# Physiological Monitoring

## Assessment and Management of Pyrexia in Acute Stroke Patients

Pyrexia is a frequent complication in up to 50% of patients with acute ischemic stroke and is associated with a poor outcome\(^1\)

The European Stroke Organisation 2015\(^2\) guideline did not make any recommendation for treating patients with acute ischemic stroke and pyrexia as a means of improving functional outcome and/or survival, but this does not preclude giving antipyretics to relieve the symptom of discomfort associated with pyrexia.

### Common Causes of Pyrexia in Stroke Patients

#### Infection
- Pneumonia (aspiration or hypostatic)
- Urinary tract infection; cystitis or pyelonephritis especially in catheterised patients.
  - Urinary catheters should be avoided whenever possible in stroke patients.
- Skin infections; especially drip site and pressure areas.
- Endocarditis, an infrequent but important cause of stroke.
- Biliary tract infection.

#### Important non-infective causes
- Bleeding into subarachnoid space or hypothalamus.
- Venous thrombosis especially deep venous thrombosis or pulmonary embolism
- Inflammatory processes e.g. Giant Cell Arteritis, Polyarthritis, SLE
- Drug fevers particularly with Beta-lactam antibiotics.
- Cancer-related: Lymphoma, Leukaemia and some solid tumours e.g. Renal Cell Carcinoma.
Assessment and Management of Pyrexia in Acute Stroke Patients

Fever is defined as a temperature >37.2 measured tympanically or in the axilla and >37.7 measured by mouth. Younger patients may run slightly higher baseline temperatures. In older frailer patients a temperature of 37.2 may still represent a fever.

Managing Pyrexia
The priority in managing pyrexia is to first reduce the temperature and then to identify and treat the cause.

Antipyretics

- Paracetamol 1g* should be given immediately and repeated 4-6 hourly (maximum 4g in 24 hours).
  - *Weight based dosing is required in low weight patients.
- Paracetamol can be administered enterally (in tablet, Suspension or dispersible form), rectally or intravenously.
- Other anti-inflammatory drugs (e.g. Ibuprofen) also have an antipyretic effect and are available as suspensions.
- There is some evidence that the use of combined antipyretics is more effective than Paracetamol alone.
- The use of prophylactic Paracetamol has not been found effective in improving stroke outcome.

Other methods

- Where antipyretics are ineffective or where the pyrexia is severe other methods such as cooled intravenous fluids or external cooling (e.g. tepid sponging, cooling devices) may be considered.
- There is no robust evidence yet for induced hypothermia.