Canterbury District Health Board
Te Poari Hauora ō Waitaha

Clinical Pharmacology Bulletin

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MANAGING MEDICINES PERI-OPERATIVELY

As a general principle, the majority of drugs should be continued throughout the perioperative period as withholding medications may result in a worsening of disease, withdrawal reactions and destabilisation. Discontinuation is rarely recommended and a risk benefit assessment should be carried out during pre-admission visits.

In October 2002 guidelines regarding peri-operative medications management for adult elective patients were issued by the departments of Anaesthesia, Pharmacy and Clinical Pharmacology at Christchurch Hospital. These have now been reviewed and and will be re-issued to wards and pre-admission clinics and put on the Clinical Pharmacology intranet website (Clinical info, Clinical Pharmacology). The following is a brief overview of part of these guidelines.

CARDIOVASCULAR DRUGS

In general, these **should be continued** peri-operatively. Acute withdrawal syndromes can occur with sudden cessation of many cardiovascular medications, including beta-blockers, calcium channel antagonists, nitrates, α_2-antagonists and methyldopa.

- **Beta-blockers** eg metoprolol, atenolol **must be continued** peri-operatively as they have a protective effect against peri-operative myocardial events in at risk patients. Acute withdrawal can precipitate rebound ischaemia and myocardial infarction. Oral formulations should be substituted with parenteral eg iv metoprolol if the oral route is unavailable. Post-operatively the patient should be carefully monitored. A separate beta-blocker perioperative policy is currently being compiled.
- **Anti-arrhythmics** eg amiodarone **should be continued** peri-operatively to decrease the risk of recurrence of the underlying rhythm disturbance(s).
- **ACE-inhibitors** eg captopril, enalapril **should be continued** peri-operatively (although no clear evidence for either stopping or continuing). They may increase the risk of hypotension at induction of anaesthesia and cause poor tolerance of hypovolaemia.
- **Diuretics** eg frusemide are **usually omitted immediately pre-operatively** as a diuresis at this time can be inconvenient and, if potassium-sparing eg spironolactone, the risk of hyperkalaemia may be increased.

CENTRAL NERVOUS SYSTEM DRUGS

Antidepressants

- **Selective Serotonin Reuptake Inhibitors (SSRI's)** eg paroxetine, fluoxetine **should be continued** perioperatively as withdrawal syndromes may occur (although withdrawal symptoms unlikely with fluoxetine). NB interactions with other serotonergic drugs eg tramadol, pethidine may result in serotonin syndrome. In addition SSRI's have been associated with an increased risk of bleeding.
- **Monoamine Oxidase Inhibitors (MAOI's)** Irreversible MAOI's eg phenelzine, tranylcypromine **should be stopped 2 weeks before surgery** in consultation with a psychiatrist and substituted with a reversible MAOI eg moclobemide which can then be continued peri-operatively. Irreversible MAOIs can produce potentially fatal interactions with drugs used during anaesthesia eg ephedrine, pethidine.
- **Tricyclic antidepressants** eg amitriptyline, nortriptyline **should be continued** peri-operatively.

Other CNS drugs

- **Lithium should be stopped 24 hours before major surgery**, **but continued for minor surgery** (with careful monitoring of fluids and electrolytes). Restart as soon as possible post-operatively, provided serum electrolytes and renal function are normal.
- **Anticonvulsants, antipsychotics, anxiolytics, anti-Parkinsonian drugs should be continued.**

DRUGS THAT AFFECT THE COAGULATION SYSTEM

Some drugs may affect platelet function and their continued use perioperatively may lead to bleeding problems eg SSRIs.

- Guidelines for surgical patients receiving **warfarin** therapy can be found in The Clinical Haematology Department's "Red Book" and the "Blue Book".
- **Low dose aspirin** should be **stopped at least 4 days prior to surgery** as aspirin's effect lasts for the lifetime of the platelet (five to seven days) unless the patients is at high risk of peri-operative myocardial or neurological thrombotic events. The **need to continue** aspirin should be discussed with a Cardiologist, Neurologist or Anaesthetist.
- **Standard Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)** eg diclofenac, naproxen **should be stopped the day before surgery** (3 days pre-op for NSAIDs with long half lives eg piroxicam, sulindac) as peri-operative hypovolaemia and the stress response to surgery predispose patients to their adverse effects and because standard NSAIDs affect bleeding time. **COX-2 selective inhibitor NSAIDs** eg celecoxib **should be stopped as for the standard NSAIDs**. Their true place in therapy is currently being re-evaluated following the withdrawal of rofecoxib due to an increased risk of MI and stroke suggesting a prothrombotic effect. These drugs may be prescribed peri-operatively as analgesics by anaesthetists.

POST-OPERATIVE MEDICATION

Post-operatively patients may be unable to take drugs orally. Continuation may require administration by a different route, or an alternative agent with a similar action eg beta-blocker. Attention must be paid to the dose on a change of route and equivalence of alternative agents. Advice on alternative routes/agents can be obtained from your clinical pharmacist or Drug Information (Ext 80900).