HEAT RELATED INJURIES

SIGNS & SYMPTOMS:
1. Nausea & vomiting
2. Dizziness or fainting
3. Muscle cramping
4. Full, rapid pulse
5. Skin: red, hot, clammy (dry in late stages)
6. Neuro: ↓ LOC , seizures, unconscious, abnormal behavior, confusion

OBTAIN HISTORY OF:
1. Prior events leading up to
2. Allergies
3. Recent vomiting
4. Last oral intake of liquids
5. Temperature

PRECAUTIONS:
1. An altered or decreased LOC masks the signs of injury and illness.
2. An altered LOC may also lead to the patient being in a panic and unruly.
3. Be aware of the surroundings when responding to a possible hyperthermia call.

TYPES OF HEAT ILLNESSES:

1. Heat syncope

Dizziness or fainting after exposure to high temperatures is caused by vasodilation. This usually is seen in persons unaccustomed to extreme heat.

2. Heat cramps

Acclimatized athletes and laborers often have heat cramps at the end of their workouts or during the postworkout recovery period. These painful muscle contractions result from fluid volume depletion caused by profuse sweating.

3. Heat exhaustion

This serious condition results from excessive loss of body water or electrolytes or, most commonly, both. Symptoms include cool, clammy skin, fatigue, nausea, vomiting, dizziness, and irritability. Clinically, heat exhaustion may be difficult to differentiate from heatstroke. However, in heat exhaustion, core temperature is usually less than 102.2°F and mental status is not seriously impaired.

4. Heatstroke

This is the least common, but most dangerous, environmental heat illness. The body's core temperature is greater than 105°F and central nervous system impairment causing delirium or coma are characteristic. High body temperatures damage almost every organ, including liver, kidneys, lungs, heart, and muscle. Signs of heatstroke include bright red dry skin, tachycardia, hypotension, and tachypnea.

FIRST RESPONDER, BASIC & BASIC-IV LIFE SUPPORT:
1. Assess and support ABCs.
2. Consider oral or nasal airway initially if GCS < 9.
3. Begin high flow supplemental oxygen via mask.
4. Assess vital signs (BP, pulse, respirations, O_2 sats) minimally every 10 minutes, more often if deemed unstable.
5. Expose patient to assist cooling. May move to a climate-controlled environment if possible.
6. Determine which type of heat related illness you are dealing with: (treatment is in addition to above)
   A. Heat Syncope
      1. Have patient rest and continuously reassure them.
      2. Monitor and treat for shock.

3. If patient is alert & oriented, have patient drink small amounts of cold water. Ingestion of a drink containing sodium and glucose are preferred.

B. Heat Cramps

1. Same as heat syncope.

C. Heat Exhaustion

1. Same as heat syncope plus:
2. Treatment of heat exhaustion consists of gradual rehydration in a cool environment.
3. In mild cases, oral rehydration with water or a drink containing glucose and sodium is preferred. *All carbonated beverages should be avoided!*
4. *(EMT-B IV & up only)* Initiate IV of NS. Initiate 250cc bolus then set to TKO.

D. Heat Stroke

1. Rapidly cool patient by placing cold packs under armpits or in groin area.
2. Consider misting with water while running fans to facilitate evaporative cooling.
3. Once cooling is initiated, further treatment is supportive.
4. Continuous monitoring of core temperature, respiratory, and cardiovascular function. As the temperature falls, close monitoring is required to prevent over correction that leads to shivering.
5. If shivering develops, cease cooling measures.
6. Initiate cardiac monitoring.
7. *(EMT-B IV & up only)* Establish IV of NS set to TKO.

INTERMEDIATE & PARAMEDIC/RN:

1. Monitor ECG for abnormalities and treat as appropriate.

PEDIATRIC CONSIDERATIONS:

1. Same as adult except IV fluid bolus is 20ml/kg then reassess.

SPECIAL NOTES:

1. Cooling of a patient must be done appropriately. Cooling a body too fast or too slow could cause further harm to the body. Core temperatures must be monitored closely.
2. Contact medical control if there are any further questions.

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