MEDICAL EMERGENCIES WITHIN THE DENTAL PRACTICE

ADRENAL INSUFFICIENCY

DEFINITION A deterioration or collapse following the withdrawal of long term administration of oral corticosteroids.

This condition can occur in a person with Addison's disease, and patients suffering from this condition are usually well aware of it and take regular replacement drug therapy to compensate for the deficit in hormones it produces. During prolonged therapy with corticosteroids, adrenal atrophy develops and can persist for years after stopping, and abrupt withdrawal after a prolonged period can lead to acute adrenal insufficiency.

Collapse due to adrenal insufficiency is a rare emergency within the dental practice.

The stimulus for the secretion of the glucocorticoid hormones (e.g. cortisol) is falling blood levels. When these levels fall to a certain degree the pituitary gland produces a hormone, adrenocorticotrophic hormone (ACTH), which stimulates the adrenal cortex to produce more cortisol. If the body is under stress the pituitary gland produces more ACTH resulting in an even higher increase in the production of cortisol. As the control of this production responds directly to the levels of cortisol, a person taking synthetic steroids for another condition (e.g. prednisolone taken for arthritis) will already have a level that is higher than average, so the body will produce less of its own steroids. The result of this may mean that the body will begin to lose the ability to produce natural cortisol and cannot respond when higher levels are required.

POSSIBLE SIGNS AND SYMPTOMS

Pallor

Rapid, weak pulse

Hypotension (drop in blood pressure)

Loss of consciousness

MANAGEMENT

The management in the dental surgery is limited to the provision of high-flow oxygen via a non-rebreathing mask and monitoring ABCDE (airway, breathing, circulation, disability, exposure). The casualty must be laid flat if possible and the legs elevated to help compensate for the hypotension (drop in blood pressure). If unconscious, the airway is of prime importance whilst the patient is laid on their back. An oropharyngeal airway may be the best way to maintain an open airway whilst the patient is laid flat, otherwise it will be best to place the casualty into the recovery position. Be prepared to start CPR if necessary. The emergency services must be called, as the patient will need to be transferred to hospital as soon as possible.

PREVENTION

Routine enquiry about the current or recent use of corticosteroids as part of the medical history prior to dental treatment should alert staff to the patient at risk from this condition. Patients who are on long-term corticosteroid treatment should carry a **Steroid Treatment Card** which gives guidance on minimising risk and provides details of prescriber, drug given, dosage and duration of treatment.
Acute adrenal insufficiency can often be prevented by the administration of an increased dose of corticosteroid prior to treatment. Dental treatment that requires an increased steroid dose is that which may cause significant physiological stress. Usually simple dental extractions and restorative procedures, including endodontics, are not cause for concern, but surgical extractions, implant placements or treatment performed under general anaesthesia should be considered as a risk. Patients who are systemically unwell from a dentally related infection are also recommended to have a prophylactic increase in steroid dose in addition to any surgical and antimicrobial treatment indicated.
Currently it is not a requirement for dental surgeries to carry hydrocortisone within the emergency drug kit, so any increase in steroid dose would be done under the supervision of the patient's medical practitioner and not the dentist.

Guidance on the management of those patients with known Addison's disease is available from the Addison's Clinical Advisory Panel www.addisons.org.uk

Wendy Berridge delivers CPR, Medical Emergencies and AED training to dental practices throughout Yorkshire and Lincolnshire.

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