



AMERICAN COLLEGE OF SURGEONS

SURGERY NEWS

Methylene Blue Matches Lymphazurin for SLN Mapping

BY ROBERT FINN
Elsevier Global Medical News

SAN FRANCISCO — Methylene blue 1% is as good as Lymphazurin 1% for mapping sentinel lymph nodes in breast cancer, according to a prospective study of 320 women.

Methylene blue caused significantly fewer severe adverse events in the study and also was much less expensive than Lymphazurin, investigators wrote in a poster at the annual clinical congress of the American College of Surgeons. The college's abstract program review committee designated the study as a "poster of exceptional merit."

Methylene blue and Lymphazurin (isosulfan blue) are both vital blue dyes. "Lymphazurin 1% has long been held as the standard for sentinel lymph node

(SLN) mapping in breast cancer," wrote the investigators, led by Dr. Sakamal Saha, an ACS Fellow with the McLaren Regional Medical Center, Flint, Mich. In recent years, Lymphazurin has occasionally been in short supply, although that situation appears to have been resolved. Side effects range from urticaria, blue hives, and pseudohypoxia to hypotension and anaphylaxis.

The 320 women in the study had an average age of 61 years. In all, 198 had their lymph nodes mapped with Lymphazurin and 122 had them mapped with methylene blue. All women were in the early stages of breast cancer, had clinically node-negative axillary examinations, and were undergoing SLN mapping during primary surgery for breast cancer during the years 2005-2008. Women who had T3 or T4 lesions, clin-

ically palpable axillary lymph nodes, and had undergone neoadjuvant chemotherapy were excluded from the study.

During the procedure, surgeons performed intraparenchymal, subareolar, and intradermal injections of 1-4 mL of Lymphazurin or methylene blue, and sent sentinel nodes to be examined by multilevel microsections. Nonsentinel lymph nodes were examined by standard methods.

Most of the patients had stage T1 disease. The procedure was 100% successful in both groups, and in both groups surgeons found an average of 2.5 sentinel lymph nodes per patient. There was no significant difference between the groups in nodal positivity (26% for Lymphazurin and 23% for methylene blue).

There were also no significant differences between the groups in accuracy,

skip metastases, axillary recurrence, anaphylaxis, or occurrence of blue hives.

None of the patients in the methylene blue group experienced a drop in pulse oximetry of more than 5%, compared with 18% of the patients in the Lymphazurin group, a significant difference (P less than .001). On the other hand, none of the patients in the Lymphazurin group experienced skin necrosis, compared with 5.6% of the methylene blue group (P = .004). The investigators noted that skin necrosis can be avoided by excising the blue-stained skin at the site of the injection during lumpectomy.

The average cost per patient was \$210 in the Lymphazurin group, compared with \$7 in the methylene blue group (P less than .001).

The investigators disclosed no conflicts of interest related to their study. ■

Data Demonstrate Viability of Cutting Balloon Angioplasty

BY NANCY WALSH
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NEW YORK — Cutting balloon angioplasty produces patency rates similar to those obtained with open surgery and superior to those for percutaneous transluminal balloon angioplasty, according to a comparison of 12 years' worth of data on treatment for infrainguinal vein graft stenosis.

Numerous attempts over the years to replace traditional open surgery with conventional balloon angioplasty for the prevention of vein graft failure have produced significantly inferior results, said Dr. Peter A. Schneider of the division of vascular therapy, Hawaii Permanente Medical Group, Honolulu.

"Conventional balloon angioplasty has the disadvantage of the application of an even amount of pressure in all directions, which usually leads to uncontrolled lesion disruption," he said at the Veith symposium on vascular medicine sponsored by the Cleveland Clinic.

Cutting balloon angioplasty, in contrast, cuts the lesion rather than tearing it erratically. Originally developed to treat in-stent coronary restenosis, it is now being tried for multiple noncoronary occlusive challenges.

To compare approaches, Dr. Schneider and his colleagues looked at their results over a 12-year period (1995-2007). During the years 1995 through 1998, graft repairs

were preferentially treated with open surgery, and percutaneous balloon angioplasty was reserved for high-risk patients.

Between 1999 and 2002, the decision to perform open surgery or angioplasty was made according to the type of lesion, but since 2002, the first-line approach has been cutting balloon angioplasty.

During the 12-year period, 161 lesions (in 101 patients) were treated: 42 with open surgery, 57 with conventional angioplasty, and 62 with the cutting balloon. The initial indication for bypass had been limb salvage in 73% and claudication in 27%.

Patency rates at 48 months were 74%, 62%, and 34% for open surgery, cutting balloon angioplasty, and percutaneous transluminal angioplasty, respectively, Dr. Schneider reported.

Percutaneous angioplasty was associated with an increased risk of treatment failure compared with both open surgery (hazard ratio, 3.9) and cutting balloon angioplasty (HR, 3.1), but there was no significant difference between open surgery and cutting balloon angioplasty (HR, 1.3).

During 24 months of follow-up there were no deaths, and the complication rates were 7% for open surgery, 5% for cutting balloon angioplasty, and 5% for standard angioplasty. Pseudoaneurysms developed in two of the cutting balloon patients (*J. Vasc. Surg.* 2008;47:960-6).

Dr. Schneider reported no conflicts of interest. ■

Infectious Complications of Trauma Increase With Age

NEW ORLEANS — The risks of pneumonia and other serious infectious and septic complications of traumatic injury climb steadily in age-dependent fashion.

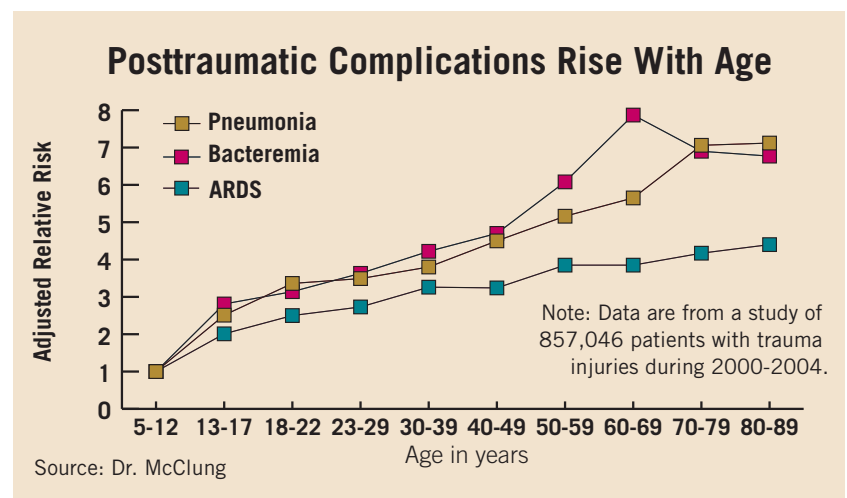
This finding from an analysis of the world's largest trauma registry suggests that the immune response to trauma varies with age and that the neuroendocrine axis is involved in this immunoactivation, Dr. Christian D. McClung said at the annual scientific sessions of the American Heart Association. He reported on 857,046 patients aged 5-89 years included in the American College of Surgeons National Trauma Data Bank for 2000-2004. The patients (mean age 40 years) were hospitalized at more than 600 participating trauma centers, with a

median 3-day length of stay. Two-thirds were male. The mortality rate was 4.4%.

Pneumonia was a complication of trauma in 1.6% of cases, acute respiratory distress syndrome (ARDS) in 0.5%, and bacteremia in 0.13%, said Dr. McClung, an emergency physician at Los Angeles County-USC Medical Center, Los Angeles.

The risks of pneumonia, bacteremia, and ARDS rose with each decade of age in a multivariate logistic regression analysis adjusted for potential confounders including age, sex, injury severity score, trauma mechanism, and ventilator days. The study's 56,680 children aged 5-12 years served as the comparison group. (See box.)

—Bruce Jancin





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Hospitals Fall Short on Adverse Event Reporting

BY MARY ELLEN SCHNEIDER
Elsevier Global Medical News

Nearly all U.S. hospitals have a centralized system for reporting adverse events, but only about 20% are distributing and discussing the findings widely across their organization, according to national survey data.

The survey, conducted by the RAND Corporation and The Joint Commission from September 2005 to January 2006, also found that hospitals fell short in terms of how they collected adverse event reports. Only about a third (32%) of hospitals surveyed had established an environment that fostered reporting through confidentiality, and only 13% had broad staff involvement in reporting. In most hospitals, attending physicians submitted only a few reports.

The survey included responses from 1,652 U.S. hospitals, about 63% of which were general medical-surgical hospitals. The survey and the analysis were funded by the Agency for Healthcare Research and Quality (AHRQ) with the goal of establishing baseline data on internal adverse event reporting in U.S. hospitals (*Qual. Saf. Health Care* 2008;17:416-23).

The investigators, who reported no conflicts of in-

terest, found strong agreement among hospitals about what elements should be included in adverse event reporting systems. For example, nearly all hospitals included information on the place and time of occurrences, patient demographics, personnel involved, required follow-up treatment, and actions taken.

However, hospitals varied widely in terms of how information was used and who reported it. Only about 20% of hospitals surveyed reported that they distributed summary reports of adverse events broadly to nurses, physicians, and hospital administrators, and that the reports were discussed by the hospital board and medical executive committee. The researchers found that hospitals with patient safety programs in place were more likely to discuss adverse events. In contrast, critical access hospitals, teaching hospitals, and hospitals with computer-only reporting systems were less likely to discuss adverse event findings within hospital board and medical executive committees.

The results aren't surprising, said Dr. Peter Lindenauer, director of the Center for Quality and Safety Research at Baystate Medical Center in Springfield, Mass.; he was not involved in the analysis. It will take time for adverse event reporting to become part of the culture, just as new medical therapies take 10-15 years to be

adopted into routine clinical practice, he said.

"Implementing a safety reporting system is a major socio-technical endeavor that represents large-scale organizational change," said Dr. Lindenauer, who is also an associate professor of medicine at Tufts University in Boston. "Engaging physicians is difficult because they already feel stressed for time, and because they may not sense that there are direct benefits to them from reporting."

A December 2008 report from the Department of Health and Human Services Office of Inspector General found similar trends. Hospital staff may fail to report adverse events because they don't believe action will be taken, they don't have the time to complete incident reports and other documentation, they assume another staff member will report the incident, or they fear punitive action, the report said.

To make an adverse event reporting system successful, hospitals must establish a rationale for change, ensure readiness, and communicate a clear vision as to why the event reporting system is an improvement over the status quo, Dr. Lindenauer said.

"Safety reporting represents one of the best ways for organizations to discover opportunities to enhance the safety and quality of care," said he added. ■

Anemia Drugs Tied to Deaths in Cancer Patients

BY JANE SALODOF MACNEIL
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SAN FRANCISCO — Cancer patients on erythropoiesis-stimulating agents are 17% more likely to die of any cause while in clinical trials and 6% less likely to be alive at the longest available follow-up, researchers reported at the annual meeting of the American Society of Hematology.

In a meta-analysis of clinical studies of these anemia drugs, Dr. Julia Bohlius and her collaborators collected individual patient data from 53 randomized, controlled trials in which 13,933 patients were analyzed. This sample included 10,441 patients in chemotherapy trials. The impact of erythropoiesis-stimulating agents (ESAs) was less dramatic in chemotherapy patients, but they, too, had 10% higher mortality while in "the active study phase," and their survival rate was 4% worse at the longest available follow-up.

"ESAs increased on-study mortality and worsened overall survival in cancer patients. For patients undergoing chemotherapy the increase was less pronounced, but could not be excluded," she said at a press briefing.



The use of ESAs increased on-study mortality and worsened overall survival in cancer patients.
DR. BOHLIUS

Although the mortality and survival disparities were not statistically significant for the subgroup of chemotherapy trial patients, mortality and overall survival were significantly worse ($P = .002$ and $P = .05$, respectively) for all cancer patients in the meta-analysis reported by Dr. Bohlius of the University of Bern (Switzerland).

Adding what she acknowledged an "uncertainty" to the chemotherapy findings, the chemotherapy patients were not statistically different from 737 patients on radiochemotherapy, 799 on radiotherapy, 266 receiving other treatments, and 1,690 who were not treated.

Possible next steps included evaluation of the impact that posttreatment hemoglobin levels have on mortality, how ESAs affect thromboembolic events and tumor progression, and ESAs' impact on quality of life and transfusion needs, she suggested.

"What we don't really know is why patients die," said her coauthor, Dr. Andreas Engert. He cited two theories—ESAs promote tumor progression, and high hemoglobin levels as a result of treatment increase the chance of dying of thromboembolic events.

"I think it is underreporting of throm-

boembolic events. There [are] no strong data that tumor progression is the cause," said Dr. Engert, chairman and professor of internal medicine, hematology, and oncology at the University of Cologne (Germany). Because these trials enroll cancer patients, many with advanced disease, autopsies that might uncover other causes of death are rarely, if ever, performed, he noted.

The results confirm earlier data that led ASH and the American Society for Clinical Oncology to revise their guidelines for ESA use, according to Dr. Samuel M. Silver, head of ASH's reimbursement committee. In 2009, "a new guideline panel will be put together by ASH and ASCO, and a discussion of [these] data is going to be incredibly important," said Dr. Silver, assistant dean for research and professor of internal medicine at the University of Michigan, Ann Arbor.

Meanwhile, use of ESAs has decreased and blood transfusions are up substantially in the wake of tightened Food and Drug Administration and Medicare directives on ESA, which are now indicated in cancer for patients with chemotherapy-induced anemia only. The impact ranges from surgeries being post-

poned because of reduced blood supply to limitations on the availability of outpatient beds for transfusions to exacerbated comorbidities in older patients, he said.

"It is just not so simple. The bottom line is, I think, there are interesting interactions, and we are not at all smart enough to understand them," he said.

A steering committee guided the meta-analysis, which was conducted independently in two academic departments. Representatives of the three companies manufacturing ESAs—Amgen Inc., Johnson & Johnson, and Hoffmann-La Roche Inc.—served on the advisory board and contributed patient data, Dr. Bohlius said, but "had no involvement in the study design, analysis, and interpretation of data and in the writing of the report."

All funding came from two industry-independent sources, she added: the German Ministry of Education and Research and OncoSuisse. Median follow-up was 4 months for the on-study mortality data, and 6 months for overall survival rates in the various studies, she said.

Dr. Bohlius, Dr. Engert, and Dr. Silver said they had no conflicts of interest. ■



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