Tuesday Night PISAR Safety Meeting Program

I. Business

II. Medical Training

A. Introduction

1. Handouts

2. Review (briefly) EMT + WMT training levels

3. Rationale of basic WMT material selection

4. Outline of tonight's (Saturday's) training

B. Hypothermia

1. Intro

a. A familiar adversary for ASRC

   - Environmental hazards

   - Recognition

   - Prevention and first aid for

   incipient hypothermia

   - PR + education (Awareness: 3/6)

2. Tonight - hypothermia as a medical problem for our patients

   complicated by

   - Trauma (e.g. -)

   - Dehydration + exhaustion (e.g. -)

   - Medical problems (e.g. -)

2. The Problem

a. Confusion in medical literature, e.g.:

   - Some can slow by (warm room) \( \Rightarrow \) 50% save

   - Others: slow \( \Rightarrow \) 10% save, but facts \( \Rightarrow \) 50% save

   b. 3 Blind Mice + Elephant:

      Tail: Rope

      Leg: Tree Trunk

      Trunk: Snake

   c. Similarly w/ hypothermia - Drs.

      Have been using the same name

      For 3 diff. parts of the hypothermia beast...
3. SIDETRACK - NORMAL RESPONSE TO
   a. COLD STRESS
   b. SLIGHT STRESS? -(VASCULAR CONSTRUCTION)
   c. MORE STRESS?

   \[ \uparrow \text{M.R} \Rightarrow \uparrow \text{BMR}; \uparrow \text{SHIVERING} \Rightarrow \uparrow \text{WORK} \]

   \[ \text{RESULTANT } \Delta \text{ IN BODY?} \]
   \[ \uparrow \text{GLYCOGEN} \Rightarrow \uparrow \text{FAT} \Rightarrow \uparrow \text{WASTE LEVELS} \]
   \[ \Rightarrow \text{EXHAUSTION} \Rightarrow \text{FA TIGUE} \]

   [N.B. - EXHAUSTION + MILD HYPOTHERMIA
   
   ARE OFTEN ALMOST UNDISTINGUISHABLE]

   c. MORE STRESS (MORE THAN THE BODY CAN
   
   RESIST) OR LONG-TERM COLD STRESS \Rightarrow
   
   \[ \Rightarrow \text{EXHAUSTION} \Rightarrow \text{BODY'S ABILITY TO COMPENSATE?} \]
   \[ \Rightarrow \text{CORE TEMP} \text{ (ST SEQ.)} \]

4. NOW TOUCHING THE ELEPHANT'S LEG:

   MOUNTAIN HYPOTHERMIA

   SIGNS + SYMPTOMS: STAGE BY STAGE
   a. STAGE I: COMPENSATED
   b. STAGE II: EXHAUSTION + MAXIMAL
   
   REFLEX SURVIVAL ACTIVITY
   c. STAGE III: DECOMPENSATION
   d. STAGE IV: COMA + DEATH
   
   [REFER TO NEXT SLIDE + DISCUSS]

5. IMMERSIVE HYPOTHERMIA:

   a. COLD STRESS GREATER THAN
   
   HUMAN ABILITY TO COMPENSATE
   b. SURVIVAL TECHNIQUE: CONSERVATION
   
   (STALL \& STICK); FLATTENING CAUSES MORE
   
   HEAT LOSS THAN PRODUCTION
   c. TRIAGE: THIN, QUIET VICTIMS
   
   (10\% PRIORITY)
   d. FAST \& IMMEDIATE HOT WATER
   
   WARMING OF TRUNK (WIDEF, 95\%)
   
   (90\% SURVIVAL RATE)
(PVS 26 April 21 MEETING PROGRAM)

6. CHRONIC HYPOThERMIA

- Core temp over long periods w/ little cold stress.
- Usually a result of predisposing factors interfering with CNS thermostat more so than compensation mechanisms.
- List & discuss briefly.

(N.B.: LOC, FOMA, Ketotic Coma, sometimes shock)

7. Types:
- Acute (Immersion)
- Subacute (Min. sometimes chronic or exhaustion)
- Chronic (Urinary)

Are only 3 of the more prominent features of the Hypothermia Exponent but provide a useful way of thinking if we remember they are but different ways of appreciating an exponent.

8. To consider treatment now:

a. I more physiological fact: cold diuresis (Why?)

b. Slow (Passive) Rewarming: USCG

Check Shirvov when Core T < 35°C, only 65% could do so.

C. Active Externa, Rewarming: - Afterload, Rewarming shock, Acrosis

- W/Shivering; 1/4 shivering but same rewarming rate + afterload (b) (saves energy?)

D. Active Internal: Warm, Humidified Air/O2

- Most of AH in Humidity
- O2 may help nutrition, but should probably also have (O2) to stimulate breathing + protect heart.
97. CONNECTING TYPES OF TREATMENT WITH TYPES OF HYPOTERMIA

a. IMMERSION - HOT BATH + WARM O2, POSSIBLY WARM IV
b. REMOTE - WARM O2 AND HOT PAVES + IV
(N.B. HIGH HEAT EXCHANGE MACH)
c. CHRONIC - ISOLATE, TRANSPORT DUE TO
LONG-TERM ELECTROTE IMBALANCE +
ADAPTATION; WARM O2 PROBABLY OK

9. GENERAL CAUTIONS
- HYPOTHERMIC HEART IS IRRITABLE
  SO, NO (WHAM?)
- BOUNCING
- INTRAVENOUS, ETC.

- METABOLISM IS DOWN. IF NO PULSE,
  CPR; IF PULSE (DIFFICULT TO DETECT),
  ASSIST, VENTILATE WITH WARM O2 KO2
- "THEY AREN'T DEAD TILL THEY'RE WARM + REZO!"
- DRUGS + DEFIBRILLATION DON'T WORK
  ON HYPOTHERMICS (UNTIL LATER)
  ESP. IN DRUGS
- VERY DELICATE BALANCE OF CIRCULATION;
  ↑ HDE = SEIZURES.
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10.1. Outdoor people have a very dynamic heat balance: high heat loss, high heat production, compared with us, now.

b. Small A in one will cause big AT° (e.g., cold feet when you stop)

c. Add - fatigue, exhaustion, dehydration, cold, anxiety, etc.

[INSTANT HYPOTHERMIA]

3. Warm inspired O₂ / CO₂ eliminates a major source of heat loss, so it is preventive as well as treatment.

C. VITAL SIGNS

- explain GCS

- see checklist