Treatment in Internal Medicine

by

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With a Foreword by

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Foreword

Some years ago, Dr. Harold Hyman showed the medical world that he was a brilliant and able writer with a truly encyclopedic knowledge of the practice of medicine and especially of therapeutics. His prose was interesting, crisp and very readable, and he had the gift of brevity. Every word and sentence and paragraph carried a message. As a writer of sorts myself, what caused me to marvel most at Dr. Hyman's achievement was his ability to get out an immense book, and yet have each section on treatment up-to-date, with ample information on the practical use of drugs recently placed on the market.

In this book, I find that Dr. Hyman has again gathered together an amazing amount of information on treatment, and on treatments that have recently been developed. As I write this, a woman comes in to ask if I won't help her with the problem of pinworms in two of her children. The old gentian violet capsules and quassia enemas have not helped a bit. Turning to Dr. Hyman's chapter on Worms, I find just what I wanted to know about the use of the new piperazine and dithiazanine types of vermifuge which have recently come into use and have proved to be highly effective. I find, also, one of the most detailed lists of instructions for the care of the child during treatment that I have ever seen. As Dr. Hyman says, one must avoid reinfestation, and to do this all of the affected children in the home must be treated at the same time. Also at night, to avoid getting eggs of the worms under their fingernails, the children must wear snug panties and cotton gloves; and each morning, they must have a shower and not a tub bath.

This book is well-organized, well-written, and attractively printed. Like all of Dr. Hyman's other writings, it should be greeted eagerly by thousands of physicians. It should be one of the most useful books that doctors can keep within easy reach, back of their desk.

WALTER C. ALVAREZ

Preface

TREATMENT IN INTERNAL MEDICINE is a functional text, planned and integrated to serve as a single volume "office and bedside consultant" to colleagues who deal first hand with the problems of daily practice.

For general orientation and a working knowledge of the devices used to compress the vast material of modern therapeutics within the confines of a single volume, the attention of prospective readers is directed to the following features, many unique to this presentation:

1. An initial group of five main sections on the care of the patient who has sustained a bodily injury or the unhappy consequences of a bodily response to injury (see pages xi and xii)

2. A second group of four main sections on the care of the patient who is afflicted with a disturbance involving some component of a system of communication or coordination (pp. xiii and xiv)

3. A tenth and final main section on the care of the patient who has suffered a disturbance ordinarily regarded as the province of the specialist but one that may be responsive to nontechnical ministrations by the internist or generalist who lacks immediate access to the indicated specialist (p. 525)

4. Rosters of commercially available therapeutic agents, such as anti-infectives (p. 5), antitensives (p. 346), analgesics (p. 420) or ataractics (p. 448), each providing scientific and trade names, types of preparation, dosage units and package information, followed by NOTES indicating preferred products, untoward and toxic effects, and second choices when patient-resistance or idiosyncrasy is encountered

5. Tables listing disturbances rarely encountered in routine practice, such as metabolic anomalies (p. 182), collagen disorders (p. 250), hypersensitivities (p. 254) and poisonings (p. 263), some of which are nonetheless responsive to indicated treatment by internist or generalist

6. Specific instructions for the conduct of technical therapeutic procedures frequently indicated, such as venostomy for intravenous infusions or transfusions (p. 568), hypodermoclyses (p. 566), nasogastric and intestinal intubations (p. 576), lumbar puncture (p. 409), lumbar sympathetic block (p. 339) or blockade of the stellate ganglia (p. 327)

7. Specific directions for the conduct of nontechnical therapeutic procedures, such as psychotherapy (p. 442), measures for rehabilitation (pp. 239 and 240), postural exercises (p. 547) and aids for retraining following paralyses due to cerebrovascular accidents (p. 332)

8. In most individual presentations, a preliminary summary of pertinent background material for guidance in the conduct of therapy as, for example, in allergic diseases (p. 208), collagen disorders (p. 231), atheroscleroses (p. 295), thromboembolic disturbances (p. 303), the neuroses and psychoneuroses (p. 438), psychosomatic and somatopsychic ailments (p. 456) and psychoses (p. 466)

9. Emphasis on preventive measures such as prophylactic immunizations (p. 24), avoidance of carcinogens (p. 189), elimination of hyperallergens (p. 208), and efforts to combat atherogenesis (p. 299)

10. Suggestions for ON-THE-SPOT CARE of the patient whose affliction precludes transportation to home, office or hospital as, for example, in the case of an anginal attack (p. 311), a suspected coronary occlusion (p. 317) or of the individual who has been poisoned (p. 269)

11. Inauguration of probatory treatment, on the basis of the "educated guess," when the diagnosis remains in doubt after the initial history and physical examination as,

for example, in the early hours of an infection (p. 4) or a disturbance involving acid-base, electrolyte or water metabolism (p. 147)

12. Continuation of probatory treatment when, at a subsequent visit, the patient has responded satisfactorily and/or the "educated guess" has been confirmed by clinical or laboratory data

13. Discontinuance of the probatory treatment when, at a subsequent visit, the patient has failed to respond and/or has exhibited manifestations of idiosyncrasy, hypersensitivity, intolerance or resistance to therapeusis as exemplified by Special Hazards of Anti-infective Treatment (p. 20), Contact Dermatitis (p. 218), Serum Sickness (p. 221), Anaphylactic Shock (p. 230), Exfoliative Dermatitis (p. 250) or Untoward Reactions Related to Intravenous Injections (p. 576)

14. Following failure of probatory or indicated IMMEDIATE TREATMENT, recourse to alternatives and/or request for consultation

15. Full use of specialist assistance when confronted by a clinical situation of grave urgency, such as a diphtheritic infection (p. 92), a tetanus invasion (p. 95), a malignant hypertension (p. 362), a cardiac arrhythmia (p. 381), diabetic coma (p. 496) or a disturbance in a specialty field that requires immediate consideration of instrumentation or surgery (p. 387 and pp. 525 to 570)

16. SUPPLEMENTS A and B that co-ordinate textual material on pharmacology, therapeutics and toxicology (pp. 571 to 577) and provide a listing of over 100 COMMON PRESENTING SYMPTOMS whose management and palliation are discussed in appropriate sections as, for example, somnolence, insomnia, headache, pain, tremors, convulsions and coma with neuropsychiatry (pp. 412 to 437)

17. Consideration of the neglected ART OF PROGNOSIS, as detailed in SUPPLEMENT C (p. 579)

18. A GENERAL INDEX of more than 5,000 entries that includes synonyms and eponyms of clinical entities, scientific and trade names of therapeutic products, and references to technical procedures mentioned in the text (p. 583)

19. Utilization of cross references, in parentheses, that indicate the site of a detailed presentation of the subject at hand and, by so doing, preclude the necessity for wasteful repetition of identical material as, for example, prescription or administration of penicillin (p. 11) or an anticoagulant (p. 303), or induction of therapeutic hypercortinism (p. 471), or recourse to nontechnical psychotherapy (p. 442)

20. Preparation of "tailor-made" therapeutic programs to suit the particular requirements of the particular patient, afflicted with the particular ailment at the particular moment (pp. 344, 427, 432, 460 and 485)

And finally, to the tangibles of all therapeutic programs, there should be added the intangible element of "caring." Successful care of the afflicted often is dependent, in no small part, on the patient's will-to-get-well (p. 441) and the warmth with which the physician *cares for* his patient (Peabody, Francis, *J.A.M.A.* 87:877).

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Pipersville, Pa.

Contents

SECTION I

The Infectious Diseases

SECTION II

Metabolic Disturbances

SECTION III

Neoplasms

SECTION IV

Allergies, Collagen Disorders, Hypersensitivities, Idiosyncrasies and Untoward Reactions

SECTION V

Poisonings and Environmental Hazards

SECTION VI

Disturbances of the Circulatory System

SECTION VII

Disturbances of Blood and Blood-forming Organs

SECTION VIII

Neuropsychiatric Disturbances

SECTION IX

Disturbances of the Endocrine Glands

SECTION X

Disturbances in Specialty Fields

TABLE OF CONTENTS

SECTION I

The Infectious Diseases

CHAPTER 1

An Integrated Program for Care of the Infected Patient

Probatory Anti-infective Treatment Based on the "Educated Guess." Scientific Anti-infective Treatment. Components of the Integrated Program for Care of the Infected Patient.

The physician who cares for the infected patient faces a formidable "line up" of malevolent suspects. Every known virus, coccus, bacillus, spirochete, rickettsia, fungus, protozoon and metazoon commands his attentive scrutiny now that air transport has transcended geographical barriers to tropical diseases.

The "Educated Guess." Under usual conditions in the office or at the bedside the busy practitioner has neither the time nor the facilities for exhaustive investigation. Mindful of advantages that accrue to the patient who receives early and vigorous anti-infective treatment, the realist in medicine projects a working diagnosis from available clinical findings. With indications provided by this "educated guess," he then opens fire with the particular therapeutic product that appears most apt to decimate the assailant, and least apt to add insult to the defendant's existing injuries.

Probatory Anti-infective Treatment. While probatory treatment, based on tentative diagnosis, leaves much to be desired from a scientific standpoint, its therapeutic potentials far exceed iatrogenic hazards. Indeed, under optimum conditions, the patient's tissues may be rendered bacteria-free before the laboratory has had time to identify the pathogen and issue its report.

Scientific Anti-infective Treatment. When clinical indications are nonurgent, when the evidence points to an invasion of considerable duration, when probatory treatment has proved unrewarding, and/or when potential hazards of improvisation appear to exceed possible risks of temporary delay, the clinician requests laboratory assistance for (1) isolation and identification of the invading pathogen, (2) an estimate of the quality and potency of the patient's antibody responses, and (3) accurate titrations of the particular microbe's sensitivity to available anti-infective agents. With these data at hand, he substitutes or inaugurates scientific anti-infective treatment, though not without the mental reservation that responses in living tissue do not always duplicate those obtained in the test tube (p. 21).

An Integrated Program for Care of the Infected Patient. Although the spectacular accomplishments of anti-infectives have focused attention on "miracle drugs," the practitioner's obligations to the infected patient transcend mere prescription or injection of a reputed specific. He recommends indicated measures for symptomatic relief (p. 29); supervises necessary domestic arrangements for home care (p. 27); protects contacts by measures of immunoprophylaxis or chemoprophylaxis (p. 26); and co-operates with public health authorities in their efforts to prevent endemic or epidemic spread of the infectious process (p. 26). Undoubtedly it was to these endeavors that James Bryce referred when he stated that "medicine is the only profession that labors incessantly to destroy the reason for its existence."

CHAPTER 2

Roster of Commercially Available Anti-infective Agents

Anti-infectives for Oral Administration. Anti-infectives for Intramuscular Injection. Anti-infectives for Intravenous Injection. Anti-infectives for Local and Topical Application. Combinations of Anti-infectives. Polypharmaceutical Preparations Containing Anti-infectives.

The accompanying table and its supplementary notes provide the following data:

1. An alphabetical listing of commercially available anti-infectives.
2. Descriptions of basic preparations for oral or parenteral administration.
3. Broad indications for clinical use of each product.
4. Page references to specific examples of the use of the indicated product in the specific treatment of a particular infection.
5. A brief summary of limiting side effects and/or toxic manifestations.
6. A supplementary list of palatable oral products, especially for use in pediatrics (Notes A and B).
7. A supplementary list of ampuled products, especially adapted for immediate intramuscular or intravenous injection (Notes C and D).
8. A short list of upcoming anti-infectives of promise (Note E).
9. A somewhat longer list of established products, facing obsolescence despite their proved potency (Note F).
10. A brief discussion of the limited value and disproportionately greater risk of local applications of sensitizing anti-infectives. Approved nonsensitizing anti-infective products for topical use (Notes G to K).
11. Approved and disapproved fixed combinations of anti-infectives (Notes L and M).

TABLE 1. COMMERCIALLY AVAILABLE ANTI-INFECTIVES

Achromycin
Brand of tetracycline (v.i.). **Cap.** 50, 100 and 250 mg. **Cap.** Achromycin V 250 mg. (with 380 mg. Na metaphosphate). **Vials** 100 mg. for intramuscular injection. **Vials** 100, 250 and 500 mg. for intravenous injection.

Albamycin
Brand of novobiocin. **Cap.** 250 mg.

Aminosalicylic Acid
Formerly para-aminosalicylic acid (v.i.).

Aminitrozole
Brand name Tritheon (v.i.). Oral trichomonicide.

Amodiaquine
Brand name Camoquin (v.i.).

Antimonials
Trivalent: Antimony and potassium tartrate (tartar emetic, v.i.) and stibophen (v.i.).
Pentavalent: Ethylstibamine and stibamine glucoside (v.i.).
Aromatic Diamidines: Stilbamidine isethionate and hydroxystilbamidine (v.i.).
Immediate side effects during or following intravenous injection (p. 576). Hypersensitivities (p. 255). Poisoning (p. 263). Antidote: BAL (p. 264).

Antimony and Potassium Tartrate (Tartar Emetic)
Trivalent antimonial (v.s.). **Amp.** (1%) 5 cc. for intravenous injection in treatment-resistant leishmaniasis (p. 122) and schistosomiasis (p. 127).

Aralen Phosphate
Brand of chloroquine (v.i.). **Tab.** 250 mg. **Amp.** 50 mg. per cc. for intramuscular injection.
Effective antimalarial (p. 116) and amebacide (p. 119). With related antimalarials, receiving successful trial in rheumatoid arthritis and related collagen disorders (p. 233).

Arsenicals
Trivalent: dichlorophenarsine (Clorarsen, v.i.), oxophenarsine (Mapharsen, v.i.), Butarsen (v.i.) and Melarsen (v.i.). Obsolete or obsolescent: Bismarsen, arsphenamine (Salvarsan),

TABLE 1. COMMERCIALLY AVAILABLE ANTI-INFECTIVES—(*Continued*)

neoarsphenamine (Neosalvarsan), silver arsphenamine, sulfarsphenamine, etc.

Pentavalent: carbarsone (v.i.). Preferable to acetarsone (Stovarsol), phenarsone (Aldarsone), sodium arsanilate (Atoxyl), Tryparsamide (v.i.), etc.

Immediate side effects during or following intravenous injection (p. 576). Hypersensitivities (p. 255). Poisoning (p. 263). Antidote: BAL (p. 264).

Atabrine

Brand of quinacrine (v.i.). **Tab.** 50 and 100 mg. **Amp.** 200 mg. with 10 cc. distilled water.

Effective antimalarial. Being superseded because of toxicity (p. 119).

Aureomycin

Brand of chlortetracycline (v.i.). **Cap.** 100 and 500 mg. **Vials** 100 and 500 mg. for intravenous injection (10 mg. per cc. at rate of 2 cc. per minute).

Possesses broad antimicrobic spectrum. Effective against most bacteria, rickettsia, treponemes, amebas, trichomonas and some large viruses.

Hazards include side effects (nausea, emesis, abdominal distention, diarrhea, urticaria, arthralgias, febrile toxicoderms, etc.) and patient-sensitization; emergence of resistant bacterial strains; and micrococcal or monilial superinfections (p. 21).

Bacitracin

Nonsensitizing minor antibiotic. Particularly effective against staphylococci, streptococci and pneumococci, including strains resistant to other anti-infectives (p. 21).

Because of narrow microbic spectrum, combine dermal and ophthalmic ointments with neomycin (v.i.) and polymyxin B (v.i.) to cover gram-negative bacilli, especially Koch-Weeks and Morax-Axenfeld. See Notes G to K.

Because of nephrotoxicity (albuminuria, cylindruria, oliguria, azotemia, etc.) and other side effects (local pain, nausea, emesis, urticaria, drug fever, etc.), reserve intramuscular injections (25,000 units in 5 cc. of 2% procaine) for obstinate bacteremias due to staphylococci and streptococci, resistant to safer major anti-infectives. Repeat at 6- or 8-hour intervals. Maintain fluid intake in excess of 2,500 cc. and urine output in excess of 1,000 cc. Ignore minor toxicity if need is great.

Benemid

Brand of probenecid. **Tab.** 0.5 Gm. Daily doses of 4 Gm. produce renal blockade thereby affecting at least a 2-fold increase of penicillinemia (v.i.).

Benzapas

Effective preparation of calcium benzoyl para-aminosalicylic acid for use as tuberculocide. **Tab.** 0.5 Gm.

Benzathine Penicillin G (dibenzylethylenediamine dipenicillin G)

Most effective long-acting penicillin (v.i.). Brand names Bicillin (v.i.) and Permapen (v.i.). Single oral dose of 300,000 units produces blood levels approximating 0.1 unit penicillin per cc. or sufficient to eliminate most strains of hemolytic streptococci (p. 58). Single intramuscular deposit of 600,000 units provides effective blood levels for 10 to 14 days; of 1,200,000 units for 4 weeks. Unfortunately, prolonged levels also produce protracted manifestations of hypersensitivity.

Bicillin

Brand of benzathine penicillin G (v.s.). **Tab.** 100,000 and 200,000 units. Tubex sterile-needle units 300,000; 600,000 and 1,200,000 units for intramuscular injection.

Bismuth Glycolylarsanilate

Insoluble compound of arsenic and bismuth, exposing patient to hazards of both metals (v.s.). Brand name Milibis (v.i.). In combination with Arlen, quite effective in treatment of amebiasis (p. 119). Used alone, efficacy limited to intraintestinal amebacidal activity.

Butarsen

Unofficial trypanosomicide under trial in African sleeping sickness (p. 123). Average intravenous or intramuscular dose (para-arsenosophenylbutyric acid), 0.5 mg. per Kg. (35 mg. for adult of average weight). Repeat daily for 2 weeks. Incidence of arsenical toxicity said to be less than 1% (v.s.).

Camoquin

Brand of amodiaquine (v.s.). **Tab.** 200 mg.

Effective antimalarial (p. 116). Only rare and insignificant side effects (nausea, emesis, convulsions, etc.).

Carbarsone

Pentavalent arsenical (v.s.). **Tab.** 50 and 250 mg. as amebacide (p. 119). **Vag. Supp.** 130 mg. as trichomonicide (p. 121)

Carbomycin

Newly isolated antibiotic. Brand name Magnamycin (v.i.). Resembles oleandomycin with which it may be identical.

Bacterial spectrum qualitatively similar to Aureomycin, Terramycin and the tetracyclines.

Cathomycin

Brand of novobiocin (v.i.). **Cap.** 250 mg.

Cer-O-Cillin

Brand of penicillin O (v.i.). **Tab.** 200,000 units. **Vials** 200,000 and 500,000 units. Depo-Cer-O-Cillin Chloroprocaine Vials (1 cc. contains 300,000 units with local anesthetic for long acting intramuscular deposit).

Reserve for patients sensitive to other penicillins (approximately 90% of those sensitive to penicillin G tolerate penicillin O).

Chloramphenicol

Highly effective broad-spectrum, synthetically

TABLE 1. COMMERCIALLY AVAILABLE ANTI-INFECTIVES—(*Continued*)

prepared antibiotic. Especially useful in typhoid fever (p. 76). Brand name Chloromycetin (v.i.).

Because of rare but insidious and grave hypersensitivities (granulocytopenia and aplastic anemia, occasionally fatal), restrict use to "the treatment of typhoid fever and other serious diseases, caused by organisms controlled by chloramphenicol but resistant to other antibiotics or other forms of treatment" (N.N.R.1955, p. 141).

Chlorguanide

Effective antimalarial (p. 116). Brand name Guanatol (v.i.). Excessive doses may cause emesis, abdominal pain, diarrhea, hematuria.

Chloromycetin

Brand of chloramphenicol (v.s.). **Cap.** 50, 100 and 250 mg. Sterivial 1 Gm. in 2.5 cc. saline for intramuscular injection. **Amp.** 0.5 Gm. with 2 cc. diluent for slow intravenous injection.

Chloroquine

Antimalarial (p. 116) and amebacide (p. 119). Brand name Aralen (v.s.).

Side reactions limited to headache, nausea, pruritus, blurred vision and difficulty in focusing.

Chlortetracycline

Major nontoxic antibiotic. Possesses broad antimicrobic spectrum. Brand name Aureomycin (v.s.).

Clorarsen

Trivalent arsenical (v.s.). Brand of dichlorphenarsine (v.i.). **Amp.** 50 and 75 mg. For intravenous injection after dilution with 2 cc. sterile distilled water.

Highly effective and relatively nontoxic treponemicide (p. 101). Superseded by even more effective and less toxic antibiotics, i.e., penicillin, Terramycin, tetracyclines, etc.

Compocillin

Brand of hydrabamine-penicillin G (v.i.). Oral suspension 300,000 units per 5 cc. Filmtabs Compocillin V 125 mg. (200,000 units) and 250 mg. (400,000 units).

Cyclamycin

Newly isolated broad spectrum antibiotic for oral use. **Caps.** 125 and 250 mg. triacetyloleandomycin. **Vials** 500 mg. powdered phosphate for intravenous injection.

Cycloserine

Newly isolated antibiotic. Brand names Oxamycin (v.i.) and Seromycin (v.i.). Has broad-spectrum activity against staphylococci, streptococci, *E. coli* and *A. aerogenes* but effects less marked than those of competing antibiotics of lesser toxicity. Greatest promise appears to be as tuberculocide (p. 85). Oral doses most effective when combined with isoniazid and/or injections of streptomycin-dihydrostreptomycin mixtures (v.i.).

Toxic manifestations include headache, vertigo, lethargy, behavioral changes, convulsions and psychotic episodes. Because of these, reserve cycloserines for use in patients resistant to safer tuberculocides.

Daraprim

Brand of pyrimethamine (v.i.). **Tab.** 25 mg. Effective antimalarial (p. 116). May cause megaloblastic anemia.

DBED Penicillin G

Benzathine penicillin G (v.s.).

Diasone

Brand of sulfoxone sodium (v.i.). **Enterab Tab.** 330 mg. effective as oral leprocide (p. 92).

Toxic manifestations include nausea, hematuria, febrile toxicoderms, leukopenia, normocytic anemia, methemoglobinemia, etc.

Dibenzylethylenediamine Penicillin G

Benzathine penicillin G (v.s.). Brand names Bicillin, Neolin and Permapen (v.i.).

Dichlorphenarsine

Trivalent arsenical (v.s.). Brand name Clorarsen (v.s.).

Diethylcarbamazine

Effective oral filaricide (p. 126). Brand name Hetrazan (v.i.).

Dihydrostreptomycin

Effective tuberculocide (p. 85). **Vials** 1 or 5 Gm. For deep intramuscular injection, dissolve 1 Gm. in 2 cc. of 2% procaine. Less effective than streptomycin (v.i.). Ototoxicity more insidious and lasting. For most effective and least harmful use, combine with equal parts of streptomycin (i.e., Combistrep, Distrycin, Duostrep, Mutamycin, etc.). Reserve solo use of dihydrostreptomycin for patients whose organisms have become streptomycin-fast.

Dithiazanine

Promising polyvermicide, resembling Hetrazan (v.i.). Seemingly effective with little toxicity in human ascariasis, enterobiasis, strongyloidiasis, trichuriasis and uncinariasis (p. 131).

Elkosin

Brand of sulfisomidine (v.i.). **Tab.** 0.5 Gm. Because of high solubility in acid and alkaline urines and low degree of acetylation, recommended in urinary sepsis. Prefer triple sulfonamide mixtures (v.i.).

Emetine

Highly toxic alkaloidal amebacide (p. 119). Enteric-coated **Tab.** 20 mg. **Amp.** 32 mg. per cc. for subcutaneous or intramuscular injection. Usual course 32 mg. daily for 5 to 10 days.

In addition to local pain, 90% of patients develop toxic manifestations, i.e., nausea, emesis, diarrhea, vertigo, myalgias, cardiac irregularities, hypotension, cardiac failure, etc. Despite this, favored by some experts for treatment of systemic invasions, particularly of liver.

Erythrocin

Brand of erythromycin (v.i.). **Tab.** 100 and 200 mg. **Vials** of lactobionate 300 mg. and