Drugs Handbook 1989-1990

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PREFACE

This revised edition contains new products introduced during the last year and has been fully revised to take account of withdrawals and revisions. We have considered taking account of the so-called limited list but think that it cannot be accomodated directly in this text in view of the number and frequency of the revisions to the list. For further information on this list the reader is referred to the relevant section in the Introduction.

June 1989

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INTRODUCTION

Patient care has now extended far beyond the patient–doctor relationship and involves several different highly trained health care professions, including amongst others nurses, midwives, occupational therapists, physiotherapists, radiographers, electro-encephalographers, dieticians, social workers, psychologists and medical secretaries. Although prescribing of medicines is the responsibility of a doctor, the drugs which medicines contain may influence patients in many ways, and it is important that others involved in a patient's health care should have ready access to information on the various medicines which he or she may receive, either by prescription or by over-the-counter purchase. The primary purpose of this book is to provide such information for these and other groups within the health professions. It is not a textbook of clinical pharmacology or medical treatment nor is it intended to be: rather it is meant to be a short guide to the mechanism of action, therapeutic indications and chief unwanted effects of most medicines available in the United Kingdom.

Drugs and Medicines

A doctor usually prescribes a *drug*, but the patient receives a *medicine*. The medicine is the whole formulation in which the drug, that is the active substance, is combined with other ingredients to form a convenient form of administration, such as a tablet, capsule, suppository, inhalation, ointment or injection. We have not included all constituents of the medicines listed in this book, but have mentioned only those substances which we believe may contribute to the therapeutic or adverse effects of the medicine involved. It must be stressed that the mention of a medicine in this book, and statements about its indications, do not imply that it is necessarily an effective treatment, or that the authors believe it to be such; in fact we believe that for large numbers of drugs there is no good evidence of their effectiveness.

Names of Drugs

Most drugs have at least three names. The first is the full chemical name, which is too long and complicated to use regularly. More convenient is the shorter *generic* or *approved* name, which may become accepted internationally. Finally, there is the *brand* or *trade* name, given by the pharmaceutical manufacturer for its own particular brand or formulation. For example, 4-amino-5-chloro-*N*-(2-diethylaminoethyl)-2-methoxybenzamide hydrochloride is the chemical name for metoclopramide hydrochloride, the approved name of the drug marketed at present by at least two drug firms under the brand names Maxolon and Primperan. We have distinguished between approved and brand names by compiling two separate alphabetical lists. The main body of the book is devoted to approved names, with a brand name index at the end, and to save space and avoid duplication of

information almost all the brand names have been cross-referenced to the appropriate approved names. Also in the interests of saving space, where a number of drugs have essentially similar effects we have cross-referenced approved names to those which we consider to be the most typical and most frequently prescribed. Thus all cross-references refer to the list of approved names, and are shown in bold type, for example, **Amethocaine**.

Drugs in Pregnancy

Several drugs are known to be hazardous to the developing foetus and for most drugs there is no definite information on their safety in pregnancy. We have avoided constant repetition of this but would stress that in pregnancy all drugs should be used with caution and only when essential.

Drug Combinations

Many of the preparations listed in this book are combinations of drugs rather than individual ones. The majority are rather crude attempts at what might be called 'blunderbuss treatment' of a variety of signs and symptoms, but some have been developed on scientific grounds to exploit the interaction of two or more drugs working together. Others, by combining drugs that are commonly used together, offer, if correctly used, a means of simplifying treatment for patients on long-term multiple drugs and thus improve compliance, for example, combination drugs for hypertension. Attempts have been made to coin suitable names for such combinations, for example co-trimazine, co-trimoxazole, but this has not proved generally possible and so it is becoming accepted practice to prescribe such preparations, like most other combination products, by their trade names.

Limited List

In 1985 the government issued a 'black list' of drugs and preparations that cannot be prescribed or dispensed under the NHS but only on private prescriptions, the patient having to pay for them in full. These restrictions on prescribing and dispensing at the public expense are at present limited to the following therapeutic groups:

- Antacids
- Laxatives
- Analgesics used for mild or moderate pain
- Cough and cold remedies, which include cough suppressants, expectorants, mucolytics, inhalations, and nasal decongestants
- Tonics
- Vitamins
- Benzodiazepine tranquillizers, sedatives and hypnotics

An advisory committee has been set up to advise the DHSS on changes that should be made in the list. Doctors and pharmacists are able to recognize

which drugs and medicines cannot be prescribed under the NHS by a symbol published against their names in the *British National Formulary*.

Technical Terms, Further Information

This book has not been written for the general public, and it assumes a basic knowledge and understanding of human biology and disease. Many readers may, nevertheless, wish to refer to larger books for more complete and detailed information, and we would recommend:

1. For information on drugs:
   Turner, P., Richens, A. and Routledge, P. *Clinical Pharmacology*. 5th Edition, 1986. Churchill–Livingstone, London.
   Laurence, D. R. and Bennett, P. N. *Clinical Pharmacology*. 6th Edition. 1987. Churchill–Livingstone, London.
   Goodman, L. S. and Gilman, A. (Eds.) *The Pharmacological Basis of Therapeutics*. 7th Edition, 1985. Baillière Tindall, London.
   Reynolds, J. E. F. (Ed.) Martindale: *The Extra Pharmocopoeia*. 29th Edition, 1982. Pharmaceutical Press, London.
2. For information on diseases and their management:
   Houston, J. C., Joiner, C. L. and Trounce, J. R., Rees, P. J. *A New Short Textbook of Medicine*. 1988. Edward Arnolds, London.
   Kumas, P. J., Clark, M. L. (Ed.) *Clinical Medicine*, 1987, Baillière Tindall, London.
3. For information on treatment of poisoning:
   Henry, J. and Volans, G. *ABC of Poisoning. Part I: Drugs*. 1984 British Medical Journal, London.

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ABBREVIATIONS

The following abbreviations have been used throughout the book:

(b) indicates a borderline substance, that is a substance which may only be prescribed as a drug under certain conditions.

(c) indicates a drug whose prescription is controlled under the Misuse of Drugs Act.

(d) discontinued by the manufacturers during the year prior to publication. As supplies will still be available from pharmacies until stocks run out, these products have not yet been deleted from our lists.

CNS Central nervous system.

DEFINITIONS OF DRUG GROUP NAMES AND MEDICAL TERMS

abortifacient Used to produce abortion.

adjuvant Something added to a drug which aids or modifies the main ingredient.

adrenergic Has similar actions to adrenaline.

adrenoceptor Receptor for **Adrenaline, Noradrenaline,** which mediates sympathetic activity in the body.

adsorbent Material which binds drugs and other chemicals and prevents or reduces their absorption.

agonist Has an observable effect within the body, resulting from a direct action upon a specific receptor.

alpha-adrenoceptor Subgroup of adrenoceptors that mediates some of the effects of sympathetic stimulation including vasoconstriction, increase in blood pressure and mydriasis.

aminoglycoside Drug with a chemical structure related to **Streptomycin**.

anabolic Stimulates cell metabolism causing increased tissue growth.

analgesic Relieves pain.

anorectic Appetite suppressant used in obesity.

antacid Neutralizes acid produced by the stomach.

antagonist Opposes the action or blocks the effect of another drug.

antiarrhythmic Suppresses arrhythmias.

anticholinergic Blocks the action of **Acetylcholine** or cholinergic (acetylcholine-like) drugs.

anticholinesterase Blocks the action of cholinesterase–a naturally occurring enzyme which breaks down **Acetylcholine** bringing its action to an end. The effect of the anticholinesterase is therefore to prolong and intensify the action of acetylcholine.

anticoagulant Prevents blood from clotting.

anticonvulsant Stops or prevents epileptic seizures.

antidysrhythmic *See* antiarrhythmic.

antiemetic Prevents nausea and vomiting.

antihypertensive Lowers blood pressure.

antipyretic Lowers body temperature in febrile conditions.

antiserotonin Blocks the action of serotonin.

antispasmodic Relieves spasm of muscles, for example, in the gastro-intestinal tract (gastro-intestinal colic).

antitussive Suppresses cough.

anxiolytic Reduces anxiety.

arrhythmia Disorder of rhythm, generally of the heart.

astringent Precipitates protein to form a protective layer over damaged skin or mucous membranes.

bactericidal Kills bacteria.

bacteriostatic Inhibits growth of bacteria but does not kill them.

benzodiazepines A group of chemically related hypnotics, sedatives, anxiolytics and anticonvulsants including **Diazepam**.

beta-adrenoceptor Subgroup of adrenoceptors that mediates some of the effects of sympathetic stimulation including increase in heart rate and force, and bronchodilation.

bioavailability Extent to which and rate at which the active substance in a drug is taken up by the body in a form that is physiologically active.

bradycardia Slow heart rate.

bronchodilator Increases the diameter of the airways in the respiratory system and thus reduces the physical resistance to breathing.

buffer Solution that opposes changes in acidity or alkalinity.

cardioselective Acts on the heart without the other effects usually found in drugs of a particular group, for example beta-adrenoceptor blocking drugs. In practice, the cardioselectivity is usually relative and the other effects can be traced, although in a less pronounced form.

carminative Facilitates the eructation of gas from the stomach.

cathartic Relieves constipation.

chelating agents Bind heavy metals to increase their excretion.

cholinergic Has actions similar to **Acetylcholine**.

corticosteroids Hormones (natural or synthetic) with actions on metabolism and against tissue inflammation. The natural hormones are produced by the adrenal gland.

cycloplegic Paralyzes muscle of the eye controlling accommodation. Leads to blurred vision.

cytotoxic Has toxic effects upon living cells which reduce growth or cause destruction of the cells.

decongestant Reduces congestion (i.e. swelling) of the nasal mucosa.

demulcent Supposed to coat and smooth mucous membranes of the gastro-intestinal tract (e.g., milk, raw egg white).

diuretic Increases urine output.

elixir Clear, flavoured liquid preparation of drug frequently containing alcohol and sweetening and colouring agents.

emetic Induces vomiting.

emollient Topical softening application.

enema Drug formulation for rectal administration.

enteric coating Surface coating of capsules or tablets designed to resist gastric acid acting on it, so that the drug is not released until reaching the small intestine.

expectorant Aids removal of sputum from the lungs and respiratory passages.

fibrinolytic Dissolves or otherwise destroys the fibrin which is formed when blood clots.

G6PD Glucose 6-phosphate dehydrogenase: an enzyme involved in carbohydrate metabolism. Some patients exhibit an inherited deficiency of this enzyme and are thus more susceptible to certain diseases and adverse drug effects.

haematinic Involved in the normal development of red blood cells.

haemolysis Increased breakdown of red blood cells.

haemostatic Stops bleeding and prevents blood loss.

herbicide Kills plants.

hormone Naturally occurring substance which is secreted by a gland into the blood stream, whence it is carried to the part of the body on which it acts. Insulin, for example, is secreted by the pancreas and acts at sites all over the body.

hyperaldosteronism Excessive secretion of the salt-retaining hormone **Aldosterone**.

hypercalcaemia Raised serum calcium above normal levels.

hypnotic Facilitates sleep.

hypoglycaemic Lowers the blood glucose.

hypotensive Lowers blood pressure.

immunosuppressant Tends to suppress the immune response. This effect may be used to suppress some cancers or rejection of transplanted organs, but it makes the body more susceptible to infections.

infusion Administration of a drug by continuous intravenous drip/injection.

insecticide Kills insects.

keratolytic Removes dry scaly skin.

laxative Relieves constipation.

linctus Viscous liquid preparation of drug containing sugar or alternative sweetening agent.

lotion Wet dressing used to cleanse and cool inflammed skin lesions.

melaena Black stools due to passage of altered blood from haemorrhage.

miotic Constricts pupil of the eye.

mucolytic Liquifies mucus within the respiratory system.

mydriatic Dilates the pupil of the eye.

narcotic analgesic Pain-relieving drug of the opium group. Liable to have addictive properties.

nephrotoxic Causes damage to the kidneys.

neurotransmitter Biochemical substance which acts in the transmission of nerve impulses.

ototoxic Causes damage to nerves involved in hearing.

parasympathomimetic Has actions similar to the parasympathetic chemical transmitter in the nervous system **Acetylcholine**.

parenteral Administered by a route other than via the gastro-intestinal tract. Usually refers to intradermal, subcutaneous, intramuscular or intravenous injection.

pessary Solid-dose drug formulation similar to suppository but placed in the vagina. Usually used for local actions in the vagina but systemic absorption of the drug may occur.

pesticide Kills pests. This term includes a wide range of compounds (e.g., rodenticides which kill rats and small mammals, insecticides, herbicides). Only a few of these chemicals also have applications as drugs.

pharmacodynamics Study of the actions of drugs in living systems.

pharmacokinetics Study of the fate of drugs in the body. Includes absorption, distribution, metabolism and excretion.

phenothiazine Drug with a chemical structure similar to **Chlorpromazine**.

placebo Inactive substance or preparation used in controlled studies to evaluate the effectiveness of a medicinal substance. In some instances, a placebo may be prescribed to satisfy the patient's desire for medicine. In other instances, a supposedly 'active' drug may be prescribed but the benefits seen relate not to this action but to the 'placebo' effect.

prophylactic Tends to prevent a condition rather than treat it when established.

purgative Facilitates evacuation of the bowels.

receptor Site on cell surfaces which reacts to drugs or endogenous substance to produce the observed effect.

rubefacient Causes reddening of the skin.

sedative Reduces arousal.

suppository Solid-dose, elongated, cone-shaped drug formulation for insertion into the rectum for local treatment (e.g., for haemorrhoids) or for drug absorption (e.g., antiemetic). Has a fatty base which melts at body temperature.

sustained-release formulation Product specifically designed to release the active drug more slowly and over a prolonged period. Used to increase the interval between doses and to prevent toxicity from high drug concentrations achieved in the body when there is rapid absorption.

sympathomimetic Has actions similar to the chemical transmitters of sympathetic nervous system (**Adrenaline** and **Noradrenaline**).

tachycardia Rapid heart rate.

tachyphylaxis Occurs when repeated doses of the drug produce progressively smaller effects (or else progressively bigger doses are required).

teratogenic May produce congenital malformation if given during the first three months of pregnancy.

thiazide Drug with a chemical structure similar to **Chlorothiazide**.

topical Applied externally at the site where the drug action is needed (e.g., for treatment of skin rashes or eye infections).

toxoid A preparation of a bacterial toxin that has its toxic properties removed but has retained its ability to stimulate the body's immunity to it by the production of antibodies.

tranquillizer Drug with sedative actions on the brain which is used in the treatment and management of certain psychiatric disorders, for example, schizophrenia, mania.

vaccine Preparation of live attenuated or dead microorganisms used to induce immunity.

vasoconstrictor Causes constriction of blood vessels.

vasodilator Causes dilatation of blood vessels.

Contents

Part I

Approved Names

A

Acebutolol Beta-adrenoceptor blocking drug, with limited cardioselectivity. Uses, side effects, etc. as for **Propranolol**.

Acetaminophen USA: see **Paracetamol**.

Acetazolamide Weak diuretic. Also used in glaucoma to reduce intraocular pressure, and as an anticonvulsant. Acts by inhibiting carbonic anhydrase and so reduces hydrogen ions available for exchange with sodium ions. May cause drowsiness, mental confusion, and paraesthesia.

Acetohexamide Oral antidiabetic agent with actions and uses similar to **Chlorpropamide**.

Acetomenaphthone See **Vitamin K**.

Acetylcholine Neurotransmitter, particularly in parasympathetic system. Peripheral effects include miosis, paralysis of accommodation, increased glandular secretions, contraction of smooth muscle in gastro-intestinal, respiratory and urogenital systems, slowing of heart, and vasodilatation. These effects blocked by **Atropine sulphate**. Not used clinically.

Acetylcysteine Mucolytic. Administered by mouth or by inhalation from a nebulizer. Liquefies mucus and aids expectoration in diseases where mucus is troublesome (e.g., chronic bronchitis). May cause bronchospasm, haemoptysis, nausea, and vomiting. Used also in lubricant eye drops and intravenously in the treatment of **Paracetamol** overdosage where it prevents liver damage by restoring or acting as a substitute for depleted liver glutathione stores. In this use may also cause rash, nausea, vomiting, and transient bronchospasm.

Acetylsalicylic acid (Aspirin) Anti-inflammatory, antipyretic analgesic. Inhibits prostaglandin synthesis, reduces stickiness of blood platelets. May cause gastric erosion and haemorrhage, hypersensitivity reactions. Tinnitus and hyperventilation leading to respiratory and cardiovascular failure in overdose. Interacts with oral anticoagulants and sulphonylureas. Forced alkaline diuresis may be used to speed elimination in overdosage.

Acipimox Reduces raised blood lipids by inhibiting the release of fatty acids from fat tissue. Related chemically to **Nicotinic acid**. Adverse reactions include flushing and headache.

Acrivastine Antihistamine for treatment of allergies and hay fever. It is fast-acting and has a short duration of action. It seldom causes drowsiness.

Acrosoxacin Antibiotic used only in treatment of gonorrhoea where the patient is allergic to **Penicillin** or organism is resistant to penicillins and other antibiotics. Needs only single dose. May cause dizziness, drowsiness, headache, and gastro-intestinal disturbances.

Actinomycin D Cytotoxic antibiotic used in neoplastic disease. Adverse effects include bone marrow depression.

Activated charcoal Charcoal is a strong adsorbent. 'Activated' indicates simply that the charcoal meets certain standards in adsorbence tests. Used by mouth in cases of acute poisoning to reduce absorption of drugs or other toxins. May cause nausea and vomiting. Would adsorb oral emetics or antidotes and therefore should not be used if these are given. Subsequent black stools should not be mistaken for melaena.

Acyclovir Antiviral agent used orally, topically and intravenously to treat herpes simplex infections. Should not be used when patient is dehydrated as may cause rise in blood urea and creatinine.

Adenosine monophosphoric acid (AMP) Source of high-energy phosphate bonds for tissue metabolism. Suggested for use in cardiovascular disease and rheumatism but efficacy unproven.

Adenosine triphosphoric acid (ATP) Source of high-energy phosphate bonds for tissue metabolism. Suggested for use in cardiovascular disease and rheumatism but efficacy unproven.

Adrenaline Sympathomimetic amine, alpha and beta-adrenoceptor agonist. Produces vasoconstriction with rise in blood pressure, cardio-acceleration and bronchodilation. Used in acute allergic reactions, as peripheral vasoconstrictor, in narrow-angle glaucoma and in cardiac arrest. Toxicity includes hypertension, pulmonary oedema, and cardiac arrhythmias.

Agar Purgative. Increases faecal bulk by same mechanism as **Methylcellulose** but less effective.

Alclofenac Anti-inflammatory analgesic with actions similar to **Ibuprofen**.

Alclometasone Topical corticosteroid for treatment of eczema and other non-infective inflammatory conditions. Actions and adverse effects similar to **Hydrocortisone**.

Alcuronium Skeletal muscle relaxant with uses and adverse effects similar to **Tubocurarine**.

Aldosterone Naturally occurring adrenal (mineralocorticoid) steroid hormone. Acts mainly on salt and water metabolism by increasing salt retention in the kidney; has no useful anti-inflammatory activity. Used only in replacement therapy for adrenal insufficiency.

Alexitol sodium Complex of sodium poly(hydroxyaluminium) carbonate and hexitol. An antacid with uses and adverse effects similar to **Aluminium hydroxide**.

Alfentanil (c) Narcotic analgesic, with actions and uses similar to **Fentanyl** and **Morphine**. Has a rapid onset of action, but its duration of action is less than other narcotic analgesics. Used as an adjunct to anaesthesia during short surgical procedures.

Alginic acid Extract of algae found mainly on the west coast of Scotland and Ireland. Used as tablet binder and disintegrant.

Allantoin Used in creams and lotions to stimulate wound healing.

Allergen extract vaccines Extracts prepared from common allergens (e.g., grass, bee venom) for hyposensitization of hypersensitive individuals. Used as graded doses starting from the lowest. Injected subcutaneously. Avoid in pregnancy, febrile conditions and acute asthma. May cause allergic reactions.

Allopurinol Reduces formation of uric acid from purine precursors by inhibiting the enzyme xanthine oxidase. Used in primary and secondary gout.

Allyloestrenol Hormone with actions similar to **Progesterone**.

Almasilate Polymer of aluminium magnesium silicate. Similar antacid properties to **Aluminium hydroxide** and **Magnesium trisilicate**.

Aloes Derived from species of aloe. Used as purgative, producing motion six to twelve hours after ingestion. Causes griping. Colours urine red. May cause nephritis in large doses.

Aloin Extract of aloes: see **Aloes**.

Aloxiprin Complex of **Aluminium antacids** and **Acetylsalicylic acid**, yielding these agents after breakdown in the gastro-intestinal tract.

Alpha-calcidol (1 α-Hydroxyvitamin D_3) Rapidly converted in the liver to dihydroxyvitamin D_3–the metabolite of vitamin D with the most marked effect on calcium and phosphate balance. Used in treatment of renal bone disease, hypoparathyroidism, rickets, and osteomalacia when these are