISING NEW INVESTIGATOR AWARDS 2004-2005

The Neuroleptic Malignant Syndrome Information Service (NMSIS) announces a competition to recognize promising new investigators based on a scholarly paper addressing "new insights on psychotropic drug safety and side effects." Two prizes of \$2,500 and \$1,500 will be awarded toward travel costs to attend the American Psychiatric Association Meeting in May 2005. Must be submitted by February 1, 2005. Contact Diane Van Slyke at (607) 674-7901 or [diane@mhaus.org](mailto:diane@mhaus.org). Winners will be announced by March 1, 2005.

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