Pediatric Cardiology

Pediatric Cardiology

Proceedings of the Second World Congress

Edited by

Eugenie F. Doyle Mary Allen Engle Welton M. Gersony William J. Rashkind Norman S. Talner

With 308 Illustrations



Eugenie F. Doyle, M.D., New York University Medical Center, New York, New York 10016 U.S.A.

Mary Allen Engle, M.D., Cornell University Medical Center, New York, New York 10021 U.S.A.

Welton M. Gersony, M.D., Columbia-Presbyterian Medical Center Babies Hospital, New York, New York 10032 U.S.A.

William J. Rashkind, M.D., Children's Hospital of Philadelphia, Philadelphia, Pennsylvania 19104 U.S.A.

Norman S. Talner, M.D., Yale University School of Medicine, New Haven, Connecticut 06510 U.S.A.

Library of Congress Cataloging-in-Publication Data Main entry under title: Pediatric Cardiology

Proceedings of the Second World Congress of Pediatric Cardiology, held in New York City, 2-6 June 1985.

Includes bibliographies and index.

1. Pediatric cardiology—Congresses. I. Doyle, E.F. (Eugenie F.) II. World Congress of Pediatric Cardiology, (2nd: 1985: New York, N.Y.) [DNLM: 1. Cardiovascular Diseases—in infancy & childhood—congresses. WS 290 P3713 1985]

RJ421.P425 1986 618.92/12 85-24990

© 1986 by Springer-Verlag New York, Inc.

All rights reserved. No part of this book may be translated or reproduced in any form without written permission from Springer-Verlag, 175 Fifth Avenue, New York, New York 10010, U.S.A. The use of general descriptive names, trade names, trademarks, etc. in this publication, even if the former are not especially identified, is not to be taken as a sign that such names, as understood by the Trade Marks and Merchandise Marks Act, may accordingly be used freely by anyone.

While the advice and information in this book is believed to be true and accurate at the date of going to press, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Permission to photocopy for internal or personal pack, or the internal or personal use of specific clients, is granted by Springer-Verlag, New York Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of \$0.00 per copy, plus \$0.20 per page is paid directly to CCC, 21 Congress Street, Salem, MA 01970, U.S.A. Special requests should be addressed directly to Springer-Verlag, New York, 175 Fifth Avenue, New York, NY 10010, U.S.A.

ISBN 0-387-96204-2/1986 \$0.00 + .20

Typeset by Kingsport Press, Kingsport, Tennessee. Printed and bound by Halliday Lithograph, West Hanover, Massachusetts. Printed in the United States of America.

9 8 7 6 5 4 3 2 1

ISBN 0-387-96204-2 Springer-Verlag New York Berlin Heidelberg Tokyo ISBN 3-540-96204-2 Springer-Verlag Berlin Heidelberg New York Tokyo

Foreword

At a significant point in the life of an individual or an organization, it is normal that one reminisces and savors the qualities of the past. In doing so, one may learn of facts and factors that explain the present and even project into the future.

So it is with the Second World Congress of Pediatric Cardiology. We can at this time avail ourselves of a panoramic view, not only of the present but also an exposure of the past, and a glimpse of what lies ahead. When Dr. Jane Somerville and Professor Fergus Macartney proposed developing a World Congress of Pediatric Cardiology, the factors of vision and imagination were driving forces. These, with the aid both of hard work and dedication to purpose, led to the being of the First Congress.

The major success of that meeting was not without premonitory concerns as to the width of multinational acceptance of a concept that Pediatric Cardiology had come of age and a firm foundation for academic interchange existed. The Congress showed that much had been learned, and that there were many eager to share of accumulated knowledge and reflections of skills with the very many hundreds who came to the First Congress. The responses to the First Congress were so enthusiastic that the idea of having a continuum of World Congresses of Pediatric Cardiology was widely accepted. I do not know that the subject was even debated after the First Congress went into session.

The Second World Congress of Pediatric Cardiology has just been completed, and the record of its organization and of the many presentations are recorded in these Proceedings. We recognize that the factors of vision and imagination, hard work and dedication to purpose once again were qualities that moved the program forward by the organizing group consisting of Drs. Eugenie Doyle, Mary Allen Engle, Welton Gersony, William Rashkind, and Norman Talner. Each person with special talents and with coordination among themselves harnessed the momentum of the First Congress. They went further in adding a major thrust of energy. In doing so, they have projected the course of the concept of World Congress to even greater heights than had hitherto been known, experienced or imagined. The elements of

vi Foreword

expansion of the organizing committee, not only in people but in cities of representation, shall remain an exemplary element in the Congress concept. Many of us are appreciative recipients of the fruits of labor of these individuals, and we shall long remain so. I congratulate the field of Pediatric Cardiology for having available such willing, dedicated and talented people.

The Proceedings of the Second Congress is of encyclopedic nature. It is the most comprehensive and up-to-date coverage of the many and broad facets of Pediatric Cardiology in its present state. It is, in effect, a reservoir of the State of the Art in 1985 and shall remain an important educational and reference work. Medicine is constantly progressing. As the Second Congress reflects advances since the time of the First, so it is properly to be anticipated that the Third Congress will build upon concepts and facts expressed in these Proceedings.

We have good reason to have great expectations for the next Congress. Nevertheless, at this time some reflection on issues broader than those related to the scientific and academic sides of Pediatric Cardiology are, in my opinion, in order. It is apparent that while the participants and audience of these Congresses represent broad international representation, the involvement is short of being geographically complete. Correction of this deficiency would provide many opportunities for improved recognition of world wide cardiovascular problems in children and, more important, improved understanding between peoples.

As physicians, we have untold and immeasurable potential opportunities as ambassadors of good will between peoples, regardless of variations in political views. The fruits of ever-widening good will would inevitably result in improvement in the health and happiness of the children everywhere. As indices of such improvement would be advances in prevention of immune, infectious and nutritional heart diseases. Hopefully, the Third World Congress will ever widen opportunities for sharing of ideas and the potential for greater understanding between people of all nations. In doing so, it will serve to give both the sick child and the well child an opportunity to grow up in a world at peace.

Jesse E. Edwards

Preface

The initial World Congress of Pediatric Cardiology was held in London in 1981. This represented the first time that an international meeting was, solely focused on the infant, child and adolescent with heart disease. The resounding success of these sessions created a wave of enthusiasm that dictated the planning of a Second World Congress. The United States was selected as the host country, and an organizing committee was established with New York City designated as the site for the Congress. This committee, consisting of pediatric cardiologists from New York, Philadelphia, and New Haven, in close collaboration with cardiovascular surgeons, pediatric cardiology nurses, technologists, and an international consultative committee, developed a broadbased program, which was presented at the Waldorf Astoria Hotel between June 2-6, 1985. The goal of the congress was to update all aspects of the discipline including: cardiovascular imaging; interventional catheterization procedures; electrophysiology, cardiovascular development, acquired cardiac disease, new methods in the management of congestive heart failure, modern cardiovascular nursing practice, and "state-of-the-art" surgical approaches, including cardiac transplantation. The basic format of the Congress consisted of morning plenary sessions and simultaneous afternoon presentations comprising all aspects of pediatric cardiology.

The material selected for presentation at this meeting bears strong witness to the rapid progress that has taken place in this field. Pediatric cardiology techniques and practices have evolved from conventional radiologic techniques to color Doppler ultrasonic imaging; from single-plane venous angiography to angled views; from simple repair of a ductus arteriosus to surgery for hypoplastic left heart syndrome and underdeveloped right ventricles; from the standard electrocardiogram to sophisticated electrophysiologic studies; and from the cardiac catheter solely as a diagnostic tool to its use as a therapeutic modality. In the area of acquired cardiac disease, rheumatic fever and rheumatic heart disease continue to constitute a major global threat to the child, although having largely disappeared in many regions of the world. At the same time, mucocutaneous lymph node syndrome has emerged as an international public health problem. Efforts to understand the pediatric

viii

origins of systemic hypertension and premature atherosclerosis continue as part of a world wide emphasis on preventive medicine.

In publishing these proceedings, it is the hope of the organizers that we can provide the reader with a positive educational experience that reflects the flavor and excitement created by the distinguished participants in the Congress who represented fifty-five nations. Armed with enthusiasm gleaned from this endeavor, we look forward to the Third World Congress planned for Thailand five years hence.

E.F. Doyle M.A. Engle W.M. Gersony W.J. Rashkind N.S. Talner

Presenters

ADAMS, FORREST H. Hospital Research Center, San Diego, California, USA ADDONIZIO, LINDA J. Babies Hospital, New York, New York, USA

ADLEMAN, NEIL. The Hospital for Sick Children, Toronto, Ontario, Canada Alboliras, Ernerio T. Department of Pediatrics, Mayo Clinic, Rochester, Minnesota, USA

ALEXANDER, JAMES A. Thoracic/Cardiovascular, University of Florida, Gainesville, Florida, USA

ALLAN, LINDSEY. Department of Pediatrics, Guy's Hospital, London, England ALLEN, HUGH D. Department of Pediatrics, University of Arizona Health Sciences Center, Tucson, Arizona, USA

ALPERT, BRUCE S. Associate Professor of Cardiology, Le Bonheur Children's Medical Center, Memphis, Tennessee, USA

ALVA, CARLOS. Odesa 1222-402, Col Portales, D.F., Mexico City, D. F., Mexico

AMATO, JOSEPH J. Children's Hospital of New Jersey, United Hospitals, Newark, New Jersey, USA

ANDERSON, ROBERT H. Cardiothoracic Institute, Brompton Hospital, London, England

Anderson, Robert W. University of Minnesota, Mayo Building, Minneapolis, Minnesota, USA

ARCILLA, RENE. Section of Pediatric Cardiology, The University of Chicago, Chicago, Illinois, USA

AREIAS, JOSE C. Rua Damiao de Gois, Porto, Portugal

ATIK, EDMAR. Rua 13 de Maio, Sao Paulo, Brazil

ATTIE, FAUSE. Instituto Nacional de Cardiologia Ignacio Chavez, Juan Badiano 1, Mexico, D. F., Mexico

ATTUEL, PATRICK. Cardiology Department, Hospital Lariboisiere, Paris, France

AZANCOT, ANNABELLE. Hopital Bretonneau, 7 bis rue Carpeaux, Paris, France Aziz, Kalim U. National Institute of Cardiovascular Diseases, Rafiqui Shaheed Road, Karachi, Pakistan

xxxiv Presenters

AZZOLINA, GAETANO. Tuscan Heart and Chest Center, Via Manzoni 12, Florence, Italy

- BABA, KUNIZOH. 4-6 Nimatojima Nakamachi, Chuoh-ku, Kobe, Japan
- Вава, Кіуоsні. Kurashiki Central Hospital, 1-1-1 Miwa, Kurashiki, Okayama, Japan
- BAILEY, LEONARD. Loma Linda University Medical Center, Department of Surgery, Loma Linda, California, USA
- Balboni, Filippo A. Pediatric Cardiology, St. Francis Hospital, Roslyn, New York, USA
- BANO-RODRIGO, ANTONIO. Children's Hospital, Cardiac Registry, Boston, Massachusetts, USA
- Barber, Gerald. Department of Pediatrics/Cardiology, UCLA School of Medicine, Los Angeles, California, USA
- BARGERON, JR., LIONEL M. Department of Pediatric Cardiology, University of Alabama in Birmingham, University Station, Birmingham, Alabama, USA
- BARRATT-BOYES, BRIAN. Green Lane Hospital, Green Lane West, Auckland, New Zealand
- BARST, ROBYN J. Columbia University College of Physicians & Surgeons, Pediatric Cardiology, New York, New York, USA
- BARTLETT, ROBERT H. University of Michigan Medical Center, Ann Arbor, Michigan, USA
- BAUM, DAVID. Department of Pediatrics, Stanford University Medical Center, Stanford, California, USA
- BECKER, ANTON. Department of Pathology, Perste Helmersstraat 104, Amsterdam, The Netherlands
- Bender, Jr., Harvey W. Vanderbilt University Medical Center, Nashville, Tennessee, USA
- Benson, Lee N. Division of Cardiology, The Hospital for Sick Children, Toronto, Ontario, Canada
- BERGER, STUART. Wyler Children's Hospital, Chicago, Illinois, USA
- BERMAN, JR., WILLIAM. University of New Mexico Medical Center, Albuquerque, New Mexico, USA
- BERMAN, MICHAEL A. University of Maryland, Baltimore, Maryland, USA BERMUDEZ-CANETE, R. Servicio de Cardiologia Pediatrica, Centro Especial Ramon y Cajal, Crta. Comenar, Madrid, Spain
- Bernstein, Daniel. University of California at San Francisco, San Francisco, California, USA
- BIDWAI, P. S. Department of Cardiology, Postgraduate Medical Institute, Chandigarh-160012, Chandigarh (U.T.), India
- BIERMAN, FREDRICK Z. Columbia Presbyterian Medical Center, Babies Hospital, New York, New York, USA
- BINET, JEAN-PAUL. Center Chirurgical Marie Lanelongue, Paris, France BLACKMAN, MARIE S. Physician's Office Building, 725 Irving, Syracuse, New York, USA
- BLANDON, ROBERTO. Cardiology Department, Children's Hospital, Panama City, Panama
- BLOCH, GERARD. Hopital Henri Mondor, Creteil, France
- Blumenthal, Sidney. 50 East 89th Street, New York, New York, USA
- Blumenthal, Sidney. Chaim Sheba Medical Center, Heart Institute Center, Tel Hashomer, Israel

Presenters

Borroughs, Nel. Walter Mackenzie Health Sciences Centre, Edmonton, Alberta, Canada

BOWMAN, FREDERICK O. Columbia University Medical Center, New York, New York, USA

BOXER, ROBERT A. North Shore University Hospital, Manhasset, New York, USA

Brickley, Suzanne E. St. Christopher's Hospital for Children, Philadelphia, Pennsylvania, USA

Brito-Perez, Jose M. Carretera Colmenar Vieso, Centro Ramon y Cajal, Madrid, Spain

Brom, A. Gerard. Department of Thoracic Surgery, University Hospital, Leiden, The Netherlands

Brown, John W. Department of Surgery, Indiana University School of Medicine, Indianapolis, Indiana, USA

BRUINS, CAROLINE. University Leiden, Wassenaar, The Netherlands

BUDACH, WILFRIED. Abteilung Kindercardiologie, Schwanenweg, Kiel, Federal Republic of Germany

BUHLMEYER, KONRAD. Deutsches Herzzentrum, Munchen, Federal Republic of Germany

BURQUEROS VALERO, MARGARITA. Neuva Zelanda, Madrid, Spain

Burn, John. Department of Human Genetics, University of Newcastle upon Tyne, Newcastle upon Tyne, England

Bursch, Joachim H. Abt, Kinderkardiologie, Schwanenweg Kiel, Federal Republic of Germany

Butto, Fouad. Pediatric Cardiology, University of Minnesota, Minneapolis, Minnesota, USA

CAPELLI, HORACIO. Olivos, Buenos Aires, Argentina

CARMINATI, MARIO. Via Fogazzaro, Bergamo, Italy

CARPENTIER, ALAIN. Hopital Broussais, 75014 Paris, France

CARR, IAN. Cook County Children's Hospital, Chicago, Illinois, USA

CASTANEDA, ALDO R. Children's Hospital, Harvard Medical School, Boston, Massachusetts, USA

CASTELLANOS, AGUSTIN W. 9741 S. W. 20th Street, Miami, Florida, USA

CHANG, CHAU-HSIUNG. 199 Tun-Hwa North Road, Taipei, Taiwan

CHANG, JIA-KAN. Ta-Tung St., Hsin-Tien, Taipei, Taiwan

CHAO, CHIH-CHUNG. Shyh-Yuann Road, Taipei, Taiwan

CHAUVAUD, SYLVAIN. Hopital Broussais, Paris, France

CHEATHAM, JOHN P. Pediatric Cardiology, The University of Nebraska Medical Center, Omaha, Nebraska, USA

CHIN, ALVIN J. Pediatrie Cardiology, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania, USA

CHOUSSAT, ALAIN. Hopital Cardiologique du Haut Leveque, Bordeaux Pessac, France

Сни, Shu-Hsun. National Taiwan University Hospital, Taipei, Taiwan

CLARK, EDWARD B. Division of Pediatric Cardiology, Hospitals & Clinics, University of Iowa, Iowa City, Iowa, USA

CLARK, BERNARD J. Division of Cardiology, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania, USA

CLYMAN, RONALD. Mt. Zion Medical Center/University of California at San Francisco, San Francisco, California, USA

- COCKERHAM, JOHN T. Children's Hospital, Boston, Massachusetts, USA
- COE, JAMES YASHU. Department of Cardiology, Hospital for Sick Children, Toronto, Ontario, Canada
- COLES, JOHN. The University of Alabama in Birmingham, University Station, Birmingham, Alabama, USA
- COLLI, ANNA. National Heart Hospital, London, England
- COLVIN, STEPHEN. New York University Medical Center, New York, New York, USA
- COOLEY, DENTON A. Texas Heart Institute, Houston, Texas, USA
- COOPER, RUBIN. The Brookdale Hospital Medical Center, Brooklyn, New York, USA
- CORONE, PIERRE. Hopital de la Pitie, Paris, France
- CORONEL, ALFREDO R. Clinica Bazterrica, Buenos Aires, Argentina
- COUMEL, PHILIPPE. Hopital Lariboisiere, Paris, France
- COVINO, ELVIO. Department of Surgery-Osaka University Hospital, Osaka, Japan
- COVITZ, WESLEY. Medical College of Georgia, Augusta, Georgia, USA
- CRAIG, BRIAN. The Hospital for Sick Children, Toronto, Ontario, Canada.
- CRUPI, GIANCARLO. Department of Cardiac Surgery, Bergamo, Italy
- CULHAM, J. A. GORDON. Children's Hospital, Vancouver, British Columbia, Canada
- CUMMING, GORDON R. University of Manitoba, Winnepeg, Manitoba, Canada CURRIE, PHILIP J. Department of Cardiology, Mayo Clinic, Rochester, Minnesota, USA
- DANIELSON, GORDON K. Mayo Medical School, Mayo Clinic/Foundation, Rochester, Minnesota, USA
- Danilowicz, Delores. New York University Medical Center, New York, New York, USA
- DAVIGNON, ANDRE L. Hopital Ste-Justine, Montreal, Quebec, Canada
- DE SMEDT, MARYSE. Department of Pediatrics, University Hospital Gronigen, Gronigen, The Netherlands
- DE VIVIE, E. RAINER. Clinic for Thoracic and Cardiovascular Surgery, Goettingen, Federal Republic of Germany
- DEGIOVANNI, J. V. Department of Cardiology, Children's Hospital, Ladywood, Birmingham, England
- DEVLOO-BLANCQUAERT, ANNE. State University of Gent, Academic Hospital, Gent, Belgium
- DEANFIELD, JOHN E. Thoracic Unit, The Hospital for Sick Children, London, England
- Di Carlo, Duccio. Dipartimento di Cardiologia Pediatrica, Ospedale Bambino Gesu, Rome, Italy
- Di Segni, Elio. Department of Cardiology, Meir General Hospital, Kfar-Saba, Israel
- DISESSA, THOMAS G. Department of Pediatric Cardiology, UCLA School of Medicine, Los Angeles, California, USA
- DIAZ, GABRIEL F. Hospital Pediatrico la Misericordia, Bogota, D. E. Colombia
- DICK, MACDONALD. II. C. S. Mott Children's Hospital, University of Michigan, Ann Arbor, Michigan, USA
- DONLEN, JUDY. Children's Hospital of Philadelphia, Philadelphia, Fennsylvania, USA
- 比为试读,需要完整PDF请访问: www.ertongbook.com

Presenters xxxvii

DOOLEY, KENNETH J. Department of Pediatrics, Emory University School of Medicine, Atlanta, Georgia, USA

- DOYLE, EUGENIE F. New York University Medical Center, New York, New York, USA
- DRISCOLL, DAVID. Mayo Clinic, Rochester, Minnesota, USA
- DUMONT, LOUIS. Chirurgie Cardiaque, Hopital Sainte-Justine, Montreal, Quebec, Canada
- Dunn, Jeffrey M. Cardiovascular Surgery, St. Christopher's Hospital for Children, Philadelphia, Pennsylvania, USA
- DUNNIGAN, ANN. Pediatric Cardiology, University of Minnesota, Minneapolis, Minnesota, USA
- DUPUIS, CLAUDE. Department of Pediatric Cardiology, Cardiology Hospital, Lille, France
- DYMNICKA, STANISLAWA. Cardiological Department Pediatric, Institute Medical Academy, Gdansk, Poland
- EBELS, TJARK. Department of Thoracic Surgery, University Hospital, Groningen, The Netherlands
- EBERT, PAUL A. Department of Surgery, University of California, San Francisco, San Francisco, California, USA
- EDWARDS, JESSE E. United Hospitals Medical Center, St. Paul, Minnesota, USA
- EFFMAN, ERIC L. Department of Radiology, Duke University Medical Center, Durham, North Carolina, USA •
- EHLERS, KATHRYN H. New York Hospital, New York, New York, USA
- EISENBERG, ROBERT. Albert Einstein College of Medicine, Montefiore Medical Center, The Bronx, New York, USA
- EKROTH, ROLF. Department of Thoracic and Cardiovascular Surgery, Sahlgrenska Hospital, Goteborg, Sweden
- EL-SAID, GALAL M. Cairo University, Maadi, Cairo, Egypt
- ELDREDGE, W. J. Deborah Heart and Lung Center, Browns Mills, New Jersey, USA
- EMMANOULIDES, GEORGE. Harbor UCLA Medical Center, Torrance, California, USA
- ENGLE, MARY ALLEN. Cornell University Medical Center, New York, New York, USA
- ERTUGRUL, ALI. Medical Faculty of Marmara University, Haydarpasa, Istanbul, Turkey
- EWERT, BIRGIT. Abteilung Kindercardiologie, Kiel, Federal Republic of Germany
- FAHEY, JOHN T. Department of Pediatrics, Yale University School of Medicine, New Haven, Connecticut, USA
- FERMONT, LAURENT. Service de Cardiologie Pediatrique, Hopital des Enfants-Malades, Paris, France
- FIEGL, AMI. Ramat Gan, Israel
- FISHER, RUSSELL G. Cleveland Clinic Foundation, Cleveland, Ohio, USA
- FISHER, DAVID J. Pediatric Cardiology, Texas Children's Hospital, Houston, Texas, USA
- FISHER, ELIZABETH, A. University of Illinois College of Medicine, Chicago, Illinois, USA
- FISK, RUTH A. 382 High Plain Road, Andover, Massachusetts, USA

xxxviii Presenters

FIXLER, DAVID E. Department of Pediatrics, University of Texas Health Sciences Center, Dallas, Texas, USA

- FONTAN, FRANCIS. Hopital Cardiologique du Haut Leveque, Bordeaux-Pessac, France
- FONTES, VALMIR F. Instituto Dante Pazzaneze, Sao Paulo, Brazil
- FOURNIER, ANNE. Department of Pediatric Cardiology, Jackson Memorial Hospital, University of Miami, Miami, Florida, USA
- Franklin, Rodney C. G. Thoracic Unit, The Hospital for Sick Children, London, England
- FREED, MICHAEL D. Children's Hospital, Boston, Massachusetts, USA
- FRICKER, F. JAY. 125 DeSoto Street, Pittsburgh, Pennsylvania, USA
- FRIEDLI, BEAT. Cardiac Unit, Clinique de Pediatrie HCU, Geneva, Switzerland
- FRIEDMAN, SIDNEY. Children's Hospital of Philadelphia, Philadelphia, Pennsylvania, USA
- FRIEDMAN, WILLIAM F. Department of Pediatrics, UCLA School of Medicine, UCLA Medical Center, Los Angeles, California, USA
- Fuhrman, Bradley P. University of Minnesota, Minneapolis, Minnesota, USA
- FUKUDA, TOYOKI. Tokyo Metropolitan Children's Hospital, Tokyo, Japan
- FUSTER, VALENTIN. Mayo Clinic, Rochester, Minnesota, USA
- FUTAKI, SHIHO. Department of Pediatrics, National Cardiovascular Center, Suita-shi, Japan
- Fyfe, Derek A. Pediatric Cardiology, Medical University of South Carolina, Charleston, South Carolina, USA
- FYLER, DONALD. Children's Hospital, Boston, Massachusetts, USA
- GAETANO, THIENE. Istituto di Anatomia Patologica, Padova, Italy
- GARDNER, TIMOTHY J. Department of Surgery, The Johns Hopkins Hospital, Baltimore, Maryland, USA
- GARSON, ARTHUR JR. Texas Children's Hospital, Pediatric Cardiology, Houston, Texas, USA
- GAY, WILLIAM A. JR. University of Utah Medical Center, Salt Lake City, Utah, USA
- GEER, MAJOR. Division of Cardiology, Harlem Hospital, New York, New York, USA
- GELBAND, HENRY. University of Miami, School of Medicine, Miami, Florida, USA
- GEORGE, Laly. Division of Cardiology, Children's Hospital, San Diego, California, USA
- GERSONY, WELTON M. Columbia-Presbyterian Medical Center, Babies Hospital, New York, New York, USA
- GESSNER, IRA H. University of Florida College of Medicine, Gainesville, Florida, USA
- GEWITZ, MICHAEL. Department of Pediatric Cardiology, New York Medical College, Munger Pavilion, Valhalla, New York, USA
- GILL, CARL C. The Cleveland Clinic Foundation, Cleveland, Ohio, USA
- GILLETTE, PAUL C. Director Pediatric Cardiology, Medical University of South Carolina, Charleston, South Carolina, USA
- GIRARDET, J. P. Hopital Trousseau, Paris Cedex, France
- GIROD, DONALD A. Section on Cardiology, Indiana University Medical Center. Indianapolis, Indiana, USA

Presenters xxxix

GLENN, WILLIAM W. L. Department of Surgery, Yale University School of Medicine, New Haven, Connecticut, USA

- GODMAN, M. Royal Hospital for Sick Children, Edinburgh, Scotland
- GOKI, SHINDO. Department of Thoracic Surgery, University of Tokyo, Tokyo, Japan
- GOLDBERG, STANLEY J. University of Arizona, Tucson, Arizona, USA GOLDSTEIN, LILI. Tkacka 22B, Lodz, Poland
- GOLINKO, RICHARD J. Brookdale Hospital Medical Center, Brooklyn, New York, USA
- GOODWIN, JOHN. Royal Postgraduate Medical School, London, England GOOTMAN, NORMAN L. Children's Hospital, Long Island Lewish Hospital, New Hyde Park, New York, USA
- GOW, ROBERT. The Hospital for Sick Children, Toronto, Ontario, Canada GRAHAM, THOMAS P., JR. The Hospital for Sick Children, London, England
- GRAHAM, THOMAS P. 6511 Brownlee Drive, Nashville, Tennessee, USA
- GRAHAM, GERALD. The Hospital for Sick Children, London, England
- GRAVINGHOFF, L. M. Department of Pediatric Cardiology, University of Kinderklinik Hamburg, Hamburg, Federal Republic of Germany
- GRIEPP, RANDALL. State University of New York, Downstate Medical Center, Brooklyn, New York, USA
- GRIFFITHS, SYLVIA, Babies Hospital, Columbia-Presbyterian Medical Center, New York, New York, USA
- GUTGESELL, HOWARD P. University of Virginia Medical School, Charlottesville, Virginia, USA
- HAIT, GERSHON. Montefiore Hospital, The Bronx, New York, USA HALLIDIE-SMITH, KATHERINE. Department of Pediatric Cardiology,
 - Hammersmith Hospital, London, England
- HAMMON, JOHN W. Medical Arts Building, Nashville, Tennessee, USA
- HARDESTY, ROBERT L. Department of Surgery, University of Pittsburgh, Pittsburgh, Pennsylvania, USA
- HARINCK, ERIC. Wilhelmina Children's Hospital, Utrecht, The Netherlands HARNED, HERBERT S. JR. Department of Pediatric Cardiology, North Carolina Memorial Hospital, Chapel Hill, North Carolina, USA
- HARRIS, PETER. Department of Pediatrics, East Carolina University School of Medicine, Greenville, North Carolina, USA
- HAUSDORF, GERD. Abt.f.ped. Kardiologie, Universitats-Kinderklinik, Hamburg, Federal Republic of Germany
- HAWORTH, SHEILA G. Reader in Paediatric Cardiology, Hospital for Sick Children, London, England
- HAYES, CONSTANCE J. Babies Hospital, Columbia-Presbyterian Medical Center, New York, New York, USA
- HEGESH, JULIUS. Heart Institute, Sheba Medical Center, Tel Hashomer, Israel HEINTZEN, PAUL H. Department of Pediatric Cardiology and Bioengineering, University Children's Hospital, Kiel, Federal Republic of Germany
- HELGASON, HRODMAR. Department of Cardiology, Children's Hospital, Boston, Massachusetts, USA
- HELLENBRAND, WILLIAM. Yale University School of Medicine, New Haven, Connecticut, USA
- HENRY, GEORGE W. University of North Carolina School of Medicine, Chapel Hill, North Carolina, USA

xl Presenters

HENTRICH, FRANK. Kinderkardiol. Abt., Universitäts-kinderklinik, Essen, Federal Republic of Germany

- HEYMANN, MICHAEL A. University of California, San Francisco, San Francisco, California, USA
- HIGGENS, SARAH. Oakland Children's Hospital Center, Oakland, California, USA
- HIGGINS, CHARLES B. Department of Radiology, University of California, San Francisco, Medical Center, San Francisco, California, USA
- HIRAISHI, SATOSHI. Kitasato University School of Medicine, Sagamihara, Kanagawa, Japan
- Ho, S. Y. Department of Paediatrics, Cardiothoracic Institute, London, England
- HOHN, ARNO R. Children's Hospital of Los Angeles, Los Angeles, California, USA
- HOPKINS, RICHARD A. Thoracic Unit, The Hospital for Sick Children, London, England
- Hordof, Carol A. Columbia-Presbyterian Medical Center, Maywood, New Jersey, USA
- HORDOF, ALLAN J. Babies Hospital, Columbia-Presbyterian Medical Center, New York, New York, USA
- HUBER, SALLY A. Department of Pathology, University of Vermont, Burlington, Vermont, USA
- HUCIN, BOHUMIL. Center of Pediatric Cardiology and Cardiac Surgery, University Hospital Motol, Prague, Czechoslovakia
- Huhta, James C. Pediatric Cardiology, Texas Children's Hospital, Houston, Texas, USA
- HURWITZ, ROGER. Indiana University, Indianapolis, Indiana, USA
- ICHINOSE, EISEI. Pediatrics, Kurume University School of Medicine, Kurume, Fukuoka, Japan
- IMAI, YASUHARU. Tokyo Women's Medical College, Sinjukuku, Tokyo, Japan ISAAZ, KARL. Service de Cardiologie, Vandoeuvre, France
- ISHIZAWA, AKIRA. Department of Pediatrics, Hamamatsu University School of Medicine, Hamamatsu-City, Shizuoka Pref. Japan
- ISHMAEL, RICHARD G. St. Michael, Bridgetown, Barbados, West Indies
- ISOM, WAYNE. The New York Hospital, New York, New York, USA
- Iwa, Takashi. Department of Surgery, Kanazawa University, School of Medicine, Kanazawa, Japan
- Iwasa, Mitsuji. Department of Pediatrics, Nagoya City University Medical School, Nagoya, Japan
- JACOBSTEIN, MARK. Rainbow Babies and Children's Hospital, Cleveland, Ohio, USA
- JARMAKANI, JAY M. Department of Pediatrics, UCLA Medical Center, Los Angeles, California, USA
- JATENE, ADIB D. Instituto do Coracao, Faculdade de Medicina. Universidade de Sao Paulo, Sao Paulo, Brazil
- JESSE, MARY JANE. University of Miami, School of Medicine, Miami, Florida, USA
- JOFFE, HYMIE S. Bristol Royal Hospital for Sick Children, Bristol, England JOHN, STANLEY. Department of Thoracic & CV Surgery, Christian Medical College & Hospital, Vellore, India

Presenters xli

KAMIYA, TETSURA. 5-125 Fujishirodai, Suita, Osaka, Japan

KAPLAN, EDWARD L. Department of Pediatrics, University of Minnesota Medical School, Minneapolis, Minnesota, USA

- KAPLAN, SAMUEL. University of Cincinnati, Children's Hospital Medical Center, Cincinnati, Ohio, USA
- KASHANI, IRAJ A. Oakland Children's Hospital Center, Oakland, California, USA
- KATO, HIROHISA. Kurume University Hospital, Kurume, Japan
- KAWASAKI, TOMISAKO. Department of Pediatrics, Japan Red Cross Hospital, Tokyo, Japan
- KECK, ERNST W. University Hamburg Children's Hospital, Federal Republic of Germany
- KEETON, B. R. Consultant Paediatric Cardiologist, Wessex Cardiothoracic Centre, Lev. E, Southampton General Hospital, Shirley, Southampton, Hants, England
- KELLY, JOHN J. Institute of Biopharmaceutics, Athlone, Ireland
- KEYSER, PHILIP. Cleveland Clinic Foundation, Cleveland, Ohio, USA
- KIDD, LANGFORD. Division of Pediatric Cardiology, The Johns Hopkins Hospital, Baltimore, Maryland, USA
- KIMURA, TAKASHI. 200 Mishima-cho, Tenri City, Nara pref., Tenri, Japan KING, R. M. Mayo Clinic, Rochester, Minnesota, USA
- KIRBY, MARGARET L. Department of Anatomy, Medical College of Georgia, Augusta, Georgia, USA
- KIRKLIN, JOHN W. Department of Surgery, University of Alabama at Birmingham, University Station, Birmingham, Alabama, USA
- KLEINMAN, CHARLES S. Yale University School of Medicine, New Haven, Connecticut, USA
- KOBAYASHI, JUNJIRO. First Department of Surgery, Osaka University Medical School, Osaka, Japan
- KORFHAGEN, JOAN. Department of Cardiology, Children's Hospital Medical Center, Cincinnati, Ohio, USA
- KREUTZER, GUILLERMO O. Clinica Bazterrica, Buenos Aires, Argentina KRONGRAD, EHUD. Babies Hospital, Columbia-Presbyterian Medical Center, New York, New York, USA
- Kurosawa, Hiromi. Heart Institute of Japan, Tokyo Women's Medical College, Tokyo, Japan
- Kyo, Shunei. Department of Surgery, Saitama Medical School, Saitama-ken Japan
- L'ENFANT, CLAUDE. National Heart, Lung and Blood Institute, Building 10, Bethesda, Maryland, USA
- LACORTE, MICHAEL A. North Shore University Hospital, Manhasset, New York, USA
- LABABIDI, ZUHDI. University Hospitals, Pediatric Cardiology, Columbia, Missouri, USA
- LAKS, HILLEL. UCLA Medical Center, Cardiothoracic Surgery, Los Angeles, California, USA
- LAMB, JOANN. Columbia-Presbyterian Medical Center, New York, New York, USA
- LANG, PETER. Department of Cardiology, Children's Hospital, Boston, Massachusetts, USA

- LANGE, PETER E. Pediatric Cardiology Clinic, Christian Albrechts University-Kiel, Kiel, Federal Republic of Germany
- LAPPEN, RHONDA S. Pediatric Cardiology Associates, San Jose, California, USA
- LAUER, RONALD M. Department of Pediatrics, University of Iowa Hospitals, Iowa City, Iowa, USA
- LEMOINE, G. Centre Medico-Chirurgical de la Porte de Choisy, Paris, France
- LEV, MAURICE. Deborah Heart and Lung Center, Browns Mills, New Jersey, USA
- LEVIN, AARON R. Cornell University Medical Center, New York, New York, USA
- Lewis, Alan B. Children's Hospital of Los Angeles, Los Angeles, California Liebman, Jerome. Rainbow Babies and Children's Hospital, Case Western Reserve University, Cleveland, Ohio, USA
- LILLEHEI, C. WALTON. 73 Otis Lane, St. Paul, Minnesota, USA
- LIMA, RICARDO. Ave Boa Viagem 3160 apt° 502, Recife-Pe Brazil 50.000
- LINCOLN, CHRISTOPHER. Brompton Hospital, London, England
- LINDAY, LINDA. 1300 York Avenue, New York, New York, USA
- LINDENBAUM, JOHN. Harlem Hospital, New York, New York, USA
- LISTER, GEORGE. Yale University School of Medicine, New Haven, Connecticut, USA
- LOCK, JAMES E. Children's Hospital, Boston, Massachusetts, USA
- LOPEZ ZEA, MATILDE. Cardiologica Pediatrica, Hospital Del Nino Jesus, Madrid, Spain
- LOSAY, J. Centre Chirurgical-Marie Lannelongue, 133 Avenue de la Resistance, Le Plessis-Robinson, France
- LOSEKOOT, TOM G. Section of Pediatric Cardiology, Academic Medical Center, Amsterdam, The Netherlands
- LUBBERS, L. J. Academical Medical Centre, Amsterdam, The Netherlands
- LUBER, JOHN M. JR. Division of Cardiothoracic Surgery, Schneider Children's Hospital, Long Island Jewish Hospital, New Hyde Park, New York, USA
- Lucas, Russell V. Uñiversity of Minnesota, Mayo Building, Minneapolis, Minnesota, USA
- LUDOMIRSKY, ACHI. Pediatric Cardiology, Texas Children's Hospital, Houston, Texas, USA
- LUE, HUNG-CHI. National Taiwan University, Taipei, Taiwan
- LUNDSTRÖM, NILS-RUNE. Department of Obstetrics and Gynecology, General Hospital, Mälmo, Sweden
- LURIE, PAUL. Albany Medical College, Albany, New York, USA
- LUTIN, WILLIAM A. University of California, San Francisco, San Francisco, California, USA
- MACARTNEY, FERGUS J. Department of Paediatric Cardiology, Institute of Child Health, London, England
- MAIR, DOUGLAS D. Mayo Clinic and Medical School, Rochester, Minnesota, USA
- MALM, ERIK K. A. Fabriksgatan 4C 18, 00140 Helsinki, Finland
- MALM, JAMES R. The Atchley Pavilion, New York, New York, USA
- Manning, James A. University of Rochester Medical Center, Rochester, New York, USA
- MARIN, JOSE. Children's Hospital of New Jersey, Newark, New Jersey, USA