

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 outcome¹

The European Stroke Organisation 2015² 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.

Approved by: National Stroke Programme and Working Group including National Clinical Lead for Stroke Prof. Joe Harbison and Clinical Advisory Group Stroke

Approval Date: October 2016

Review Date: October 2018

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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.

1. Drury P, Levi C, McInnes E et al. Management of fever, hyperglycaemia and swallowing dysfunction following hospital admission for acute stroke in New South Wales, Australia. *Int J Stroke* 2014; 9:23–31.

2. George Ntaios, Tomasz Dziedzic, Patrik Michel, Vasileios Papavasileiou, Jesper Petersson, Dimitre Staykov, Brenda Thomas and Thorsten Steiner for the European Stroke Organisation 2015 European Stroke Organisation (ESO) Guidelines for the management of temperature in patients with acute ischemic stroke.

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