Isoprenaline (isoproterenol) is a sympathomimetic that acts almost exclusively on beta-adrenergic receptors. It is listed in the 2004 WHO Model List of Essential Medicines to be used in rare disorders or exceptional circumstances as a complementary antiarrhythmic for the treatment of patients with severe bradycardia that is unresponsive to atropine; for the short-term emergency treatment of heart block; and for ventricular arrhythmias secondary to atrioventricular nodal block. Pharmacological alternatives include atropine, and, for Torsades de Pointes, magnesium sulfate. Cardiac pacing is an option for the treatment of patients with bradyarrhythmias or Torsades de Pointes.

Product and Dosage
Isoprenaline is available as an injection containing isoprenaline hydrochloride 20mcg/mL (1 - 3ml). The Formulary recommends isoprenaline for the treatment of adults with: bradyarrhythmias, for which it is administered by intravenous infusion at a dose of 1-4mcg/minute; for the treatment of adults with other cardiac disorders, administered by slow intravenous injection at a dose of 20 – 60 mcg adjusted according to ventricular rate; and for adults with heart block (acute Stokes-Adams attack), administered by intravenous infusion at a dose of 4-8 mcg/minute.

Evidence of value
In one randomised, open-label study involving 79 patients with out-of-hospital cardiac arrest, the addition of isoprenaline (200mcg every 3 to 5 minutes up to a maximum of 600mcg) to advanced cardiac life support procedures (including epinephrine and atropine) did not increase rates of recovery of cardiac function and spontaneous circulation, short-term survival or long-term survival. No other published randomised, controlled-trials have examined the effect of isoprenaline in the management of patients with cardiac arrhythmias.

National guidelines do not include isoprenaline as an option in resuscitation following cardiac arrest. The use of isoprenaline for the short-term management of Torsades de Points has been superseded by magnesium sulfate and cardiac pacing.

Recommendation
There is no published evidence to support the inclusion of isoprenaline hydrochloride in the WHO Model List of Essential Medicines. Cardiac pacing and other drug therapies provide effective, safer alternatives.

Paul McManus, Drug and Therapeutics Bulletin, London, UK
(October 2004)
Search Strategy

The following sources of published literature were searched to identify primary and secondary literature and guidelines relating to the use of colchicine in the management of gout.

<table>
<thead>
<tr>
<th>Resource</th>
<th>Date accessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRIPdatabase <a href="http://www.tripdatabase.com">www.tripdatabase.com</a> (coverage detailed in Annexe A)</td>
<td>30 July 2004</td>
</tr>
<tr>
<td>Guidelines International Network <a href="http://www.g-i-n.net">www.g-i-n.net</a></td>
<td>30 July 2004</td>
</tr>
<tr>
<td>The Medical Letter <a href="http://www.medletter.com">www.medletter.com</a></td>
<td>30 July 2004</td>
</tr>
<tr>
<td>Therapeutics Initiative <a href="http://www.ti.ubc.ca">www.ti.ubc.ca</a></td>
<td>30 July 2004</td>
</tr>
</tbody>
</table>
Annex A

Publications covered by TRIP database

Agency for Healthcare Research and Quality [AHRQ]
ASERNIP-S [ASERNIP-S]
Bandolier [BAND]
Bandolier Extra
BestBETS
CATs - Birmingham Women’s Hospital
Clinical Evidence
Cochrane Database of Systematic Reviews [CDSR]
Critically Appraised Papers
DARE [DARE]
Effective Clinical Practice
Effective Health Care Bulletins [EHC]
Effectiveness Matters
Evidence-Based Medicine
Evidence-Based Mental Health
Evidence-Based Nursing
Evidence-Based On-Call
Evidence-Based Pediatrics [None]
Health Evidence Bulletins Wales [HEBW]
Health Technology Assessment (HTA) Database [HTAD]
Health Technology Assessment Programme [HTAP]
Hitting the Headlines
JFP Applied Evidence
Journal Club on the Web [JC]
MeReC
National Institute for Clinical Excellence - Interventional Procedures
National Institute for Clinical Excellence - Technology Appraisals [NICE]
Neurology CATs
NHS Economic Evaluation Database
NIH Consensus Statements [NIHcon]
NPC New Medicines
PedsCCM Evidence-Based Journal Club
ShEAFS
Swedish Council on Technology Assessement
The Joanna Briggs Institute
Therapeutics Letter
UK Medicines Information
ARIF [ARIF]

ATTRACT

Evidence Centre Reports
FPIN Clinical Inquiries
Heart Disease (NeLH VBL)
Signpost/Steer
SIGN

ANZSBT (Australia)
CMA Infobase (Canada)
European Society of Cardiology
Health Protection Agency (UK)
MJA Clinical Guidelines

National Guideline Clearinghouse (USA)
National Health and Medical Research Council (Australia)
National Institute for Clinical Excellence - Clinical Guidelines (UK)
New Zealand Guidelines Group

NHS Modernisation Agency (UK)

PRODIGY (UK)

Royal College of Anaesthetists (UK)
Royal College of General Practitioners (UK)
Royal College of Midwives (UK)
Royal College of Nursing (UK)
Royal College of Obstetricians and Gynaecologists (UK)
Royal College of Ophthalmologists (UK)
Royal College of Paediatrics and Child Health (UK)
Royal College of Pathologists (UK)
Royal College of Physicians (UK)
Royal College of Psychiatrists (UK)
Royal College of Radiologists (UK)
Royal College of Surgeons of England (UK)

SIGN (UK)

Special Interest

UK Guidelines (UK)
eMedicine.com

GPnotebook

National Cancer Institute

Yale Heart Book

Bristol Biomed Image Archive
DermAtlas