RE: GUIDANCE FOR THE USE OF INTRAVENOUS PARACETAMOL IN WA PUBLIC HOSPITALS

WATAG recommends that intravenous (IV) paracetamol be limited to the management of mild to moderate pain in clinical situations where oral paracetamol cannot be administered and paracetamol is considered preferable to alternative analgesic agents. Generally, paracetamol is an effective relatively safe option as an opioid-sparing agent for the treatment of mild to moderate pain.

Background
Data on the use of intravenous paracetamol in WA public hospitals suggests that inappropriate use may be occurring. Inappropriate use of IV paracetamol is associated with clinical safety and quality risks and produces excessive expenditure for little or no clinical benefit.

In the 12 months to June 2012, WA hospital expenditure on IV paracetamol was over $1 million. To minimise inappropriate use, WATAG recommends that hospitals review their local restrictions and that prescribers review their practice using the following guidelines.

Indications and guidelines for use of intravenous paracetamol
- For pain relief in “Nil by Mouth” patients;
- Not recommended for the treatment of fever in adults;
- Not recommended solely for the purpose of rapid onset of action;
- Pre-operative fasting does not warrant use of IV paracetamol. Unless otherwise directed by an anaesthetist, patients can be given routine oral medications at least 60 minutes pre-operatively with small amounts of water - despite “Nil by Mouth” or “Fasting” status.

Safety and Quality Considerations
- Oral paracetamol should be used in preference to intravenous paracetamol wherever possible;
- Paracetamol prescriptions should be clearly charted according to the WA NIMC Guidelines or local hospital approved policy to avoid ambiguity about the route of prescribing and administration for each dose of paracetamol;
- To avoid overdosing, co-administration of paracetamol via different routes should not occur during any dosing interval;
- Use of paracetamol suppositories is generally not recommended due to poor absorption and variable bioavailability;
- No more than 4 grams of IV paracetamol should be given in a 24 hour period, with at least 4 hours between doses of 1 gram (i.e. maximum daily dose for adults is 4 grams in 24 hours);
- Care must be taken in patients with hepatic impairment or with a low body weight. Malnutrition, starvation, chronic alcohol abuse and concomitant drugs that induce cytochrome P450 enzymes increase the risk of
hepatotoxicity induced by paracetamol. A reduced dose of 2 grams in 24 hours is recommended for adult patients weighing less than 50 kg.

- Intravenous paracetamol is NOT recommended for children less than 6 months and/or less than 5 kg unless under specialist review. The maximum dose for children over 12 months of age (but less than 50 kg) is 60 mg/kg/day;
- Stop IV paracetamol and switch to oral paracetamol administration as soon as clinically appropriate. Review IV paracetamol use at least daily;
- Imprest stock of intravenous paracetamol should be restricted to approved areas (eg Operating Theatres) and not routinely stocked on general medical wards;
- Intravenous paracetamol has limited benefit for patients in the Emergency Department where oral paracetamol is tolerated. If required, it should be restricted to the prescription by senior registrars or consultants.

Relative costs of paracetamol according to administration mode

<table>
<thead>
<tr>
<th>Route of paracetamol</th>
<th>Cost per 1 gram dose*</th>
<th>Daily cost of 4 grams*</th>
</tr>
</thead>
<tbody>
<tr>
<td>intravenous</td>
<td>$3.94</td>
<td>$15.75</td>
</tr>
<tr>
<td>oral</td>
<td>$0.02</td>
<td>$0.08</td>
</tr>
<tr>
<td>suppositories</td>
<td>$1.47</td>
<td>$5.86</td>
</tr>
<tr>
<td>liquid solution</td>
<td>$0.18</td>
<td>$0.71</td>
</tr>
</tbody>
</table>

* Costs correct at November 2012, but may vary from site to site.

Signed by:
Prof Gary Geelhoed

Chairman, WATAG

1 For medications simultaneously prescribed in intravenous and oral formulations, strategies to minimise intravenous/oral dosing errors might include,
- Where possible, prescribing the short-term intravenous form in the PRN or single dose sections of the medication chart (NIMC), and prescribing the oral form in the regular medication section of the NIMC;
- Where multiple routes of a medication are prescribed, nursing staff should clearly indicate the chosen route of administration on the NIMC for all regular and PRN orders;
- Clearly recording on the NIMC when the intravenous form has been ceased.