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AEROMED OUTREACH

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WATER EGRESS TRAINING

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UPCOMING OUTREACH ACTIVITIES

- **Aeromed Community Education Session September 7th at 0900. Contact Jennifer Mefford at jmefford@tgh.org for more information.**

Brace for impact. Tuck head, fold arms across chest and hold on to point of reference with blackout goggles obscuring all vision. Deep breaths, as you hold back hyperventilating and the frame hits the water. You roll upside down as sound goes away and water floods your nose and your mind goes in about a thousand directions in a heartbeat as the adrenaline hits your system and it is now time to see if you were paying close attention in class.

As a program safety requirement Aeromed flight crew members are required to attend water egress training. The training is designed to help give flight crew members the experience in escaping a crashed aircraft in water.

Several Aeromed Crewmembers recently had the opportunity to participate with the US Coast Guard in their Shallow Water Egress Training (SWET) course. The training began in the classroom and covered basic water safety, use of equipment, and emergency procedures.

The second portion of the course included hands-on water training. Crewmembers climbed, fully clothed with boots and flight gear, into a small, enclosed chair with buoys that simulate helicopter fuselage. It flips upside down in the water, allowing crewmembers to practice escaping by pushing through a side window of a sunken aircraft.

The purpose of SWET is to enhance survivability in the event of a submersion incident. This course provides a coordinated physical environment in which the mental processes taught in the classroom can be applied and practiced. This serves to make an otherwise unfamiliar situation familiar, increasing survivability should flight crew members encounter an unfortunate turn of events.

Air transport services provided by Metro Aviation, Inc.

PHYSICIAN'S ARTICLE CONTINUED

D10 Versus D50 For Severe Hypoglycemia

Most of us are trained to administer "an amp" of D50 to profoundly hypoglycemic patients. The administration of D50, like other things we do, seems to be rooted in tradition. The use of D10, however, may be a safer and smarter option in the management of hypoglycemia.

As a review, D50 refers to a solution that is 50% dextrose. So, a 50 mL prefilled syringe ("amp") of D50 contains 25 grams of dextrose. Moving on, D10 refers to a solution that is 10% dextrose. So, in a 250 mL bag of D10, there is 25 grams of dextrose. Some advocate for the use of D10 rather that D50 for reasons that include less overshooting of glycemic targets and less hypertonic properties of D10.

Overshoot

Several studies have reported post-administration glucose levels between 160-250 mg/dL. While this may be perceived as inconsequential during initial management, a study in the critically ill suggests that both rapid excursions in glucose and subsequent glycemic variability may be the best predictors of overall morbidity and mortality. It may be reasonable to consider other treatment approaches that may be less likely to complicate further glycemic management upon admission to the hospital, instead of one that can exacerbate glycemic variability.

D50 is Hypertonic

It is well known that intravenous administration of hypertonic fluids may result in harm to surrounding tissues. In fact, the osmolarity of D50 is even greater than that of 8.4% sodium bicarbonate (2500 mOsm/L compared to 2000 mOsm/L, respectively). Most would advocate for administration via a central line with osmolarities in excess of 900 mOsm/L. While the literature varies, rates of extravasation from such fluids have been cited to be as high as 10-30%. Consider however, the osmolarity of 10% dextrose (D10) is 500 mOsm/L, and within range for safe peripheral administration.

D10 is Effective

In a 2005 study, 51 prehospital patients with severe hypoglycemia (median blood glucose of 26 mg/dL) were randomized to receive either D10 or D50.[1] The primary outcome of the study was time to achieve a GCS of 15. The median time was 8 minutes in both groups. The D10 group only received 10 gm (100mL) of dextrose while the D50 group received 25 gm. Importantly, the post treatment median glucose levels for D10 and D50 were 111 mg/dL and 169 mg/dL, respectively. This study suggests that higher concentrations of dextrose-containing fluids do not expedite reversal of hypoglycemia as compared to lower concentrations, and that lower concentration formulations are more likely to achieve normal glycemic targets.

The use of D10, in my opinion, should be considered when managing profoundly hypoglycemic patients. In the current era of medication shortages, we should become familiar with treatment options other than ones we are painfully familiar with.

1. Moore C, Woollard M. Dextrose 10% or 50% in the treatment of hypoglycaemia out of hospital? A randomised controlled trial. Emerg Med J. 2005;22(7):512-515.

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