Recognition and Treatment of Dehydration: A Case Review of Two Exertional Heat Illnesses in Various Populations

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ABSTRACT

Dehydration is classified as a 1-2% change in body-mass due to fluid loss either via sweat or urination. However, a small decrease of body fluids may not be harmful after a single day, the collective effects of a 1% fluid loss per day over multiple days highly increases the risks of heat illness and decreases physical performance. Individuals typically only replace 50% of lost fluids during physical activity. Dehydration and other heat related illnesses may have detrimental outcomes. Being educated on preventative measures, early recognition of a problematic scenario and ways to react if an emergency were to arise can save lives. The purpose of reviewing the two separate cases is to demonstrate how dehydration can affect everyone, how it can appear differently in individuals and how it may lead to life threatening situations.

PATIENT 'A' DEMOGRAPHICS

- 14 year old male
- 5'1", 100lbs
- Middle school 5km cross-country runner
- No previous medical history

PATIENT 'B' DEMOGRAPHICS

- 56 year old male
- 6'3", 275lbs
- Softball umpire
- History: testicular cancer, kidney excision
- Current conditions: diabetes, infection and edema in lower leg.

CLINICAL PRESENTATION

- Increased thirst
- Dry mouth and swollen tongue
- Weakness
- Dizziness
- Palpitations (feeling that the heart is jumping or pounding)
- Confusion
- Sluggishness fainting
- Fainting
- Inability to sweat
- Decreased urine output

DIFFERENTIAL DIAGNOSIS

- Exercise associated muscle (heat) cramps
- Heat snycope
- Exercise (heat) exhaustion
- Exertional heat stroke
- Hyponatremia

TREATMENT

- Remove from direct sunlight
- Lower core temperature
- Replenish fluids
  - Drinking water, electrolytes, carbohydrates
  - Intravenous fluid return
- Disposition determines length of treatment

CONCLUSION

Patients responded well to treatment as evidenced by re-association with current environment and vital sign stabilization; however, RTP was suspended until 24 hours later to ensure the patients established euhydration status. Being dehydrated prior to physical activity exacerbates the rate for heat illness to occur in all populations and increases the risk for medical emergencies.