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'Normal' values may signal life-threatening trauma for elderly

ED nurses are at high risk of overlooking dangerous signs

If you go by typical "normal" lab values or vital sign ranges when caring for elder trauma patients, you may miss a life-threatening injury, says a new study.¹ Researchers looked at the base deficit of 74 ED patients ages 65 and older and found that this measure was a good predictor of life-threatening injury. This finding underscores that early identification of serious injuries is especially important in elders, adds **Shahriar Zehtabchi**, MD, the study's lead author and associate director of research in the Department of Emergency Medicine at Kings County Hospital Center in Brooklyn, NY.

"The most important take-home message from our study is that elderly patients are very different from other age groups and have to be treated differently," says Zehtabchi. So-called "normal" lab values or vital sign ranges might be accurate for younger patients, but they may be misleading for older patients, he explains.

Determine the elder trauma patient's baseline values for blood pressure, lactate, and base deficit levels, advises Zehtabchi. He gives the example of a previously hypertensive elderly patient with an average blood pressure of 180/95, who comes to the ED with a blood pressure of 130/80 — an indication of a significant risk of internal bleeding for this particular patient, though it would appear as "normal" if you didn't know the baseline.

EXECUTIVE SUMMARY

Elder trauma patients are different from other age groups in many ways, and "normal" lab values and vital sign ranges might be misleading, says a new study. To avoid missing a life-threatening injury, determine baseline values for blood pressure, lactate, and base deficit levels.

- Patients may not develop tachycardia because they are on beta- or calcium channel blockers.
- Hypotensive geriatric patients are at risk for cardiac complications more so than younger patients.
- Remove patients from backboards as soon as possible.

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“This is a significant drop in blood pressure,” says Zehtabchi. “However, one can only detect this drop if he or she knows the patient’s baseline blood pressure, or at least pay attention to the history of hypertension.”

The same is true for a base deficit, which could go from +4 at baseline to -2 after a traumatic injury for an elder patient, he says. “Ignoring the patient’s baseline may mislead the clinician to interpret the base deficit as normal, since -2 is within the normal range.”

Don't miss subtle signs

“With this group of patients, we are often ‘missing the boat,’” says **Sheri Cook**, RN, CEN, emergency services educator at Tallahassee (FL) Memorial Hospital’s Bixler Emergency Center.

“I realize that the comorbidities in this group are large,” says Cook. “But I have done many case studies

on elder trauma patients. And even with their many health issues, they can have successful outcomes with proper care, frequent evaluations, and follow-up.”

A too-brief physical assessment can cause nurses to miss subtle signs such as decreased lung sounds, heart murmurs, and absent bowel sounds, says **Theresa A. Cesiro**, RN, MSN, director of emergency services at St. Bernadine (CA) Medical Center. “Another mistake is not thinking the mechanism of injury through, to alert the nurse to address specific systems or areas of thorough examination,” she says.

Your medical and medication history can change your interpretation of what is seen during assessment, says **Joan Somes**, PhD, MSN, RN, CEN, FAEN, ED educator at St. Joseph’s Hospital in St. Paul, MN. “Since the older adult typically has less cardiovascular and pulmonary reserve, it is important to act with a critical eye to what is happening with this patient,” she says. “It is often harder to recognize the older adult in trouble.”

For example, the patients may have low blood pressure because they are on antihypertensive medications, or they may be hypovolemic from shock, says Somes. “They may not develop the classic tachycardia as part of a response to shock because they are on beta- or calcium channel blockers, keeping the heart rate slow,” says Somes. “Geriatric patients are also less able to vasoconstrict due to atherosclerosis, so they do not ‘do’ the compensation mode very well.”

Additionally, geriatric patients have a tendency to be dehydrated, which may be due to lack of fluid intake, diuretics, or lack of subcutaneous fatty tissue, says Somes.

The hypotensive state also will stress the heart more quickly in the geriatric patient, leading to cardiac complications not necessarily seen in the younger patient, adds Somes. “Acute myocardial ischemia, or infarction, is not an uncommon complication of the geriatric patient who is volume depleted and not perfusing the coronary vessels adequately,” she says.

The geriatric patient’s pulmonary system is typically stressed as well, says Somes. “Pain due to injury may lead to inadequate respiratory effort, or excess fluids poured in by well-intentioned emergency workers,” she says. “Chronic pulmonary pathology, seen in most older adults to some extent, leads to poor oxygenation of the lungs and ultimately cellular hypoxia.”

Confusion can be new, old, or subtle, and may be very difficult to identify, says Somes. Due to the normal atrophy that takes place in the brain, blood can collect and not even produce symptoms for several weeks to a month, she explains. “These symptoms may be misidentified as a stroke instead of head trauma,” says Somes. “The classic pupillary signs may be due to new pathology in the brain, related to

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old surgeries, or other changes related to aging.”

For this age group, an Injury Severity Score is not predictive of outcome, so be cautious and overestimate possible injuries, advises Cook. “Frequent reassessment and close monitoring are essential,” she says. Keep in mind that normal vital signs aren’t necessarily normal for this age group, adds Cook. “Many in this age group are hypertensive, so blood pressure within normal limits could mean a decrease in circulating volume,” she says. “Plus, with the extensive use of beta- and calcium channel blockers and the blunted response to catecholamines, many times geriatrics cannot mount a tachycardia even if they need to.”

Hemodynamic monitoring sooner instead of later saves lives, emphasizes Cook. “The elderly patient will have a much worse outcome from occult shock than their younger counterparts,” says Cook. “Transfuse sooner instead of later, to prevent a secondary ischemic event including stroke or myocardial infarction.”

To improve care of elder trauma patients, do the following:

• **Don’t miss signs that the patient is not perfusing oxygenated blood to all parts of the body.**

This may be a ventilation problem, or it may be a perfusion problem, or it may be both, says Somes.

“Overhydrating and overoxygenating the older adult may lead to problems,” she says. “Both will lead to lung issues as we fill up the lungs with fluid or overwhelm the respiratory drive with too much oxygen.”

• **Don’t assume that changes in level of consciousness or diminished heart and lung sounds are normal.**

“A baseline must be established before that assumption can be made,” says Cesiro. If you wrongly assume that a change in level of consciousness is sudden, your patient could have a bleed or seizure that is missed, or the patient could be diabetic and hypoglycemic, says Cesiro.

“If you assume that diminished heart and lung sounds are due to trauma when it’s actually not, the patient could have a missed cardiac contusion, pericarditis, aortic tear, or myocardial infarction,” says Cesiro.

• **Remove patients from backboards quickly.**

“At our facility, we triage our geriatric population as a Number 1, so that we can remove them from the backboard as soon as possible,” says Somes. “We know that skin breakdown starts to occur within as little as an hour and that backboards are notorious for this.”

Reference

1. Zehtabchi S, Baron BJ. Utility of base deficit for identifying major injury in elder trauma patients. *Acad Emerg Med* 2007; 14:829-831. ■

Stop ‘smart pump’ medication errors

When used properly, errors ‘almost nonexistent’

When a 19-year-old obese woman came to an ED with dyspnea after a recent cesarean delivery of a baby, pulmonary embolism was presumed and an intravenous heparin bolus of 5,000 units was prescribed, followed by a heparin infusion at 1,000 units/hour.

EXECUTIVE SUMMARY

“Smart” infusion pumps can prevent harmful medication errors, but errors can result if dose-checking technology is bypassed by ED nurses. To reduce risks:

- Perform random audits to check for override activity.
- Have “super users” act as an education resource for other nurses.
- Refresh memory of nurses after vacations and leave.

SOURCES/RESOURCE

For more information about use of smart pumps in the ED, contact:

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Educational tools on effective approaches to implementation of smart pump technology are available from the Institute for Safe Medication Practices (ISMP). To access the tools, go to ISMP's web site (www.ismp.org). Click on "Professional Development," "Continuing Education," and "Effective Approaches to Standardization and Implementation of Smart Pump Technology."

After administering the bolus dose, the ED nurse started the heparin infusion but misprogrammed the pump to run at 1,000 mL/hour, instead of 1,000 units/hour (20 mL/hour). As a result, the woman received more than 17,000 units in less than an hour after her arrival in the ED before the error was discovered.¹

This mistake should never have happened, since a "smart pump" with dosing limits for heparin had been used — but the ED nurse bypassed the dose-checking technology and had used the pump in its standard mode. Fortunately, the patient did not experience adverse bleeding, as her aPTT values were as prolonged as 240 seconds when initially measured and 148 seconds two hours later.

'Smart' pumps not foolproof

"Smart" infusion pumps are being increasingly used in EDs to prevent harmful medication errors, but as the above case shows, they are not foolproof.

At Cedars-Sinai Medical Center in Los Angeles, the ED manager and pharmacist conduct random audits to check for override activity of the Alaris smart pumps (Cardinal Health; Dublin, OH), says **Flora Haus**, MSN, CEN, CNA, service line manager of the ED. "Proudly, this is *not* occurring," she says. "Between the pharmacists

and myself, whenever we walk around the department we keep our eyes open and scan the pumps. We have not found a work-around in over six months."

That case involved a newer nurse who needed more education on the critical need for the use of guardrails and reminder of the requirement for compliance, and overriding hasn't occurred since, says Haus.

When the smart pumps were first implemented, every ED nurse attended a group inservice and/or one-on-one education, given by the manufacturer's education specialists or one of the ED educators who serve as "super users." "Usually the educators are called upon to refresh someone's memory who may have been off work for while on maternity leave or extended vacation," says Haus.

At University of Chicago's ED, "super users" were sent to inservices provided by Hospira, the Lake Forest, IL-based manufacturer of the smart pumps used in the ED, says **Carol Floreza**, RN, clinical director of Mitchell Emergency Department at the University of Chicago Medical Center. "We do not run into a large number of problems, except for the more 'seasoned' staff can sometimes be resistant to technology. However, super users are always available in a pinch," says Floreza. "We also consistently do biannual competencies on all of our equipment and target those that we think need additional help."

There is a potential for errors with medications not yet in the smart pump's "library" of preprogrammed dosages, such as some of the newer antibiotics for the treatment of septic shock, but this occurs infrequently, says Haus.

In those instances, the calculations are done by the nurse and double-checked by another nurse, an ED physician, or pharmacist, says Haus. "Those medications being administered in the emergency setting which are outside the recommended range of the pump likewise need to be calculated by the staff and the pump guardrails overridden," she says. "Avoiding errors that result from this rests with the diligence to obtain a second brain and set of eyes."

When used properly, the pumps prevent errors by confirming the rate and dosage for the medication to be infused, says Haus. "It eliminates the human error potential in doing drug calculation," she says. "By standardizing the drip/dose calculations which require weight dosing, errors related to dosing and flow are almost nonexistent."

Reference

1. Institute for Safe Medication Practices. Smart pumps are not smart on their own. *ISMP Medication Safety Alert! Acute Care* 2007; April 19, 2007. Accessed at www.ismp.org/Newsletters/acute-care/archives/Apr07.asp#19. ■

Updated asthma guidelines call for new ED protocols

For the first time in a decade, the National Asthma Education and Prevention Program has issued updated asthma guidelines, many of which will affect your ED.

At Massachusetts General Hospital in Boston, ED nurses already follow most of the new recommendations, including the selective use of adjunct treatments such as intravenous magnesium and heliox, says **Carlos A. Camargo**, MD, DrPH, an ED physician at the hospital and member of the panel that wrote the asthma guidelines. However, using peak flow meters to obtain an objective measure of acute asthma severity is an area that “always needs attention,” he says. “I think this one item really needs a local champion, which could definitely be an ED nurse,” he says. There is often an inability to find peak flow meters in a busy ED, notes Camargo, and ensuring availability of the meters and their proper use could be part of the champion’s role.

Physician history not always correct

Lack of peak flow assessment is due partly to the mistaken belief that the clinician knows the exacerbation severity by history and exam alone, he says. “Studies show that physician assessments are not always accurate,” Camargo says.

There also is a misconception that peak flow must be

checked in “everyone or no one,” says Camargo. “The new guidelines recognize that peak flow measurement should not be done in patients with obvious respiratory extremis,” he says. “But even in these patients, later, when they improve, there is value to checking peak flow to assess severity and monitor further improvements.”

Massachusetts General’s ED has a standing order for the triage nurse to give albuterol to patients with acute asthma, reports Camargo. “This results in the onset of β -agonist treatment in less than 10 minutes for the vast majority of patients,” he says. “The staff are also very attuned to use of systemic corticosteroids, with most getting this treatment in the first half-hour of the visit.”

How your ED will be affected

Here are key changes in the asthma guidelines that will affect your ED:

• New doses of medications are recommended.

For treatment of exacerbations, levalbuterol is added as a short-acting β -agonist treatment. This is an *option* to albuterol, says **Susan L. Janson**, DNSc, RN, ANP, AE-C, FAAN, a nationally certified asthma educator and member of the panel that wrote the asthma guidelines. “The addition of ipratropium to albuterol still is recommended in the ED, but no longer recommended during hospitalization,” she says.

Reduced doses and frequency of administration of oral corticosteroids are now recommended in severe exacerbations. In addition, magnesium sulfate or heliox can be considered for severe exacerbation, and inhaled corticosteroids can be considered for patients being discharged.

The new recommended doses of oral corticosteroids including prednisone, prednisolone, methylprednisolone in the ED are:

— Child dose (≤ 12 yrs): 1 mg/kg in two divided doses (maximum = 60 mg/day) until peak expiratory flow (PEF) is 70% of predicted or personal best; (**see story on p. 18 about compliance with pediatric asthma guidelines.**)

— Adult dose: 40-80 mg/day in one or two divided doses until PEF reaches 70% of predicted or personal best.

• The guidelines note the limited value of pulmonary function measures in very severe exacerbations.

The previous guidelines suggested that everyone should get an initial peak flow reading, but clearly that would be inappropriate in the sickest of patients, says Camargo. “The 2007 guidelines clarify this point.”

If the patient is in obvious extremis, treatment should not be delayed in order to measure pulmonary function, says Janson. “However, serial pulmonary

EXECUTIVE SUMMARY

ED asthma protocols will need to be changed, due to updated guidelines from the National Asthma Education and Prevention Program. Key changes:

- The peak flow cut point for severe exacerbation has been lowered from $< 50\%$ of predicted value to $< 40\%$ of predicted value.
- Levalbuterol has been added as another short-acting β -agonist treatment for asthma exacerbations.
- Reduced doses and frequency of administration of oral corticosteroids are recommended in severe exacerbations.
- Magnesium sulfate or heliox should be considered for severe exacerbation.
- Inhaled corticosteroids should be considered for patients being discharged.

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The Expert Panel Report 3 (EPR-3): Guidelines for the Diagnosis and Management of Asthma — Full Report, 2007 can be downloaded at no charge at www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm. Or to obtain a free single copy, contact The National Asthma Education and Prevention Program, NHLBI Health Information Center, P.O. Box 30105, Bethesda, MD 20824-0105. Phone: (301) 592-8573. Fax: (240) 629-3246.

function measurements should be started within one hour of initial treatment,” she says.

• **For assessment of hypoxemia, there is renewed emphasis on monitoring oxygen saturation serially.**

“You should not rely on a single spot check to assess severity,” says Camargo. “The key is serial testing. In some places, this is current practice; in others, it is not.”

Emergency nurses should measure oxygen saturation with pulse oximetry continuously or at frequent intervals in all patients, but especially in infants with asthma exacerbation, says Janson.

• **There are different cut points of PEF or forced expiratory volume in 1 second (FEV1).**

The guidelines reinstate the 1991 cut points of FEV or PEF to indicate the goal for discharge from the urgent care or emergency setting ($\geq 70\%$ predicted FEV1 or PEF), for patients for whom response to therapy is incomplete, and for patients who usually require continued treatment in the ED (40%-69% predicted).

“These cut points differ from those used to determine long-term asthma control and treatments, thus underscoring the distinction between acute and chronic asthma management,” says Janson. ■



EDs not complying with pediatric asthma guidelines

This is top reason for admissions through ED

Asthma was the top reason children were admitted to the hospital through the ED in 2004, accounting for 95,400 admissions, according to a new report from the Agency for Healthcare Research and Quality.¹

EDs are not compliant with some of the recommendations of the National Asthma Education and Prevention Program (NAEPP) guidelines for pediatric asthma, according to a new study.² Researchers looked at 141 cases of pediatric asthma at the University of California San Francisco (UCSF) Medical Center ED in 2003 and 2004. Peak expiratory flow rate was performed in just 25.9% of cases, β -agonists and corticosteroids were not used in 2.8% and 31.9% of cases, respectively, and at discharge, no corticosteroid prescription was given in 40.4% of the cases. No written action plan was prepared for 80.1% of cases.

“Our study definitely points to a need for improving the steps that take place when the patient is being discharged from the ED,” says **Cathi E. Dennehy**, PharmD, one of the study’s authors and associate clinical professor in the Department of Clinical Pharmacy at UCSF.

Asthma is a highly researched diagnosis with specific

EXECUTIVE SUMMARY

Asthma was the top reason for pediatric hospital admissions through the ED, with 95,400 admissions annually, says a new report. EDs are noncompliant with some recommendations in current guidelines for pediatric asthma, specifically the use of peak expiratory flow rate and corticosteroids, according to a new study.

- Give patients a written action plan at discharge.
- Set a goal of door-to-steroid time of under 60 minutes.
- Determine treatment by obtaining an asthma severity score.

treatment plans, says **Jennifer Hinrichs**, MSN, RN, CCRN, advanced practice specialist for the Emergency Medicine and Trauma Center at Children's National Medical Center in Washington, DC. "The worst thing an ED nurse could do is not follow the National Asthma Guidelines."

Here are three misconceptions many ED nurses have about care of pediatric asthma:

- **That nebulizers work better than metered dose inhalers (MDIs).**

"If used correctly, an MDI with a spacer works just as effectively as a nebulizer," says Hinrichs. "The medication is equally distributed throughout the lung fields."

- **That intravenous steroids work better than oral.**

"People think because it is going in a vein it must work better. Not true!" says Hinrichs. "In addition, when you have a child with respiratory distress, the last thing you want to do is stress the child out with a painful procedure, making it even more difficult to breathe."

To mask the bad taste of oral steroids, mix them with a couple drops of chocolate syrup or juice, advises Hinrichs. "Beware of putting the dose in a large volume because the child will need to take it all," she notes.

- **That the pediatric airway is the same as an adult's, only smaller.**

The pediatric airway is anatomically different than the adult airway, says **Stacy Doyle**, RN, MBA, CPN, manager of Children's National Medical Center's Emergency Medicine and Trauma Center. "Children are not 'little adults.'"

Base care on asthma score

To improve care of pediatric asthma patients, do the following:

- **Perform frequent reassessments.**

"Kids who are in distress, even if mild, can worsen quickly and need to be monitored even if in the waiting room," says Hinrichs. "Also, teenagers may present able to walk, talk, and look like they are breathing fine, only to find out that they have an oxygen saturation that is much lower than normal and require immediate treatment."

- **Start treatment quickly.**

It is "incredibly important" for your initial assessment to include an asthma severity score with care based on that score, says Hinrichs. Clinical practices that ED nurses might fail to follow include steroid administration within an hour of arrival for moderate/severe asthma patients, and failing to utilize an asthma scoring system to systematically classify the severity of the asthma patient, says Hinrichs.

ED nurses at Children's National use an asthma pathway that can be initiated at triage, with treatment

based on the asthma score of the patient. "For asthma patients with scores of four or higher, treatment includes initiating a breathing treatment and starting the first dose of steroids immediately," she says. "For patients with a score of 7 to 10, the same treatment is given, but we also get the physician to the bedside to provide more aggressive care."

Your ED's protocols should stress the importance of the timeframe from presentation to steroid administration, adds Hinrichs. "Many people are more concerned about starting nebulizer treatments," says Hinrichs. "While this is good and offers immediate relief and ease of breathing, the steroid will be the long-term fix and will affect discharge and admission rates and overall outcome."

Doyle's ED staff attempt to bring asthmatics back to the ED to start treatment quickly. "One of our nurse-sensitive indicators in our ED is door-to-steroid time for our asthmatics with a goal of under 60 minutes," she says.

- **Take a minute to educate patients.**

If you only have a minute, Hinrichs recommends telling patients these three things: "Take your medication as directed every day. Do not let yourself run out.

SOURCES/RESOURCE

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A variety of free asthma education resources are available from IMPACT DC (Improving Pediatric Asthma Care in the District of Columbia). IMPACT DC is a pediatric asthma surveillance, research, and intervention project. To download materials, go to www.impact-dc.org.

Do not quit taking without physician approval.”

Teach patients the correct nebulizer technique or good MDI technique, says Hinrichs. “Make sure the family is aware that the medications are just as important during a healthy state as they are during a flare-up,” she says.

References

1. Merrill C, Owens PL. Reasons for being admitted to the hospital through the emergency department for children and adolescents, 2004. *HCUP Statistical Brief No. 33*. Rockville, MD: Agency for Healthcare Research and Quality; June 2007.
2. Ly CD, Dennehy CE. Emergency department management of pediatric asthma at a university teaching hospital. Published online, Sept. 11, 2007. www.theannals.com, DOI 10.1345/aph.1K138. ■

Take these immediate steps for ATV-related trauma

Serious injury may exist even days after an accident

The number of children with injuries from all-terrain vehicle (ATV) accidents has increased dramatically in many EDs. From 1998 to 2004, there was a 100% increase in the number of ATV injuries, which children under 16 representing only 14% of ATV riders, but 33% of injuries and fatalities.¹

Of 34 children admitted from the ED at Houston-based Memorial Hermann Children’s Hospital, 76% were not wearing helmets, reported a recent study.²

The motivation for the study was a 12-year-old girl who suffered a neck injury after driving into a barbed wire fence during an ATV accident and went into respiratory distress an hour later, says **Kevin D. Pereira**, MD, one of the study’s authors and director

of pediatric otolaryngology at the University of Maryland School of Medicine in Baltimore. “She was found to have a complete laryngotracheal separation, which generally results in instant death.” The girl subsequently underwent a total laryngectomy and survived.

The ED had seen an increase in ATV accidents in the summer, but information on the lethality of these head and neck injuries in the pediatric age group was scarce, says Pereira. “These factors prompted us to look at the demographics and severity of these injuries in children,” he says.

Researchers found that neurocranial injury composed most of the injuries (45%), and soft-tissue injuries to the face also were common (28%). “The implication for ED nurses is to suspect such injuries in every pediatric patient presenting after an ATV accident,” says Pereira. “Definitive confirmation of the structural integrity of the airway and central nervous system is a must, irrespective of the patient’s outward appearance. Keep every patient NPO until then.”

Ask the right questions at triage

Ask the right questions at triage

Yuma (AZ) Regional Medical Center has seen an increased number of injuries over the last few years, reports **Lori Vandersloot**, RN, BSN, MBA, CEN, director of emergency services. In 2006, the ED saw 344 ATV injuries, up from 199 the previous year.

ED nurses have noticed that if ATV drivers are riding in sand dunes, they are wearing helmets and occasionally protective gear, but those riding in other off-road areas generally aren’t wearing either, notes Vandersloot.

ED nurses at Yuma Regional ask these questions at triage, says Vandersloot:

- Were you wearing a helmet and protective gear?
- What was your speed at impact?
- What distance were you thrown?
- Did you have loss of consciousness?
- Do you have any head or neck pain?

Signs that the injury could be life-threatening include the following, says Vandersloot: Skin that is pale, cool, and/or diaphoretic; hypotension or sudden rise in blood pressure; tachycardia or bradycardia; tachypnea; altered level of consciousness; constricted pupils; restlessness; combativeness; and paralysis.

About 75% of children involved in ATV accidents are discharged from Yuma Regional’s ED, says Vandersloot. Here are interventions done for children likely to need hospitalization:

- The child’s airway is managed, with possible supplementation with oxygen and/or bag-valve mask/intubation.
- Circulation is supported with intravenous fluids and/or blood products.

EXECUTIVE SUMMARY

Pediatric injuries from all-terrain vehicle accidents have increased dramatically in recent years, and many ED nurses are seeing increased numbers of these cases.

- Even if a child can walk and talk, a closed head injury with intracranial hemorrhage is possible.
- Instruct injured children and parents to warn peers about helmet safety.
- Don’t assume no serious injury exists if the child doesn’t present immediately after the accident.

SOURCES

For more information on caring for children injured from all-terrain vehicle accidents, contact:

- **Kevin D. Pereira**, MD, Director of Pediatric Otolaryngology, University of Maryland School of Medicine, 16 S. Eutaw St., Suite 500, Baltimore, MD 21201. Phone: (410) 328- 5828. Fax: (410) 328-5827. E-mail: KPereira@smail.umaryland.edu.
- **Lori Vandersloot**, RN, BSN, MBA, CEN, Director, Emergency Services, Yuma Regional Medical Center. 2400 S. Avenue A, Yuma, AZ 85364. Phone: (928) 336-7107. Fax: (928) 336-7705. E-mail: LVandersloot@yumaregional.org.
- **Melinda Weaver**, RN, Trauma Quality Improvement Nurse, Cook Children's Health Care System, 801 Seventh Ave., Fort Worth, TX 76104. Phone: (682) 885-3958. E-mail: melindaw@cookchildrens.org.

- Pain is managed.
- Diagnostic studies are done, including X-ray, CT scan, and laboratory draws.
- Cervical spine precautions are taken if there is a potential neck injury.
- A surgical consult is done as soon as possible if the patient is a potential surgical candidate.

Don't assume injury isn't serious

Twenty-five children were admitted from the ED with ATV injuries at Fort Worth, TX-based Cook Children's Medical Center in 2006, reports **Melinda Weaver**, RN, trauma quality improvement nurse and former ED nurse.

"Just because a child walks in doesn't mean they don't have a life-threatening injury," she says. "Even if they can walk and talk, they could still have a closed-head injury with intracranial hemorrhage."

If the injured child was not wearing a helmet, ED nurses at Cook take the opportunity to talk to the child and the parents about helmet safety. "We say, 'Now that this happened to you, what would you tell your friends?'" says Weaver. "That is how you get the biggest impact — when someone in their peer group tells them, 'This is what happened to me.' Kids listen to other kids."

Even if a significant amount of time has passed since the accident, don't assume this means the child isn't seriously hurt, says Weaver. "The kid may jump a homemade ramp on Friday night and crash, and here it is Monday and he's complaining of abdominal pain,"

says Weaver. "The triage nurse may discount it because it's been three days, but the CT comes back and it shows a bleed."

Always have a high index of suspicion if the child has the mechanism of injury and pain, says Weaver. "If the child tells you their stomach's hurting, most nurses will ask about nausea, vomiting, and diarrhea," she says. "But another very important question to ask is, 'Have you had any trauma?' Kids may not tell their parents because they've been someplace they shouldn't have been."

In one case, a teen girl came to Cook Children's ED two days after an ATV accident, and when nurses did the assessment, they found her abdomen was rigid and guarded, says Weaver. "She had a ruptured bowel which could have become septic if care had been delayed any longer," she says.

References

1. Lingle RL. 2004 Annual report of ATV deaths and injuries. United States Product Safety Commission. September 2005.
2. Wang BS, Smith SL, Pereira KD. Pediatric head and neck trauma from all-terrain vehicle accidents. Presented at the 110th Annual Meeting of the American Academy of Otolaryngology — Head and Neck Surgery Foundation. Sept. 17-20, 2006. Toronto. ■

New ED treatments for intracerebral hemorrhage

Don't assume nothing can be done

A new medication holds promise for slowing bleeding from intracerebral hemorrhage (ICH), according to updated guidelines from the American Heart Association and the American Stroke Association. Recombinant activated factor VII (rFVIIa) is a drug

EXECUTIVE SUMMARY

A new medication, recombinant activated factor VII, shows promise for slowing bleeding from intracerebral hemorrhage (ICH), according to updated guidelines. Other key changes:

- CT and magnetic resonance (MR) scans are effective at identifying ICH.
- Controlling high blood pressure is the most important way to prevent ICH.
- Headache and vomiting are more common with ICH than with other types of stroke.

that slows down bleeding and is approved to treat patients with hemophilia, says **Joseph Broderick**, MD, chair of the guideline writing committee and professor and chairman in the Neurology Department of the University of Cincinnati Medical Center.¹

Recent presentation of the FAST Trial results confirmed that rFVIIa slows bleeding when given within the first three to four hours after onset, he notes. “rFVIIa is mentioned as a potential new treatment that needs further study,” Broderick says. “However, the efficacy and safety of this treatment must be established in a Phase III trial before its use in patients with ICH can be recommended outside of a clinical trial.” **(To obtain a copy of the guidelines, see resource box, right.)**

With ICH, there is a misconception that nothing can be done, says **Gena Kreiner**, CCRN, stroke coordinator at St. Joseph Medical Center in Tacoma, WA. “The belief is that the damage is done,” she says. “Because the new guidelines suggest that factor VII may be used to slow the bleeding, the window of time that this can be done will affect the urgency in getting these patients to CT scan and receiving treatment. It would be what tPA is to an ischemic.”

Preventing secondary brain injury in a hemorrhagic stroke patient is just as important as preventing secondary injury in head trauma, says Kreiner. “This would include avoiding hypotension as well as hypertension,” she says. “Cerebral perfusion is important in the prevention of secondary injury.”

Also, ICH is “still a stroke,” and the National Institutes of Health Stroke Scale should be performed on these patients just as with ischemic stroke, says Kreiner.

ICH accounts for less than 10% of first-ever strokes, with 35%-52% of patients dying within a month. Of the estimated more than 60,000 patients who have an ICH in a year, only 20% are expected to be functionally independent six months afterward.²

Reducing high blood pressure still is the best way to avoid ICH, says Broderick. “ICH is the second most common type of stroke, and its incidence is staying the same or slightly increasing,” he says. “The time is right for updating the guidelines because there have been a number of published studies that may affect how we manage these very sick patients.”

Here are other key changes that will affect ED nurses:

- **Feasibility and timing of surgical options.**

“We don’t recommend routine surgical treatment of

ICH, but people who have larger blood clots close to the surface of the brain or with larger hemorrhages in the cerebellum may be candidates,” says Broderick. “Research is ongoing to explore less invasive and more precise surgical methods to remove blood.”

- **New prevention strategies.**

“Treating high blood pressure remains the most important target for preventing ICH,” stresses Broderick. Smoking cigarettes, heavy alcohol use and cocaine, all risk factors for ICH, should be discontinued to prevent recurrent ICH, say the guidelines.

- **New warning signs for recognizing ICH.**

Headache and vomiting are more common with ICH than with other types of stroke, according to the guidelines.

- **Different ways to take pictures of the brain to**

SOURCES/RESOURCE

For more information on caring for intracerebral hemorrhage patients in the ED, contact:

- **Joseph Broderick**, MD, Professor and Chairman, Neurology Department, University of Cincinnati, 231 Albert Sabin Way, Cincinnati, OH 45267-0525. Phone: (513) 558-5429. E-mail: joseph.broderick@uc.edu.
- **Kathleen Kearns**, RN, Nurse Coordinator, Providence Stroke Center, Providence St. Vincent Medical Center, 9205 S.W. Barnes Road, Portland, OR 97225. Phone: (503) 216-4247. E-mail: kathleen.kearns@providence.org.
- **Gena Kreiner**, CCRN, Stroke Coordinator, St. Joseph Medical Center, 1717 S. J St., Tacoma, WA 98405. E-mail: GenaKreiner@fhshealth.org.

The Guidelines for the Management of Spontaneous Intracerebral Hemorrhage in Adults can be downloaded at no charge at <http://stroke.aha.org/journals/cgi/reprint/STROKEAHA.107.18368> 9. Or a single reprint is available at no charge. Contact the American Heart Association, Public Information, 7272 Greenville Ave., Dallas, TX 75231-4596. Phone: (800) 242-8721. Ask for reprint number 71-0411.

COMING IN FUTURE MONTHS

■ How your ED can prevent needless pneumonia deaths

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■ Use standing orders to decrease pain of adult trauma patients

diagnose a hemorrhagic stroke.

CT and magnetic resonance imaging (MRI) scans appear equal in the ability to identify the ICH, its size and location and ongoing bleeding, according to the updated guidelines.

“Before, a CT scan was the primary option for evaluating stroke patients in an emergency. Data now show that MRI scans also do the job and both are first-choice options,” Broderick says. In patients with contraindications to MRI, such as those with pacemakers, CT should be obtained, he notes.

Each type of imaging has benefits: CT is better at showing associated ventricular extension, while MR is better at detecting underlying structural lesions in the brain, says Broderick. “MR is also better than CT at showing tiny old hemorrhages in the brain. However, MR is not always as practical as the faster CT scan for patients who are unconsciousness, vomiting, or on a ventilator,” he says.

Blood pressure is “very much the topic” when a patient has ICH, says **Kathleen Kearns**, RN, nurse coordinator for the stroke center at Providence St. Vincent Medical Center in Portland, OR.

“The ED nurse needs to be aware that the ‘permissive

hypertension’ for these types of stroke patients is not as high as those patients with ischemic strokes,” says Kearns. “So the ED nurse needs to be monitoring carefully.” Systolic blood pressure over 180 without suspicion of elevated intracranial pressure can be reduced to a target of 160, she says.

Monitor blood pressure every 15 minutes unless you are aggressively treating the pressure and working to get it down, in which case reassessment should be done every five minutes, says Kearns.

No antithrombotics, anticoagulants, or thrombolytics should be given before the CT results are known, stresses Kearns. “Knowing the PT/PTT/INR is important, so you can be thinking ahead of possible reversal of anticoagulant therapy if patient has had a bleed and has been on anticoagulant therapy,” says Kearns.

References

1. Broderick J, Connolly S, Feldman E, et al. Guidelines for the management of spontaneous intracerebral hemorrhage in adults. *Stroke* 2007; 38:2,001-2,023.
2. Counsell C, Boonyakarnkul S, Dennis M, et al. Primary intracerebral haemorrhage in the Oxfordshire Community Stroke Project, 2: prognosis. *Cerebrovasc Dis* 1995; 5:26-34. ■

Use these tips if you suspect rabies

Whether to treat is a ‘complicated decision’

The type of rabies previously found in dogs in the United States has been eliminated, according to the Centers for Disease Control and Prevention (CDC). However, the disease remains a human threat, particularly in bats, and rabies can be transmitted to dogs or other pets by other wildlife, says the CDC.

Determining which patients require rabies post-exposure prophylaxis (PEP) is “a complicated decision,” says **Karen Hust**, RN-CEN, MSN, BSN, ADN, advanced clinical educator at the ED at St. Joseph’s/Candler Hospital in Savannah, GA.

“It varies based on several factors,” says Hust. You must consider the severity and type of animal exposure such as bite or scratch, the condition of the animal, whether the animal can be identified and caught, and the location of the exposure on the patient, says Hust.

Pre-printed order form helps

At St. Josephs/Candler, a computerized tool was created to make this decision easier, says Hust. “Ordering and administration of the rabies PEP has

been made less complicated and safer for our patients by utilizing a pre-printed order form.”

First, the physician indicates if the patient has ever been previously vaccinated and whether the patient is there for initial exposure or follow-up. The form then delineates the correct dosage and administration information based on the physician’s selection. Requiring use of the pre-printed orders helps prevent medication errors.

Next, ED nurses document their assessment information electronically. “If they indicate this is the patient’s first ED visit for a potential rabies exposure, the computer automatically generates a report that is populated with the patient demographic and pertinent exposure information,” says Hust. “This is faxed to the appropriate government agency as required by our laws for potential rabies exposure reporting.” ■

SOURCE

For more information on treatment of rabies in the ED, contact:

- **Karen Hust**, RN-CEN, MSN, BSN, ADN, Advanced Clinical Educator, Emergency Department, St. Joseph’s/Candler Hospital, 5353 Reynolds St., Savannah, GA 31405. Phone: (912) 658-6779. Fax: (912) 691-9224. E-mail: hustk@sjchs.org.

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Participants should select what they believe to be the correct answers, then refer to the list of correct answers to test their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material.

The semester ends with this issue. You must complete the evaluation form provided in that issue and return it in the reply envelope provided in order to receive a certificate of completion. When your evaluation is received, a certificate will be mailed to you.

Participants who complete this activity will be able to:

- **identify** clinical, regulatory, or social issues relating to ED nursing;
- **describe** how those issues affect nursing service delivery;
- **integrate** practical solutions to problems and information into the ED nurse's daily practices, according to advice from nationally recognized experts.

21. Which is true regarding elder trauma patients, says Joan Somes, PhD, MSN, RN, CEN, FAEN?
- A. Tachycardia may not develop because the patient is taking beta-blockers or calcium channel blockers.
 - B. Geriatric patients are more likely to vasoconstrict.
 - C. An Injury Severity Score can accurately predict outcome.
 - D. You can safely assume that diminished heart and lung sounds are due to trauma.
22. Which is recommended by updated guidelines from the National Asthma Education and Prevention Program?
- A. Peak flow measurement should be done even in patients with obvious respiratory extremis.
 - B. Albuterol is the only short-acting β -agonist treatment that should be used.
 - C. Levalbuterol is added as a short-acting β -agonist treatment.
 - D. Increased doses of oral corticosteroids are now recommended in severe exacerbations.
23. Which is accurate regarding care of pediatric asthma patients in the ED, according to Jennifer Hinrichs, MSN, RN, CCRN?
- A. Nebulizers work better than metered dose inhalers.
 - B. Intravenous steroids work better than oral steroids.
 - C. If used correctly, a metered dose inhaler is as effective as a nebulizer.
 - D. Treatment should not be based on the child's asthma score.
24. Which is correct regarding treatment of intracerebral hemorrhage (ICH), according to updated guidelines from the American Heart Association and American Stroke Association?
- A. Magnetic resonance imaging (MRI) scans are not effective in identifying ICH.
 - B. CT is better than MRI at showing associated ventricular extension.
 - C. Anticoagulants can safely be given before the CT results are known.
 - D. Headache and vomiting are more common with ICH than with other types of stroke.

Answers: 21. A; 22. C; 23. C; 24. D.

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