

Cambridge University Press

978-0-521-75715-7 - Handbook of Drugs in Intensive Care: An A-Z Guide, Fourth Edition

Henry G W Paw and Rob Shulman

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Handbook of Drugs in Intensive Care

Fourth edition

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This book is dedicated to Georgina Paw

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Handbook of
Drugs in Intensive Care
An A-Z Guide

Fourth edition

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INTRODUCTION

Since the publication of the 3rd edition in 2006, there have been several new drugs introduced to the critical care setting. This book has now been extensively updated. The main purpose of this book is to provide a practical guide that explains how to use drugs safely and effectively in a critical care setting. Doctors, nurses, pharmacists and other healthcare professionals caring for the critically ill patient will find it useful. It is not intended to list every conceivable complication and problem that can occur with a drug but to concentrate on those the clinician is likely to encounter. The book should be seen as complementary to, rather than replacing, the standard textbooks.

The book is composed of two main sections. The A–Z guide is the major part and is arranged alphabetically by the non-proprietary name of the drug. This format has made it easier for the user to find a particular drug when in a hurry. The discussion on an individual drug is restricted to its use in the critically ill adult patient. The second part comprises short notes on relevant intensive care topics. Inside the back cover is a colour fold-out chart showing drug compatibility for intravenous administration.

I am very fortunate to have on board a senior ICU pharmacist for this edition. While every effort has been made to check drug dosages based on a 70 kg adult and information about every drug, it is still possible that errors may have crept in. I would therefore ask readers to check the information if it seems incorrect. In addition, I would be pleased to hear from any readers with suggestions about how this book can be improved. Comments should be sent via e-mail to: henry.paw@york.nhs.uk.

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HOW TO USE THIS BOOK

European law (directive 92/27/EEC) requires the use of the Recommended International Non-proprietary Name (rINN) in place of the British Approved Name (BAN). For a small number of drugs these names are different. The Department of Health requires the use of BAN to cease and be replaced by rINN, with the exceptions of adrenaline and noradrenaline. For these two drugs both their BAN and rINN will continue to be used.

The format of this book was chosen to make it more 'user friendly' – allowing the information to be readily available to the reader in times of need. For each drug there is a brief introduction, followed by the following categories:

Uses

This is the indication for the drug's use in the critically ill. There will be some unlicensed use included and this will be indicated in brackets.

Contraindications

This includes conditions or circumstances in which the drug should not be used – the contraindications. For every drug, this includes known hypersensitivity to the particular drug or its constituents.

Administration

This includes the route and dosage for a 70 kg adult. For obese patients, estimated ideal body weight should be used in the calculation of the dosage (Appendix D). It also advises on dilutions and situations where dosage may have to be modified. To make up a dilution, the instruction 'made up to 50 ml with sodium chloride 0.9%' means that the final volume is 50 ml. In contrast, the instruction 'to dilute with 50 ml sodium chloride 0.9%' could result in a total volume >50 ml. It is recommended that no drug should be stored for >24 h after reconstitution or dilution.

How not to use . . .

Describes administration techniques or solutions for dilution which are not recommended.

Adverse effects

These are effects other than those desired.

Cautions

Warns of situations when the use of the drug is not contraindicated but needs to be carefully watched. This will include drug-drug interactions.

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Organ failure

Highlights any specific problems that may occur when using the drug in a particular organ failure.

Renal replacement therapy

Provides guidance on the effects of haemofiltration/dialysis on the handling of the drug. For some drugs, data are either limited or not available.

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[More information](#)**ABBREVIATIONS**

| | |
|-------------------|---|
| ACE-I | angiotensin-converting enzyme inhibitor |
| ACh | acetylcholine |
| ACT | activated clotting time |
| ADH | antidiuretic hormone |
| AF | atrial fibrillation |
| APTT | activated partial thromboplastin time |
| ARDS | acute respiratory distress syndrome |
| AUC | area under the curve |
| AV | atrioventricular |
| BP | blood pressure |
| CABG | coronary artery bypass graft |
| cAMP | cyclic AMP |
| CC | creatinine clearance |
| CMV | cytomegalovirus |
| CNS | central nervous system |
| CO | cardiac output |
| COPD | chronic obstructive pulmonary disease |
| CPR | cardiopulmonary resuscitation |
| CSF | cerebrospinal fluid |
| CT | computerised tomography |
| CVP | central venous pressure |
| CVVH | continuous veno-venous haemofiltration |
| CVVHD | continuous veno-venous haemodiafiltration |
| DI | diabetes insipidus |
| DIC | disseminated intravascular coagulation |
| DVT | deep vein thrombosis |
| EBV | Epstein-Barr virus |
| ECG | electrocardiogram |
| EEG | electroencephalogram |
| EMD | electromechanical dissociation |
| ETCO ₂ | end-tidal carbon dioxide concentration |
| FBC | full blood count |
| FFP | fresh frozen plasma |
| g | gram |
| GCS | Glasgow Coma Scale |
| GFR | glomerular filtration rate |
| GH | growth hormone |
| GI | gastrointestinal |
| h | hour |
| HOCM | hypertrophic obstructive cardiomyopathy |
| HR | heart rate |
| ICP | intracranial pressure |
| ICU | intensive care unit |
| IHD | ischaemic heart disease |
| IM | intramuscular |
| INR | international normalised ratio |

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| | |
|-------------------|--|
| IOP | intraocular pressure |
| IPPV | intermittent positive pressure ventilation |
| IV | intravenous |
| K ⁺ | potassium |
| kg | kilogram |
| l | litre |
| LFT | liver function test |
| LH | luteinising hormone |
| LMWH | low-molecular-weight heparin |
| MAOI | monoamine oxidase inhibitor |
| MAP | mean arterial pressure |
| M6G | morphine-6-glucuronide |
| mg | milligram |
| MH | malignant hyperthermia |
| MI | myocardial infarction |
| MIC | minimum inhibitory concentration |
| min | minute |
| ml | millilitre |
| MRSA | meticillin-resistant <i>Staphylococcus aureus</i> |
| NG | nasogastric route |
| ng | nanogram |
| NJ | nasojejunal |
| nocte | at night |
| NSAID | non-steroidal anti-inflammatory drug |
| PaCO ₂ | partial pressure of carbon dioxide in arterial blood |
| PaO ₂ | partial pressure of oxygen in arterial blood |
| PCAS | patient-controlled analgesia system |
| PCI | percutaneous coronary intervention |
| PCP | <i>Pneumocystis carinii</i> pneumonia |
| PCWP | pulmonary capillary wedge pressure |
| PD | peritoneal dialysis |
| PE | pulmonary embolism |
| PEA | pulseless electrical activity |
| PEG | percutaneous endoscopic gastrostomy |
| PEJ | percutaneous endoscopic jejunostomy |
| PO | <i>per orum</i> (by mouth) |
| PR | <i>per rectum</i> (rectal route) |
| PRN | <i>pro re nata</i> (as required) |
| PVC | polyvinyl chloride |
| PVD | peripheral vascular disease |
| RR | respiratory rate |
| s | second |
| SC | subcutaneous |
| SIRS | systemic inflammatory response syndrome |
| SL | sublingual |
| SSRI | selective serotonin re-uptake inhibitors |
| STEMI | ST-segment elevation myocardial infarction |
| SVR | systemic vascular resistance |

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ABBREVIATIONS

| | |
|--------------|--|
| SVT | supraventricular tachycardia |
| TFT | thyroid function test |
| TNF | tumour necrosis factor |
| TPN | total parenteral nutrition |
| U&E | urea and electrolytes |
| VF | ventricular fibrillation |
| VRE | vancomycin-resistant <i>Enterococcus faecium</i> |
| VT | ventricular tachycardia |
| WFI | water for injection |
| WPW syndrome | Wolff–Parkinson–White syndrome |

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