

Preface

Malaria is a devastating disease that extracts huge health and economic costs from the poorest countries in endemic regions. Malaria is caused by single celled parasites, belonging to the genus *Plasmodium* that have infected humans (and related primates) for thousands of years. In its different specific and clinical guises, malaria is one of the strongest selective forces to have shaped our recent evolution. These parasites have already evaded one attempt at eradication in the mid twentieth century. Now, there are renewed attempts to control and eventually eradicate what remains one of the world's biggest killers.

With ambitious new targets set to reduce the global burden of malaria, we must urgently develop new tools for disease control, as well as optimising and re-evaluating our current tools. An indispensable part of controlling malaria is the capability of treating the disease effectively, despite the ability of this highly mutable parasite to develop resistance sooner or later to all classes of antimalarials. Understanding of how antimalarial drugs might work, how best to use them and how to assess for resistance to them has expanded considerably in the past few years. This book aims to capture these recent advances in our understanding of all antimalarial classes, and discuss how this information is pertinent for treating patients.

The introductory chapter details the disease, its current political, financial and technical context, alongside the policies and tools required to make eradication a possibility. Subsequent chapters cover the history, chemistry, mechanisms of action and resistance, preclinical and clinical use, pharmacokinetics and safety and tolerability of our current antimalarial drug armamentarium. Each chapter reflects the unique perspectives of its expert authors, and often describes new ideas and directions for study. There is particular emphasis on artemisinins (and related next generation peroxides) that have become the frontline treatment for malaria, as part of artemisinin-based combination therapies (ACTs). The artemisinins may have become established in ACTs in the past decade, but they are now being challenged by the potential for resistance that has recently been described and is only just being defined.

Other chapters authoritatively discuss our antimalarial drug development pipeline and how this is being shaped by public/private partnerships; molecular markers

of antimalarial drug resistance, their use in monitoring treatment failures and the insights they provide into the action of these drugs; malaria prevention strategies, including chemoprophylaxis, where the risk of catching malaria is balanced against the risk of side effects of drugs and the critical use of diagnostics to improve the identification of malaria and to refine treatment strategies.

The treatment and prevention of malaria is a fascinating and complex subject – made all the more interesting now that malaria eradication is back on the global agenda. We hope that readers will be stimulated by this volume and that they may find its contents useful in dealing with malaria.

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