Fever in the Adult Patient

Summary from Rosen's By Ben Cooper

Epidemiology

- Generally self-limited in younger adults with mortality < 1%
- 70-90% of those > 65 are hospitalized, 7-9% mortality within one month

Pathophysiology

- PGE2 mediated via cytokines (IL-1, IL-6, TNF, interferon) in the hypothalamus (antipyretics inhibit PGE synthesis)

Differential Diagnosis

- The vast majority of serious causes are infectious in origin. Immediate threats to life such as septic shock, meningitis, or peritonitis should be treated empirically.

- Noninfectious Causes
  - Critical Diagnoses
    - Acute Myocardial Infarction
    - Pulmonary Embolism
    - Intracranial Hemorrhage
    - Cerebrovascular Event
    - Neuroleptic-Malignant Syndrome
    - Thyroid Storm
    - Acute Adrenal Insufficiency
    - Transfusion Reaction
    - Pulmonary Edema
  - Emergent Diagnoses
    - Congestive Heart Failure
    - Dehydration
    - Recent Seizure
    - Transplant Rejection
    - Pancreatitis
    - Deep vein thrombosis
  - Nonemergent Diagnoses
    - Drug Fever
    - Malignancy
    - Gout
    - Autoimmune Diseases

Signs and Symptoms

- In the ED, rectal and bladder temperature are most practical and accurate. Rectal temperatures are typically 1C higher than oral temperatures
- Inconsistently, fever may be associated with tachycardia by an increase of 10 for each 0.55C (1F)
- Bradycardia may be associated with beta-blockers, drug-related fever, brucellosis, leptospirosis, rheumatic fever, Lyme disease, viral myocarditis, endocarditis

Work-up

- Guided by physical exam
- Two most useful tests, especially in elder patients, are urinalysis and chest radiography
- Consider cultures ONLY if admitting
- Cerebrospinal fluid analysis when mental status changes, headache, or meningismus are present
- Thyroid function tests when thyroid storm is suspected
- Arterial or venous gas studies (arterial rarely provides information beyond what venous can provide)
- CT can be helpful for presumed intra-abdominal sources
- Ultrasound for potential cholecystitis

Empiric Management

- >41C requires prompt treatment with antipyretics and possibly external cooling measures
- No evidence for improved outcome by use of antipyretics, may make patient feel better though
- Early recognition, fluids, and antibiotics for suspected sepsis

Disposition

- Outpatient treatment for localized bacterial infections in young, otherwise healthy patients
- Admission often necessary for older patients with chronic illness
- Admit neutropenic patients, and those with unstable vital signs or life-threatening infections