

**Edited by**  
**J. D. Williams and A. M. Geddes**

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# **CHEMOTHERAPY**

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**Volume 1**  
**Clinical Aspects**  
**of Infections**

# CHEMOTHERAPY

## Volume 1 Clinical Aspects of Infections

Edited by  
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# CHEMOTHERAPY

Volume 1

Clinical Aspects of Infections

# CHEMOTHERAPY

- Volume 1 Clinical Aspects of Infections**  
Prophylaxis; life-threatening infections; infection in leukaemia; surgical infection; anaerobic infection; respiratory and urinary tract infections; amikacin.
- Volume 2 Laboratory Aspects of Infections**  
Sensitivity testing; assay methods; animal models of infection; sisomycin; tobramycin.
- Volume 3 Special Problems in Chemotherapy**  
Tuberculosis; genital tract infections; antibiotic resistance and mode of action; topical chemotherapy and antisepsis.
- Volume 4 Pharmacology of Antibiotics**  
Tissue concentrations; pharmacokinetics; untoward effects of antibiotics.
- Volume 5 Penicillins and Cephalosporins**  
Penicillins and cephalosporins; betalactamases; new agents.
- Volume 6 Parasites, Fungi, and Viruses**  
Parasitic infections; fungal infections; chemotherapy of viruses; co-trimoxazole.
- Volume 7 Cancer Chemotherapy I**  
Symposia — new drugs and approaches; cell and pharmacokinetics; potentiators of radiotherapy; in vitro screening systems; immunological aspects.
- Volume 8 Cancer Chemotherapy II**  
Free papers — new drugs and approaches; cell and pharmacokinetics; mechanisms of action; new analogues; cancer chemotherapy of specific organs.

# CHEMOTHERAPY

Proceedings of the  
9th International Congress of Chemotherapy  
held in London, July, 1975

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## Preface

The International Society of Chemotherapy meets every two years to review progress in chemotherapy of infections and of malignant disease. Each meeting gets larger to encompass the extension of chemotherapy into new areas. In some instances, expansion has been rapid, for example in cephalosporins, penicillins and combination chemotherapy of cancer - in others slow, as in the field of parasitology. New problems of resistance and untoward effects arise; reduction of host toxicity without loss of antitumour activity by new substances occupies wide attention. The improved results with cancer chemotherapy, especially in leukaemias, are leading to a greater prevalence of severe infection in patients so treated, pharmacokinetics of drugs in normal and diseased subjects is receiving increasing attention along with related problems of bioavailability and interactions between drugs. Meanwhile the attack on some of the major bacterial infections, such as gonorrhoea and tuberculosis, which were among the first infections to feel the impact of chemotherapy, still continue to be major world problems and are now under attack with new agents and new methods.

From this wide field and the 1,000 papers read at the Congress we have produced Proceedings which reflect the variety and vigour of research in this important field of medicine. It was not possible to include all of the papers presented at the Congress but we have attempted to include most aspects of current progress in chemotherapy.

We thank the authors of these communications for their cooperation in enabling the Proceedings to be available at the earliest possible date. The method of preparation does not allow for uniformity of typefaces and presentation of the material and we hope that the blemishes of language and typographical errors do not detract from the understanding of the reader and the importance of the Proceedings.

K. HELLMANN, Imperial Cancer Research Fund  
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## WELCOMING ADDRESS

William Brumfitt

President of the Congress

Ladies and Gentlemen,

On behalf of the Organising Committee of the 9th International Congress of Chemotherapy it is my pleasure and privilege to welcome you to London.

As in the case of previous Congresses the Organising Committee has been anxious to bring together an audience of experts actively engaged in the study of Antimicrobial and Cancer Chemotherapy. The Organising Committee was elected in order to represent the major disciplines concerned and had the difficult task of assembling a suitable programme.

Despite their importance it was necessary to exclude certain subjects because of the limited time available. The view was taken that it would be better to deal with the chosen subjects in detail rather than to discuss more subjects in less depth. The accent has been laid more on scientific and medical progress rather than technological advances which in our view are best dealt with in communications to specialist journals. In selecting the topics for presentation we have been acutely aware of those subjects likely to lead to lively discussion.

We are pleased to see so many associate members and we must pay high tribute to Dr. David Hughes who has seen to it that an attractive and varied social programme has been arranged. I have also received great support from Dr. Jacomb, our Treasurer. Dr. Fred Wrigley, CBE, who was our business consultant, gave invaluable help over the two years of preparation and Mr. Douglas Armitage made the banking arrangements which in view of the presence of delegates from 49 countries was no small task.

In spite of the many difficulties that inevitably arise in planning such a congress, a friendly atmosphere was maintained between all the members of the Organising Committee - to whom I am extremely grateful.

Finally, we must thank those members of the Pharmaceutical Industry who not only gave generous financial support but produced the compounds about which much of the discussion was based.

## OPENING OF THE CONGRESS

David Owen

Minister of State

Department of Health and Social Security

My first duty is to apologise on behalf of the Secretary of State, Mrs. Barbara Castle, that she is unable to be present owing to a Cabinet Meeting that has been called for this morning. As a Vice Patron of your Organisation she was looking forward very much to welcoming this important Congress to London and welcoming the delegates on behalf of Her Majesty's Government.

It is rare in this country for a doctor to be Minister of Health; indeed at times one suffers an identity crisis. Last night as I was filling in my application for a new passport I had to decide what was my occupation: it could have been Minister of the Crown, it could have been Member of Parliament but eventually I settled for my first love and my true identity namely a Medical Practitioner. I represent a generation of doctors that has never known any other era than that of chemotherapy. For us it is difficult to envisage medical and surgical practice in the 1920s and before that. We have lived all our medical lives with the knowledge that we can use the powerful agents of chemotherapy to help our patients and this must undoubtedly have influenced our whole attitude to medicine and science. This Congress has many distinguished people present who have all made unique contributions to medical science. It is in some ways invidious for me to single any of them out but I hope you will allow me to mention three; Sir Ernst Chain, has already been mentioned. His contribution to the discovery of penicillin is world known. Professor Abraham, who is a Vice President of your Congress and with me here on the platform, has made a major contribution to the discovery not only of penicillin but also of cephalosporin and Dr. Umezawa, from Japan, has made a major contribution in the discovery of kanamycin.



When I think of the advances in chemotherapy my mind goes back to when as a young house physician, recently qualified, I admitted straight from an ambulance into a children's ward a small child desperately ill, semi-comatose and clearly dying. That child had bacterial meningitis, and yet, following immediate treatment, within 24 hours we had the greatest difficulty in keeping the child in bed and from running around the ward. When one has witnessed one of those miracles of medical science, it undoubtedly changes many of one's basic attitudes.

It we look historically at what has happened over tuberculosis - in the early 1940s the annual death rate from tuberculosis was around 26,500 people in the United Kingdom, in 1971 it had dropped to only 1,438. Notifications from tuberculosis were running at 50,000 a year in 1956, today there are less than 10,000. Improved living standards, better hygiene, BCG vaccinations, all made their contribution but over the last two decades no-one can doubt the major advance has come from chemotherapy.

In cancer therapy there have too been substantial advances. In Hodgkin's disease, chemotherapy is making a real contribution. Combination chemotherapy in many aspects of cancer therapy is showing signs of progress and particularly in leukaemia and the leukaemia of childhood there has been really remarkable progress in the last five years.

If one looks at the infections that still afflict the world, the impact of chemotherapy on syphilis, meningitis, the plague, leprosy, has been quite dramatic.

No one individual, no one group, no one discipline has made these advances possible, it has been the result of joint work and multidisciplinary activity.

I am glad to pay tribute to the interest and support that the pharmaceutical industry has given to this Congress and it would be foolish to pretend that many of the advances that have taken place in chemotherapy could have been done without the effort and energy of the pharmaceutical industry. No doctor believes that advances in chemotherapy can be undertaken in future without a genuine partnership developing between the pharmaceutical industry, chemists, doctors, medical research, both in universities and institutes,

I feel I must praise the breadth and the depth of the scientific programme which you have put on for this Congress. It shows the range of modern chemotherapy and in particular I was interested in the joint meetings between people facing the interesting problems that are now arising from much of modern cancer therapy. There is an obvious need to bring in to the discussions physicians interested in the control of infections in view of the many people receiving strong