



Friday Night [under the] Lights

2013

Happy Friday.

Friday Night [under the] Lights was literally up in the air tonight.

I had a late flight home and just landed and reconnected to the world. If this email makes it into your mailbox, I guess the government sequestration hasn't yet impacted the internet structure. Give it time though. I'm sure it will. *Y12K.*

I hope everyone's doing well. A funny thing happened to me earlier this week. It falls into that category of "Medical Lessons Learned from Real Life". Frankly, it was a good reminder of an important professional skill we should all pay more attention to.

I was on a US Air flight from Austin to Charlotte. During the routine pre-departure briefing from the Flight Attendant, she made the standard reference to use of the "Aft Lavatories".

There was a small child and his mom in the row across from me. Not sure how old he was (I'm not great at guestimating ages and I always try and remember the Medicine Rules of Etiquette – Don't ask anyone their age or weight unless you're calculating a drug dose and never ask a female if she's pregnant unless it's in the middle of the delivery).

Anyway, the boy asks his mom what an "Aft Lavatory" was. His mom said it was the bathroom in the back of the plane. He was quiet for a second and then he asked, "Why didn't the lady just say it was the bathroom?" His mom apparently thought about his very pertinent question (as did I) and said, "well honey – that's the special language the airline people use to describe things in *their* job – The rest of us might not know exactly what some of their words or descriptions mean, but they do."

I figured the discussion was over until the boy piped up and said, "...but shouldn't the pilot know where the bathrooms are already?"

I just about wet my pants.

Very insightful question from the young Einstein. I leaned over to his mom (no idea how old she was or what she weighed, btw) and made some nice little comment about what a good question her son had.

And then my mind wandered into what we sometimes do in medicine. Our version of “aft lavatories”

“I’ve looked at your X-rays, Mr. Johnson, and it appears you have some bilateral increased interstitial markings in both your bases and the question of a small effusion on the right. I don’t see any evidence of consolidation that worries me, though”.

“Well, thank goodness, Doctor. I thought I might have heart failure again.”

Like the aviation industry, we have our own lingo in medicine as well. We use words that WE understand, but our patients and their families have no idea what we’re talking about. I think it probably happens for several reasons:

- *We are comfortable with “our” language so it’s what we default to when we’re practicing our trade*
- *Sometimes we feel like it’s easier on patients and their families if we DON’T use words they understand because of the emotional impact of the meaning – Like “tumor” vs “cancer” or altered mental status vs stroke.*
- *We use our language in hopes of minimizing patient’s additional questions*
- *It’s a way to communicate our expertise in an area that’s usually foreign to our patients*
- *It’s cool.*

Regardless of why it might happen or how comfortable we are with using our own secret language, it’s not what’s best for our patients or their loved ones. It’s confusing and it doesn’t allow patients to fully understand what we’re saying so they can begin to react, ask questions and plan their approaches to our message.

For example, I think anyone that’s been in medicine long enough to have had to convey the horribly difficult message that someone has died has used the term “expired”. I will never forget early in my career telling a patient’s family that their father had “expired” in the ED. I crafted (I thought) my message as best I could using all the principles of death telling in order to convey the news in a compassionate, caring and clear way.

When I was done, they were all crying, and at one point, one of the relatives asked if I thought he would be OK.

Human bodies expire for death certificate purposes. *People die.* A subtle difference in communication makes all the difference in understanding.

So, appropriately, the house of medicine has begun to emphasize the importance of good communication between caregiver and patient. Clear, understandable communications between us and them that helps them comprehend the often difficult messages we have to deliver.

Simplified, easy-to-understand communication movements are happening all around us. Think about it. In EMS and public safety, we've migrated away from the use of "10 codes" and have adopted simple descriptions. Although I'd argue there's still one 10 code we should still use...

Our disaster language has been simplified so everyone involved can understand even when they may not be a part of our own system or our practice.

A gifted practitioner communicates in a way that sends a message, helps others understand clearly and (probably most important) allows them to ask additional questions regarding their problem and our assessment. It's a critical part of what we do and a powerful skill that our patients expect & deserve.

We should all take the time to reflect on how we communicate. How? Be brave. Ask your colleagues how good you are – how clear you are – how easy is it to understand what you're trying to say. Listen to others and give them feedback (positive and negative) as well...

And the next time a flight attendant asks if you are OK, tell them you're perfusing well, oxygenation seems normal, you have no problems with your peristalsis at present and your mitochondria are comfortable.

Then they'll know you don't need the aft lavatory.

AMR CARES Participating practices

AMR as an organization, is committed to having every single one of our Practices participating in the CARES program (Cardiac Arrest Registry to Enhance Survival). It's a critically important benchmarking program that allows us to see how well we are doing as a system managing cardiac arrest.

It's impressive that we have grown our CARES participation by almost 400% in the past two years!!

The numbers of Practices enrolled:

2010	-	7
2011	-	19
2012	-	38

Thanks to the aggressive efforts of Lynn White, help from the Medtronic Foundation and the blood, sweat & tears of local AMR Practice staff and hospitals. You've heard this a gazillion times before – we'll treat almost 27,000 of these patients this year. We have an *obligation* to make sure we're doing the absolute best job the science and our efforts have to offer.

It seemed so real...

I forgot to include the brochure below in last week's FNuL. I picked it up while I was in Grand Rapids a few weeks ago.

Honestly, when I read the first few lines ("He speaks. He breathes. He has a pulse and vital signs") – I immediately thought it was a handout about Randy Stroyk, our CEO of AMR Air who's been spending time with our colleagues in Grand Rapids.

But then I read a little further where it said *He can help you save lives*" and I knew it was about someone else.

On a serious note, the Grand Rapids Practice has developed an impressive medical simulation program. Not only is the physical lab well designed for simulation education, but the program has developed a significant outreach effort and educational reputation with our non-EMS colleagues. One of the best ways to prepare ourselves for low frequency – high severity events is to train with those we will collaborate with during that care.

Hats off to Grand Rapids for their successes in simulation... Nicely done.

He speaks. He breathes. He has a pulse and vital signs. *He can help you save lives.*



We call him George, but he's known in the medical profession as one of the most valuable and realistic teaching tools for anyone interested in improving advanced life-saving skills. He has a pulse, realistic lung sounds, speech capability and more, and he lives at the AMR SimCenter in Grand Rapids. He's operated remotely from a control room, which removes the instructors from the performance area to allow participants to act and practice as they do at work and in the field. The state-of-the-art training includes digital audio and video recording for comprehensive debriefings of performance.

AMR is happy to offer George for training for other organizations such as hospitals, nursing facilities, and EMS teams. We offer convenient scheduling and reasonable pricing.

Goals

- Increase the safety and effectiveness of patient care
- Allow for learning in a safe, non-threatening, enjoyable and controlled environment away from the clinical setting
- Build confidence in clinical performance, including clinical reasoning, affective and psychomotor skills
- Increase exposure to low-frequency, high-risk patient encounters in order to minimize the risk to patients
- Increase effective communication among all members of the health care team
- Provide objective, video based debriefing of simulated patient encounters

Code Team Development

- Team roles & responsibilities
- Team communications and cohesiveness

Video Debriefing

- Multiple camera angles
- Synchronized with patient scenario
- Professional-grade recording equipment
- Large flat-screen playback



Standardized Scenarios

- STEMI and non-STEMI myocardial infarctions
- Respiratory insufficiency
- Stroke
- Allergic reaction
- Difficult airway management
- Hypovolemia
- Traumatic brain injury
- Chest injury
- Spinal injury
- End-of-life care



Certification of Competency

- Utilizing standardized patient encounters
- Medical panel review utilizing objective evaluation criteria
- Meets or exceeds many EMS medical control skills auditing requirements
- Copy of debriefing video DVD provided for personal record; may be used to enhance personal resume
- EMS practical credits

Assessment & Procedure Skills

- Breath sounds assessment
- Blood pressure assessment
- CPR
- EKG interpretation
- Defibrillation and synchronized cardioversion
- Basic airway management (OPA, NPA, BVM)
- Advanced airway management (ETT, King-LT, Combitube, LMA)
- Needle and surgical cricothyrotomy
- Chest tube insertion
- Peripheral intravenous access
- Chest decompression
- Foley catheterization



For additional information:

Email: simcenterinfo@emsc.net
Phone: 616.459.8228



AMR Air Hawaii takes delivery on the 4th EMS aircraft...

Speedy Bailey stands in front of his new acquisition (Thanks, Libby)...



Therapeutic options for hypoglycemia in the face of worsening availability of D50W...

As you are well aware, the nationwide drug shortage continues. David Twiss and his staff have done a great job of keeping us well supplied with drugs (at least that's what I told the Officer, Dave).

Recently, we started having increasing difficulty with our D50W supplies (D25W as well). Several Practices have asked about therapeutic options in the hypoglycemic patient.

This issue was a frequent topic of discussion at the recent Gathering of Eagles Conference in Dallas as well as between several Medical Directors and Clinical Leaders in AMR.

Frankly, the shortage may be a blessing in disguise. Many practitioners have had concerns with our use of D50W in the field. Dr. Joe Barger, Medical Director in Contra Costa County, discusses the historical challenges with D50W use and their experience with an alternative use of D10:

“Dextrose is a drug I have never been enamored with because it seemed overly complex with various concentrations - medics never seemed to get the right concentrations to the right patients, and we did a lot of diluting for kids, which seemed to multiply the errors.

We used to stock D50 and D25 and gave D50 only to adults. Our local Children's Hospital encouraged us not to give D50 to little ones, since it was so toxic to veins and many of those hard-to-control diabetic kids ran out of veins rapidly. We never had enough D25 (at 10 ml a pop) to give to larger kids, and we always had to dilute D50 to D25 for those large kids and had to dilute D25 to D12.5 for infants. So all that dilution and all the various dosage ranges was kind of a pain. I also have been a bit fearful of major necrosis from extravasation of D50, though I haven't personally seen it. The risks seem to be a lot less with D10.

A couple of years ago we converted to D10 for all children up to age 14, and this year we converted to D10 for all adults too. At NAEMSP last year, I had a long talk with the EMS doc from Singapore and he said they had great success with 100 ml doses (10 g). There was a study of this quite a number of years ago with small patient numbers that suggested not only did it work at a lower dose, it seemed to work a bit faster.

So we have started using D10 in January and now after about 100 uses in the first 6 weeks (by all agencies in the county), we've had two patients out of 100 who either did not attain a glucose of 60 or woke up (a half-dozen were given more dextrose because they were mostly in the 50's on the chemstick. Some of our medics were skeptical, but most have noted that it is quite effective and have become believers. Incredibly we have only had (to my knowledge) 3 uses of D50 this year in non-arrest cases (only one by AMR). We still see D50 use in arrest, although I am telling our medics to not bother checking glucose unless they get ROSC because the chemstick is not reliable in arrest.

Anyway, so far it looks like a success. We don't overshoot, and we don't use the maple syrup. The downside is that there isn't a convenient pre-load of D10 out there, but it's just as cheap, and hasn't been subject to shortages like D50. “

As Dr. Barger points out in his discussion, the ideal dose and administration route of glucose in hypoglycemia has not been defined.

Many Practices are now exploring (or have implemented) the use of D10W infusion for documented hypoglycemia. Some are administering it slow IVP after drawing it up in a syringe – Others are simply infusing D10W via a 250cc IV bag until the patient symptoms resolve.

There are two pertinent papers supporting the use of D10W in this population:

PREHOSPITAL CARE

Dextrose 10% or 50% in the treatment of hypoglycaemia out of hospital? A randomised controlled trial

C Moore, M Woollard



Emerg Med J 2005;22:512-515. doi: 10.1136/emj.2004.020693

Objective: To investigate whether 10% dextrose given in 5 g (50 ml) aliquots is more effective than 50% dextrose given in 5 g (10 ml) aliquots in the treatment of out of hospital hypoglycaemia.

Design: Randomised controlled trial.

Setting: Out of hospital patients attended by paramedics from a large UK ambulance service.

Participants: 51 unresponsive adult patients with blood glucose levels <4 mmol/l.

Intervention: 5 g (50 ml) intravenous aliquots of 10% dextrose or 5 g (10 ml) intravenous aliquots of 50% dextrose to a maximum dose of 25 g.

Main outcome measures: To compare for each dextrose concentration the time to achieve a Glasgow Coma Scale (GCS) score of 15, and the dose required to obtain a blood glucose level of ≥ 4.5 mmol/l.

Results: There were no statistically significant differences between the groups with regard to age or sex, median pretreatment GCS, pretreatment blood glucose level, or proportion of patients with insulin dependent diabetes. Following treatment, there were no statistically significant differences in median time to recovery (8 minutes), median post-treatment GCS, or number of subjects experiencing a further hypoglycaemic episode within 24 hours (four per group). The median total dose of dextrose administered was significantly less with the 10% concentration (10% = 10 g, 50% = 25 g, $p < 0.001$) and median post-treatment blood sugar levels were also significantly lower (10% = 6.2 mmol/l and 50% = 9.4 mmol/l, $p = 0.003$). There were no reports of extravasation injuries in either group.

Conclusions: Dextrose 10% delivered in 5 g (50 ml) aliquots is administered in smaller doses than dextrose 50% delivered in 5 g/10 ml aliquots, resulting in lower post-treatment blood glucose levels. We therefore recommend it as the intravenous treatment of choice for adult hypoglycaemia.

See end of article for authors' affiliations

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EVIDENCE-BASED RESEARCH

Article 990341

A review of the efficacy of 10% dextrose as an alternative to high concentration glucose in the treatment of out-of-hospital hypoglycaemia

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Abstract

Objectives

Dextrose 50% is commonly accepted as the primary management of severe hypoglycaemia, however its position seems to be by default rather than clinical or research significance. The use of 10% dextrose by some prehospital care providers has demonstrated greater practical and physiological advantages, with less clinical implications than higher concentrations. The objective of this study was to review the literature into the efficacy of intravenous 10% dextrose in the management of out-of-hospital hypoglycaemia.

Methods

A review of select electronic databases was conducted from their commencement to the end of March 2008. Inclusion criteria was any article which evaluated the administration of intravenous glucose within any setting/discipline, or when compared to any alternative intervention. Exclusion criteria were articles pertaining to the administration of glucose other than in the emergency management of hypoglycaemia.

Results

The search yielded 3,651 potential articles, with 24 meeting the inclusion/exclusion criteria. Dextrose 10% has demonstrated equal time to restoration of conscious state at smaller doses, with reductions in post-treatment blood sugar levels than the higher 50% concentration. The risk of extravasation injuries and potential clinical ramifications in paediatrics are compelling reasons to consider a shift away from higher concentrations of glucose. The titration of 10% dextrose to patient conscious state has been utilised by other prehospital care providers in replacement of bolus doses of 50% preparations.

Conclusion

There is evidence to suggest that the titration of 10% dextrose to conscious state in severe hypoglycaemia is as efficacious as the administration of 50% dextrose, while reducing associated risks and producing better post-treatment outcomes.

Finally, Dr. Dave Ghilarducci provided some key cautions in the discussion:

“Seems to be few downsides. Glad to see the Eagles have landed on this. Would love to see Joe's [Barger's] discussion since he is typically eloquent .

D50 no doubt hurts kids and most likely adults too....was just thinking of CVA patients who happen to be hypoglycemic. We are just learning how detrimental hyperglycemia is w/ischemic stroke. Would be nice to avoid these complications.

I do worry about rebound hypoglycemia. I wonder how long D10 is effective with say insulin shock due to long acting insulins and/or oral meds? Could this be analogous to naloxone/methadone? Not sure either of the studies included this subset of patients.

I imagine our training for this change should include emphasis on liberal repeat doses of D10. Vigilance is key I think.

Final thought for training..AMA - these folks always want to AMA once awake - might be even riskier without the customary D50 "cushion-o-sugar". Reg. insulin is one thing, but these long actors raise the stakes for rebound insulin shock. Sometimes even our hospitalist friends have to be reminded that despite a meal, oral meds + hypoglycemia = admission.

Of course, they - like my wife - say I worry too much.

Dave

PS

Found an article from the Dark Ages (1990) from my alma mater no less.. 23 years is not too long to catch on”

[Ann Emerg Med.](#) 1990 Jun;19(6):683-7.

50% dextrose: antidote or toxin?

[Browning RG](#), [Olson DW](#), [Stueven HA](#), [Mateer JR](#).

SOURCE

Department of Emergency Medicine, Medical College of Wisconsin, Milwaukee 53226.

ABSTRACT

The empiric administration of 50% dextrose to all patients presenting to the ED with altered mental status is a standard of care predicated on the assumption that glucose administration is harmless to non-hypoglycemic patients. Considerable evidence now disputes this assumption. Glucose administration before complete cerebral ischemia in experimental animals worsens neurologic and histologic outcome. Administration of glucose during severe incomplete ischemia has a similar detrimental effect. The translation of these experimental findings into clinical practice has been slow, perhaps hindered by the frequent use of rodent models and large bolus doses of glucose. However, evidence is now provided by primate and human studies and by experimental designs using clinically relevant doses of glucose. These clinical and experimental findings in conjunction with the wide availability of a rapid bedside screen for hypoglycemia provide the rationale for an alteration in the standard of care. The empiric administration of

glucose should be avoided in patients at risk for cerebral ischemia, such as those with acute stroke, impending cardiac arrest, or severe hypotension or receiving CPR. A bedside fingerstick blood glucose estimation should be performed immediately on all patients presenting with altered mental status. The administration of 50% dextrose should be reserved for those patients in whom hypoglycemia is demonstrated; this practice will uphold Hippocrates' most basic principle of clinical medicine, "The physician must ... do no harm."

Bottom line – It appears that a D10W infusion in documented hypoglycemia may be a safer, more targeted and appropriate treatment for prehospital hypoglycemia. Caution should be used when developing protocols to make sure recurrent hypoglycemia is appropriately addressed as are AMA policies.

With the worsening D50W shortages, this may indeed be the best option.

Thanks to everyone for the vibrant discussion...

He just reminds me of....

This is driving me crazy. Lee Turpen sent me this picture and said it reminded him of someone in AMR.

Hmmmmmm.....



05.22.13...



Epilogue...

PARAPROSDOKIANS (Winston Churchill loved them) are figures of speech in which the latter part of a sentence or phrase is surprising or unexpected; frequently humorous.

=====

1. Where there's a will, I want to be in it.
2. The last thing I want to do is hurt you. But it's still on my list.
3. Since light travels faster than sound, some people appear bright until you hear them speak.
4. If I agreed with you, we'd both be wrong.
5. We never really grow up, we only learn how to act in public.
6. War does not determine who is right - only who is left.
7. Knowledge is knowing a tomato is a fruit. Wisdom is not putting it in a fruit salad.
8. They begin the evening news with 'Good Evening,' then proceed to tell you why it isn't.
9. To steal ideas from one person is plagiarism. To steal from many is research.
10. Buses stop in bus stations. Trains stop in train stations. On my desk is a work station.

11. I thought I wanted a career. Turns out I just wanted paychecks.
12. In filling out an application, where it says, 'In case of emergency, notify:' I put 'DOCTOR.'
13. I didn't say it was your fault, I said I was blaming you.
14. Women will never be equal to men until they can walk down the street with a bald head and a beer gut, and still think they are sexy.
15. A clear conscience is the sign of a fuzzy memory.
16. You do not need a parachute to skydive. You only need a parachute to skydive twice.
17. Money can't buy happiness, but it sure makes misery easier to live with.
18. There's a fine line between cuddling and holding someone down so they can't get away.
19. I used to be indecisive. Now I'm not so sure.
20. You're never too old to learn something stupid.
21. To be sure of hitting the target, shoot first and call whatever you hit the target.
22. Nostalgia isn't what it used to be.
23. Change is inevitable, except from a vending machine.
24. Going to church doesn't make you a Christian any more than standing in a garage makes you a car.
25. Where there's a will, there are relatives.

And mine is..... I'm supposed to respect my elders, but it's getting harder and harder for me to find one now.

That's it from my world. *Happy Friday (it was when I was in the air, anyway)*. As always, thanks for what you do and how you do it...

Ed

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