

Contents

Sydney M. Finegold, Editor:

Introduction xi

SESSION I: CHEMISTRY, BIOCHEMISTRY, AND BIOLOGICAL ACTIVITY

Georges E. Jolles:

Origin and Anti-infective Activities of Metronidazole 3

Miklós Müller, Donald G. Lindmark and John McLaughlin:

Mode of Action of Metronidazole on Anaerobic Microorganisms 12

James R. Gillette:

Bioactivation of Nitro Heterocyclic Compounds to Chemically Reactive Metabolites and Superoxide 20

I.R. Ferguson:

The Assay of Metronidazole 23

Richard Templeton:

Metabolism and Pharmacokinetics of Metronidazole: A Review 28

Edward D. Ralph and William M.M. Kirby:

Human Pharmacology of Oral Metronidazole as Determined by Bioassay 50

SESSION II: ESTABLISHED THERAPEUTIC USES

Eric J. Baines:

Metronidazole: Sixteen Years of Developments 61

Herman L. Gardner:

Urogenital Trichomoniasis 72

R.D. Catterall:

Alternative Dosage Regimens in Trichomoniasis 79

A. Siboulet:

Current Epidemiological Aspects of Urogenital Trichomoniasis 83

E.B. Adams:

Metronidazole in Invasive Amebiasis 87

L.J. André:

Our Conception of the Treatment of Amebiasis 94

S.G. Wright, A.M. Tomkins and A.D.M. Bryceson:

Metronidazole in Giardiasis 98

SESSION III: SAFETY EVALUATION

R.D. Catterall:

Fifteen Years Experience with Metronidazole 107

Robert G. Bost:

Metronidazole: Toxicology and Teratology 112

Herbert S. Rosenkranz and William T. Speck:

Studies on the Significance of the Mutagenicity of Metronidazole for *Salmonella typhimurium* 119

Robert G. Bost:

Metronidazole: Mammalian Mutagenicity 126

Francis J.C. Roe:

Metronidazole: Tumorigenicity Studies in Mice, Rats and Hamsters 132

John H. Rust:

An Assessment of Metronidazole Tumorigenicity:
Studies in the Mouse and Rat 138

SESSION IV: NEW THERAPEUTIC USES—RADIOSENSITIZATION

R.L. Willson:

Metronidazole (Flagyl®) in Cancer Radiotherapy:
A Historical Introduction 147

A.M. Rauth:

In Vivo Testing of Metronidazole as a Hypoxic Cell Radiosensitizer 176

Raul C. Urtasun, Pierre Band, Harvey Rabin and J. Donald Chapman:

The Use of High Dose Metronidazole in Clinical Oncology 185

R. Sutherland, J. Richardson, C. Koch and R. Sridhar:

Radiation Sensitization And Cytotoxicity of Metronidazole in an *In Vitro*
Tumor Model 193

SESSION V: ANAEROBIC BACTERIA AND THEIR ROLE IN DISEASE

Lillian V. Holdeman:

Classification of Anaerobic Bacteria 207

Ella M. Barnes:

Problems in the Classification of Anaerobic Bacteria 215

W.E.C. Moore:

Anaerobes as Normal Flora: Gastrointestinal Tract 222

H. Werner:

Anaerobes as Normal Flora: Other Sites 229

Alex. C. Sonnenwirth:

Anaerobic Culture Techniques 236

Herbert S. Goldberg:

Recent Observations on Anaerobic Infections of Animals 245

John G. Bartlett:

Anaerobes in Human Infections 259

SESSION VI: USE OF METRONIDAZOLE IN THERAPY OF
ANAEROBIC INFECTIONS IN MAN

Sydney M. Finegold:

Current Status of Therapy of Anaerobic Infections in Humans 273

Vera L. Sutter and Sydney M. Finegold:

In Vitro Studies with Metronidazole Against Anaerobic Bacteria 279

Anthony W. Chow, Dominick Bednorz and Lucien B. Guze:

Susceptibility of Obligate Anaerobes to Metronidazole: An Extended Study of
1,054 Clinical Isolates 286

J. Bittner and Viorica Munteanu:

Potentiating Action of Combining Metronidazole and Penicillin Against *C.
perfringens* *In Vitro* 293

**Peter Corrodi, David F. Busch, Vera L. Sutter, Palma A. Wideman,
Dorothy M. Citronbaum and Sydney M. Finegold:**

Factors Affecting the *In Vitro* Antibacterial Activity of Metronidazole 299

**Robert P. Lewis, Palma A. Wideman, Vera L. Sutter and
Sydney M. Finegold:**

The Effect of Metronidazole on Human Fecal Flora 307

M. Hutchinson, H.P. Lambert, D. Loughman and M.W.E. Morgan:

Metronidazole in Experimental Peritonitis 320

J. Bittner and Judith Ardeleanu:

Preventive Action of Metronidazole on Experimental *C. perfringens* Induced
Gas Gangrene in Guinea Pigs 329

D.L. Shinn:

Vincent's Disease and Its Treatment 334

Francis P. Tally:

Treatment of Anaerobic Pleuropulmonary Infection and Preliminary
Evaluation of Metronidazole 341

W. McNaught:

Metronidazole in the Treatment of Intra-abdominal Infections 347

William J. Ledger, William Lewis, Steven Golde and Carol Gee:

The Use of Metronidazole in Obstetric and Gynecologic Infections 353

John F. Warner and Richard B. Prior:

Clinical and *In Vitro* Studies of the Bactericidal Activity of Metronidazole
Against Anaerobic Bacteria 359

**Anthony W. Chow, Ralph E. Barry, Valerie Patten, John R. Benfield
and George A. Bray:**

Effect of Metronidazole on the Intestinal Microflora in Patients with
Jejunioileal Bypass 368

SESSION VII: PROPHYLAXIS OF ANAEROBIC INFECTIONS AND
MISCELLANEOUS ASPECTS OF METRONIDAZOLE
USAGE IN MAN

A.T. Willis, W.M. Mee, I.R. Ferguson and S.A. Seligman:

Metronidazole in the Prevention and Treatment of Bacteroides Infections in
Surgical Patients 377

G. Gillespie and W. McNaught:

Prophylactic Oral Metronidazole in Intestinal Surgery 385

J.B. Selkon, H.R. Ingham and J.H. Hale: Experience with Intravenous Administration of Metronidazole in Man	390
Susannah Eykyn and Ian Phillips: Intravenous Metronidazole in the Treatment of Anaerobic Sepsis	393
Gilbert A. Cerat, Lucie L. Cerat, Martin C. McHenry, John G. Wagner, Phillip M. Hall and Thomas L. Gavan: Metronidazole in Renal Failure	404
Bo Ursing: Treatment of Crohn's Disease	415
P.S. Davies, J. Rhodes, R.V. Heatley and E. Owen: Metronidazole in the Treatment of Chronic Proctitis: A Controlled Trial	422
Sydney M. Finegold: Summary of Conference	426
Index to Authors	436