Uwe Frank Evelina Tacconelli

The Daschner Guide to

In-Hospital Antibiotic Therapy

Uwe Frank Evelina Tacconelli

The Daschner Guide to

In-Hospital Antibiotic Therapy

With 18 Figures and 6 Tables

Springer

Uwe Frank, MD, PhD
Professor of Clinical Microbiology
Department of Environmenal Health Sciences
Freiburg University Medical Center
Breisacher Str. 115b
79106 Freiburg, Germany

Evelina Tacconelli, MD, PhD
Assistant Professor of Infectious Diseases
Institute of Infectious Diseases
Università Cattolica del Sacro Cuore
Largo Gemelli 8
00168 Rome, Italy

Library of Congress Control Number: 2008939431

ISBN 978-3-540-48347-2 Springer Medizin Verlag Heidelberg

Springer Medizin Verlag
springer.de

Editor: Hinrich Küster
Project Mangement: Meike Seeker
Cover Design: deblik Berlin, Germany
Typesetting: Fotosatz-Service Köhler GmbH, Würzburg, Germany

SPIN: 11808831

Printed on acid-free paper 2126 – 5 4 3 2 1 0

Foreword

Dear Colleagues,
Pocket books which help clinicians find the best treatment for infectious diseases, or that can be used as quick reference to select rarely used alternative agents and/or susceptibility data for uncommon micro-organisms, are a valuable asset in day-to-day patient care.
With the ever-increasing challenges posed by new and re-emerging infectious diseases and a continuously expanding arsenal of antimicrobial agents, a guide that is adjusted to European standards is a welcome addition to the collection of quick references and should be »at hand« for all those taking care of patients with infectious diseases.
Despite the popularity of pocket guides, most are American publications; none have been published for Europe-wide use. I am pleased to see that Uwe Frank and Evelina Tacconelli have put together "In-Hospital Antibiotic Therapy", a quick reference to antimicrobial treatment of inpatients that is based on a German pocket book originally created by Franz Daschner. This book will most certainly be a valuable asset for all those treating patients with infections. While primarily written with the hospital setting in mind, most of the very useful information can certainly be used in other healthcare settings, too.

Andreas Voss
Professor of Clinical Microbiology and Infection Control
Radboud University Nijmegen Medical Centre and
Canisius-Wilhelmina Hospital
Nijmegen, The Netherlands

Preface

The first edition of Franz Daschner's pocketbook "Antibiotika am Krankenbett" was published in Germany in 1982. The purpose of the book was to provide physicians and pharmacists, residents, medical students, and health care professionals in allied fields with a concise reference source for antibiotic drugs, listing the preparations available, antimicrobial spectra, usual dosages, adverse effects, and, in specific cases, pharmacologic data. The book was regularly updated and its structure modified according to the users' needs. The 12th and 13th editions were co-edited by Uwe Frank, who, now that Franz Daschner has retired, edited the 14th edition, published in 2008.

Because of the pocketbook's popularity among clinicians and pharmacists, not only in Germany, Austria and Switzerland but also in many other countries, we were asked to prepare a new version of the pocketbook in English. We have acknowledged Franz Daschner's contribution by adding his name to the title of the first English edition.

The book's pocket size has always been popular and we are committed to maintaining this design so that the book can be slipped into the pocket of any jacket or laboratory coat and carried throughout the hospital.

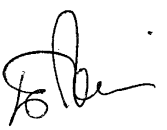
Changes in antibiotic therapy have evolved simultaneously with developing antibiotic resistance and new/emerging pathogens. These developments are so rapid that no textbook of clinical microbiology, infectious diseases and pharmacology can keep pace. Clinicians nowadays rely on the medical literature to prescribe antibiotics, but concise information useful for patient management is often difficult to obtain. We believe that with respect to antibiotic therapy this handbook is unparalleled in its precision and conciseness. Its structure is designed for easy use. It attempts to present the most common trade names for antibiotics marketed in Europe and should be used only as a guideline to these. It should not be considered as an

official therapeutic document. If there is any discrepancy between the recommendations made and the information available in package inserts, the reader is advised to obtain official and complete information from the national office of the manufacturer.
If you wish to comment on or criticise any of the recommendations made in this pocketbook, please e-mail us at the following addresses:

uwe.frank@uniklinik-freiburg.de
etacconelli@rm.unicatt.it

Please let us know if you notice that a particular antibiotic or pathogen has not been covered. Please also feel free to suggest experts who could contribute to the subject.
We look forward to hearing from you!

Uwe Frank



Evelina Tacconelli

Acknowledgements

Our thanks for updating the 14th edition of “Antibiotika am Krankenbett”: (in German) to:

Elisabeth Meyer, MD, PhD, Berlin, Germany
Winfried Ebner, MD, Freiburg, Germany
Markus Daschner, MD, Heidelberg, Germany
Joachim Böhler, MD, PhD, Wiesbaden, Germany
Manfred Kist, MD, PhD, Freiburg, Germany
Martin Hug, PhD, Freiburg, Germany

Our thanks for helping to prepare the first edition of the “The Daschner Guide to In-Hospital Antibiotic Therapy” (in English) to:

Dennis Mlangeni, MD, Peterborough, United Kingdom – for his useful advice.
Julia Roseveare, Heidelberg, Germany – for her help in translating, typing and preparing the manuscript.
Anja Klinger-Bock, Freiburg, Germany – for proofreading assistance.

Contents

Abbreviations

Drug dosage and drug administration:

1 ×	OD = once daily
2 ×	BID = two times daily
3 ×	TID = three times daily
4 ×	QID = four times daily
p.o.	per os (by mouth)
i.v.	intravenous
i.m.	intramuscular

BAL	Bronchoalveolar lavage/ Tracheal wash
BW	Body weight
CAPD	Continuous ambulatory peritoneal dialysis
CAVH	Continuous arteriovenous haemofiltration
CNS	Central nervous system
Crea	Creatinine
CSF	Cerebrospinal fluid
CVC	Central venous catheter
CVVH/CVVHD	Continuous venovenous haemofiltration/ haemodialysis
DI	Dosage interval
ESBL	Extended-spectrum beta-lactamases
GFR	Glomerular filtration rate
GISA	Glycopeptide intermediate-resistant *S. aureus*
HD	Haemodialysis
INH	Isoniazid
IU	International unit
LD	Loading dose
MAO	Monoamine oxidase
MDR	Multidrug resistant
MRSA	Methicillin-resistant *S. aureus*
MRSE	Methicillin-resistant *S. epidermidis*
MSSA	Methicillin-sensitive *S. aureus*
TMP/SMX	Trimethoprim-sulfamethoxazole
UTI	Urinary tract infection
VRE	Vancomycin-resistant enterococci

The Authors

Uwe Frank, MD, PhD is Professor of Clinical Microbiology at the Medical School, Freiburg University Hospital, Germany. He was work package leader in the European IPSE/HELICS project (Improving Patient Safety in Europe/Hospital in Europe Link for Infection Control through Surveillance) and is currently coordinator of the BURDEN project (Burden of Resistance and Disease in European Nations), both of which were financed by the EU Commission Directorate-General for Health and Consumer Protection (DG SANCO).

Evelina Tacconelli, MD, PhD is Assistant Professor of Infectious Diseases at the Università Cattolica Sacro Cuore, Rome, Italy. She has been Lecturer on Medicine at the Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, USA. She was recipient of awards from the University of London and the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) for research excellence. She serves on the Editorial Board of *Clinical Microbiology and Infection*, the official publication of ESCMID. She is work package leader on the risk assessment for methicillin-resistant *Staphylococcus aureus* within the European ISC MRSA working group.

1 Classification of the Antibiotics

β-Lactam antibiotics		
Benzylpenicillins	**Phenoxypenicillins (oral penicillins)**	**Penicillinase-resistant penicillins (anti-staphylococcal penicillins)**
Penicillin G (benzylpenicillin sodium, procaine benzylpenicillin, benzathine penicillin)	Penicillin V Propicillin	Oxacillin Dicloxacillin Flucloxacillin
Aminobenzylpenicillins	**Ureidopenicillins (broad-spectrum penicillins)**	**β-Lactam/β-lactamase inhibitors**
Ampicillin Amoxicillin	Mezlocillin Piperacillin	Ampicillin/sulbactam Amoxicillin/clavulanate Piperacillin/tazobactam Sulbactam in free combinations

Cephalosporins (first generation)	Cephalosporins (second generation)	Cephalosporins (third generation)
Cefazolin Cefalexin (oral) Cefadroxil (oral)	Cefuroxime Cefotiam Cefuroxime axetil Cefaclor (oral) Loracarbef	Cefotaxime Ceftriaxone Ceftazidime Cefepime Cefixime (oral) Cefpodoxime proxetil (oral) Ceftibuten (oral)

Monobactams	Carbapenems	β-Lactamase inhibitors
Aztreonam	Imipenem Meropenem Ertapenem Doripenem	Clavulanic acid Sulbactam Tazobactam

Other substances

Aminoglycosides	Tetracyclines	Quinolones
Streptomycin Gentamicin Tobramycin Netilmicin Amikacin	Tetracycline Doxycycline Minocycline	Group I: Norfloxacin Group II: Enoxacin Ofloxacin Ciprofloxacin Group III: Levofloxacin Group IV: Moxifloxacin

I: Indications essentially limited to UTI
II: Widely indicated
III: Improved activity against Gram-positive and atypical pathogens
IV: Further enhanced activity against Gram-positive and atypical pathogens, also against anaerobic bacteria

Lincosamides	**Azol derivatives**	**Nitroimidazoles**
Clindamycin	Miconazole Ketoconazole Fluconazole Itraconazole Voriconazole Posaconazole	Metronidazole
Glycopeptide antibiotics	**Macrolides**	**Polyenes**
Vancomycin Teicoplanin	Erythromycin Spiramycin Roxithromycin Clarithromycin Azithromycin	Amphotericin B Nystatin
Glycylcyclines		**Echinocandins**
Tigecycline		Caspofungin Anidulafungin
Streptogramines	**Ketolides**	**Oxazolidinones**
Quinupristin/ dalfopristin	Telithromycin	Linezolid
Lipopeptides	**Epoxides**	**Polymyxins**
Daptomycin	Fosfomycin	Colistin (polymyxin E) Polymyxin B
Ansamycins		
Rifampicin		

2 Generics and Trade Names

Generics	Trade names (selection)	Page
Gentamicin	Refobacin (D), Genticin (UK), Gentalline (F), Gentalyn (I), Diprogenta (E)	113
Imipenem/ cilastatin	Zienam (D), Primaxin (UK), Tienam (F, I, E)	115
Isoniazid (INH)	Isozid (D, UK, F, I, E), Tebesium (D), Isoniazid (UK, E), Rimifon (F), Nicozid (I)	116
Itraconazole	Sempera (D), Sporanox (UK, F, I, E)	117
Levofloxacin	Tavanic (D, UK, F, I, E)	118
Linezolid	Zyvoxid (D, F, I, E), Zyvox (UK)	119
Loracarbef	Lorafem (D)	120
Meropenem	Meronem (D, UK, E), Merrem (I)	121
Metronidazole	Clont (D), Flagyl (D, UK, F, I, E), Deflamon (I)	122
Mezlocillin	Baypen (D, F, I)	124
Minocycline	Klinomycin (D), Minocin MR (UK), Mynocine (F), Minocin (I, E)	125
Moxifloxacin	Avalox (D, I), Avelox (UK), Izilox (F), Proflox (E), Actira (E)	126
Netilmicin	Certomycin (D), Netilin (UK), Nétromicine (F), Nettacin (I), Netrocin (E)	126
Nitrofurantoin	Furadantin (D, UK), Furadantine (F), Furil (I), Furantoina (E)	128
Norfloxacin	Barazan (D), Utinor (UK), Noroxine (F), Noroxin (I), Baccidal (E)	129

Generics	Trade names (selection)	Page
Vancomycin	Vancomycin CP Lilly (D), Vancocin (UK), Vancocine (F), Vancocina (I), Diatricin (E)	153
Voriconazole	Vfend (D, UK, F, I, E)	155

Trade Names and Generics

Trade names (selection)	Generics	Page
Achromycin (D)	Tetracycline	150
Actimoxi (E)	Amoxicillin	65
Actira (E)	Moxifloxacin	126
Alfatil (F)	Cefaclor	75
AmBisome (D, UK, F, I, E)	Amphotericin B (liposomal)	67
Ambramicina (I)	Tetracycline	150
Amikin (UK)	Amikacin	63
Amiklin (F)	Amikacin	63
Amoxil (UK)	Amoxicillin	65
Amoxypen (D)	Amoxicillin	65
Amphotericin B (D, UK, E)	Amphotericin B	67
Amplital (I)	Ampicillin	69
Ancotil (D, UK, F, I, E)	Flucytosine	110
Ansatipin (E)	Rifabutin	141
Ansatipine (F)	Rifabutin	141
Augmentan (D)	Amoxicillin/clavulanate	66
Augmentin (UK, F, I)	Amoxicillin/clavulanate	66

Trade names (selection)	Generics	Page
Avalox (D, I)	Moxifloxacin	126
Avelox (UK)	Moxifloxacin	126
Avocin (I)	Piperacillin	135
Axepim (F)	Cefepime	80
Azactam (D, UK, F, I, E)	Aztreonam	73
Baccidal (E)	Norfloxacin	129
Bactekod (F)	Cotrimoxazole	97
Bactrim (F, I)	Cotrimoxazole	97
Barazan (D)	Norfloxacin	129
Bassado (I)	Doxycycline	102
Baxan (UK)	Cefadroxil	76
Baycillin Mega (D)	Propicillin	135
Baycip (E)	Ciprofloxacin	93
Bayercillin (I)	Mezlocillin	124
Baypen (D, F, I)	Mezlocillin	124
BB K8 (I)	Amikacin	63
Beagyne	Fluconazole	108
Betamaze (F)	Sulbactam	146
Biclin (E)	Amikacin	63
Biklin (D)	Amikacin	63
Binotal (D)	Ampicillin	69
Biocef (E)	Ceftibuten	87

Trade names (selection)	Generics	Page
Bristopen (F)	Oxacillin	131
Cancidas (D, UK, F, I, E)	Caspofungin	74
Ceclor (E)	Cefaclor	75
Céfacidal (F)	Cefazolin	79
Cefaclor (I)	Cefaclor	75
Cefadina (E)	Cefalexin	77
Cefadrex (E)	Cefazolin	79
Cefadril (I)	Cefadroxil	76
Cefixoral (I)	Cefixime	81
Cefroxil (E)	Cefadroxil	76
Cefurim (I)	Cefuroxime	89
Cefuroxim-Lilly (D)	Cefuroxime	89
Cepazine (F)	Cefuroxime	89
Cepazine (F)	Cefuroxime axetil	91
Cephalexin (D)	Cefalexin	77
Cephazolin fresenius (D)	Cefazolin	79
Cephoral (D)	Cefixime	81
Cepimex (I)	Cefepime	80
Ceporexine (F)	Cefalexin	77
Certomycin (D)	Netilmicin	126
Chemicetina (I)	Chloramphenicol	92
Chloromycetin (E)	Chloramphenicol	92

Trade names (selection)	Generics	Page
Ciflox (F)	Ciprofloxacin	93
Ciprobay (D)	Ciprofloxacin	93
Ciprobay Uro (D)	Ciprofloxacin	93
Ciproxin (UK, I)	Ciprofloxacin	93
Claforan (D, UK, F, E)	Cefotaxime	82
Clamoxyl (F)	Amoxicillin	65
Clamoxyl (E)	Amoxicillin/clavulanate	66
Claramid (F)	Roxithromycin	144
Clont (D)	Metronidazole	122
Colimicina (I, E)	Colistin	96
Colimycine (F)	Colistin	96
Colistin (D, I)	Colistin	96
Colomycin (UK)	Colistin	96
Combactam (D)	Sulbactam	146
Crystapen (UK)	Penicillin G (benzylpenicillin)	132
Cubicin (D, UK, F, I, E)	Daptomycin	99
Curoxima (E)	Cefuroxime	89
Cyllind (D)	Clarithromycin	94
Dalacin C (UK, F, I, E)	Clindamycin	95
Dalacine (F)	Clindamycin	95
Deflamon (I)	Metronidazole	122

Trade names (selection)	Generics	Page
Dexambutol (F)	Ethambutol	106
Diatricin (E)	Vancomycin	153
Diflucan (D, UK, I, E)	Fluconazole	108
Diprogenta (E)	Gentamicin	113
Distaclor (UK)	Cefaclor	75
Doribax (D, UK, F, I, E)	Doripenem	101
Dosil (E)	Doxycycline	102
Doxyhexal (D)	Doxycycline	102
Ecalta (D, UK, F, I, E)	Anidulafungin	71
ektebin (D)	Protionamide	139
Elobact (D)	Cefuroxime axetil	91
EMB-Fatol (D, UK, F, I, E)	Ethambutol	106
Enoxen (I)	Enoxacin	103
Enoxor (D, F)	Enoxacin	103
Eremfat (D)	Rifampin/rifampicin	143
Eritrocin (I)	Erythromycin	105
Erymax (UK)	Erythromycin	105
Erythrocin (D, UK)	Erythromycin	105
Érythrocine (F)	Erythromycin	105
Estreptomycina (E)	Streptomycin	145
Eusaprim (D, F)	Cotrimoxazole	97
Extencilline (F)	Penicillin G (benzylpenicillin)	132

Trade names (selection)	Generics	Page
Flagyl (D, UK, F, I, E)	Metronidazole	122
Floxapen (UK)	Flucloxacillin	107
Fortam (E)	Ceftazidime	86
Fortum (D, UK, F)	Ceftazidime	86
Fosfocin (I)	Fosfomycin	111
Fosfocine (F)	Fosfomycin	111
Fungata (D)	Fluconazole	108
Fungilin (UK)	Amphotericin B	67
Fungizoma (E)	Amphotericin B	67
Fungizone (F, I)	Amphotericin B	67
Furadantin (D, UK)	Nitrofurantoin	128
Furadantine (F)	Nitrofurantoin	128
Furantoina (E)	Nitrofurantoin	128
Furil (I)	Nitrofurantoin	128
Gentalline (F)	Gentamicin	113
Gentalyn (I)	Gentamicin	113
Genticin (UK)	Gentamicin	113
Gernebcin (D)	Tobramycin	151
Glazidim (I)	Ceftazidime	86
Gobemicina (E)	Ampicillin	69
Grüncef (D)	Cefadroxil	76
Infectofos (D)	Fosfomycin	111

Trade names (selection)	Generics	Page
InfectoStaph (D)	Dicloxacillin (p.o.)	100
InfectoStaph (D)	Oxacillin (i.v.)	131
Invanz (D, UK, F, I, E)	Ertapenem	104
Isocef (I)	Ceftibuten	87
Isocillin (D)	Penicillin V (phenoxymethylpenicillin)	134
Isoniazid (UK, E)	Isoniazid (INH)	116
Isozid (D, UK, F, I, E)	Isoniazid (INH)	116
Izilox (F)	Moxifloxacin	126
Keflex (UK)	Cefalexin	77
Keforal (F, I)	Cefalexin	77
Keimax (D)	Ceftibuten	87
Kemicetine (UK)	Chloramphenicol	92
Ketek (D, UK, F, I, E)	Telithromycin	149
Klacid (D, I, E)	Clarithromycin	94
Klaricid (UK)	Clarithromycin	94
Klinomycin (D)	Minocycline	125
Lorafem (D)	Loracarbef	120
Macrosil (E)	Roxithromycin	144
Mavid (D)	Clarithromycin	94
Maxipime (D, E)	Cefepime	80
Megacillin oral (D) and other in D	Penicillin V (phenoxymethylpenicillin)	134

Trade names (selection)	Generics	Page
Meronem (D, UK, E)	Meropenem	121
Merrem (I)	Meropenem	121
Miambutol (I)	Ethambutol	106
Minocin (I, E)	Minocycline	125
Minocin MR (UK)	Minocycline	125
Monocline (F)	Doxycycline	102
Monuril (D)	Fosfomycin	111
Monurol (E)	Fosfomycin	111
Moronal (D)	Nystatin	129
Myambutol (D, E)	Ethambutol	106
Mycobutin (D, UK, I)	Rifabutin	141
Mycostatin (I)	Nystatin	129
Mycostatine (F)	Nystatin	129
Mynocine (F)	Minocycline	125
Naxy (F)	Clarithromycin	94
Nebcine (F)	Tobramycin	151
Necopen (E)	Cefixime	81
Netilin (UK)	Netilmicin	126
Netrocin (E)	Netilmicin	126
Nétromicine (F)	Netilmicin	126
Nettacin (I)	Netilmicin	126
Nicozid (I)	Isoniazid (INH)	116