Dental implications

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Basic tests of respiratory function (page 10)

Respiratory function can be affected during dental treatment. Dentists need to be aware if their patients have any respiratory conditions especially as most treatment takes place in the airway. Medication used for treatment of chronic obstructive respiratory disease should be considered when planning dental treatment. Some drugs used in dentistry, sedatives, narcotics and large doses (taking into consideration patients' age and physical status) of local anaesthetics are capable of producing transient respiratory depression.

Patients with a history of asthma may have an acute episode during treatment. A pre-operative assessment should consider the treatment needed if an attack occurs. Patients are usually well informed about emergency treatment and often carry an inhaler prescribed for such an emergency.

An increasing number of dental surgeries are equipped with oxygen and oximeters. The stress of treatment on patients with chronic obstructive pulmonary disease can be reduced with supplemental oxygen. These patients need to be placed in a position of comfort, without being too far reclined. A nasal mask or canula delivering 2–3 litres of oxygen per minute readily increases peripheral oxygen saturation to above 96%, providing improved physiological conditions for dental anaesthesia and improved patient comfort during the procedure. It can be shown that an additional supplement of one litre per minute of nitrous oxide (a mixture of 75–80% oxygen) improves physiological function and in particular heart rhythm, should minor irregularities in rhythm be present.

Unless there is a specific contraindication, adrenaline or other catecholamine vasoconstrictors can be used in dental local anaesthetics. Respiratory disease itself is not a contraindication to the use of catecholamine vasoconstrictors.

If there is any doubt concerning treatment of these patients, the physician managing their pulmonary condition should be consulted and treatment jointly managed.

New drugs

Some of the views expressed in the following notes on newly approved products should be regarded as tentative, as there may have been little experience in Australia of their safety or efficacy. However, the Editorial Board believes that comments made in good faith at an early stage may still be of value. As a result of fuller experience, initial comments may need to be modified. The Board is prepared to do this. Before new drugs are prescribed, the Board believes it is important that full information is obtained either from the manufacturer's approved product information, a drug information centre or some other appropriate source.

Daclizumab

Zenapax (Roche)

vials containing 25 mg/5 mL

Approved indication: renal transplant

Australian Medicines Handbook Section 14

Despite advances in immunosuppression, acute rejection remains a major problem for patients receiving a kidney transplant. The chances of a successful transplant may be increased by interfering with cellular immunity. Monoclonal antibodies such as basiliximab (see 'New drugs' Aust Prescr 1999;22:95) and daclizumab inhibit the proliferation of T lymphocytes by binding to the interleukin-2 receptor on these cells.

Daclizumab is infused before surgery. The dose is then repeated every two weeks for a total of five doses with the aim of saturating the receptors. The half-life of daclizumab is 20 days, resembling that of IgG.

In one trial, 126 patients given daclizumab were compared with 134 who received an intravenous placebo. Both groups were also given cyclosporin, azathioprine and prednisone. Acute rejection occurred in 35% of the patients given a placebo, but in only 22% of patients given daclizumab. After a year, the graft survival was 90% in the placebo group and 95% in the daclizumab group.[1]

The toxicity of the other immunosuppressive drugs is not increased by daclizumab. Treatment did not cause significantly more adverse effects than placebo.[1]

While daclizumab reduces the incidence of acute rejection its long-term effectiveness requires further study. Although 90% of the daclizumab molecule contains a human antibody sequence this does not appear to make it significantly superior to basiliximab.

REFERENCE

1. Daclizumab triple therapy study group. Interleukin-2-receptor blockade with daclizumab to prevent acute rejection in renal transplantation. N Engl J Med 1998;338:161-5.