

**DENGUE  
HEMORRHAGIC  
FEVER  
1981**

# DENGUE HEMORRHAGIC FEVER

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## Proceedings of the First ICMR Seminar

November 21-22, 1980

Kobe Japan



International Center for Medical Research  
Kobe University School of Medicine  
Kobe Japan

This seminar is one of the activities of the International Center for Medical Research (ICMR), Kobe University School of Medicine, under the auspices of the Japan Society for the Promotion of Science (JSPS), Directorate General of Higher Education (DGHE), Indonesia, and the National Research Council of Thailand (NRCT).

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**Editor-in-Chief**

Susumu Hotta

**Editorial Members**

Konosuke Fukai

Seizo Iwai

Noboru Iwamura

R.W. Schlesinger

Sujudi

First ICMR Seminar on  
Dengue and Dengue Hemorrhagic Fever  
November 21-22, 1981

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**Program of the First ICMR Seminar on Dengue and  
Dengue Hemorrhagic Fever**

November 21-22, 1980

Sorakuen-Kaikan, Kobe, Japan

**November 21 (Friday)**

- 9:00 Registration
- Plenary Session  
Chairmen: Dr. Minoru Matsumoto and Dr. Shosuke Okamoto
- 9:30 Welcome address Prof. Susumu Hotta (Director, International Center for Medical Research, Kobe University School of Medicine)
- Message Mr. Isao Amagi (Director General, Japan Society for the Promotion of Science)
- Message Prof. Isamu Suda (President, Kobe University)
- Message Dr. Hiroshi Nakajima (Director, Regional Office for the Western Pacific, World Health Organization, Manila, Philippines)
- 9:50 Indonesia-Japan joint medical research program: Past, present and future. Prof. Sujudi (Vice Rector, University of Indonesia, Jakarta, Indonesia)
- 10:20 General review of dengue and dengue hemorrhagic fever Prof. R. Walter Schlesinger (Professor of Microbiology, College of Medicine and Dentistry of New Jersey, Rutgers Medical School, U.S.A.)
- 10:50 Coffee break
- Session I – Virology  
Subsession A Chairmen: Dr. Akira Oya and Dr. Leon Rosen
- 11:10 Production of temperature-sensitive virus from and superinfection-resistance of *Aedes albopictus* cells persistently infected with dengue viruses. Dr. Akira Igarashi (Nagasaki)
- 11:30 Isolation and identification of viruses from patients with dengue infection. Dr. Toshihiko Fukunaga (Osaka)
- 11:50 Isolation and identification of dengue viruses by a combined use of C6/36 cells and the immune adherence hemagglutination test. Dr. Sakae Inouye (Tokyo)
- 12:20 Lunch

Subsession B Chairmen: Dr. Scott B. Halstead and Dr. So Hashizume

- 13:30 Approaches to anti-dengue vaccine Dr. Nobuya Fujita (Kobe)  
13:50 Specificity and biologic activity of monoclonal anti-dengue antibodies. Dr. Philip K. Russell (Washington, D.C.)  
14:10 The absence of epidemic dengue hemorrhagic fever from the Americas. Dr. J.P. Woodall (San Juan, Puerto Rico)  
DHF in Thailand, 1979. Dr. Kanai Chatyanonda (Bangkok)

Session II – Immunology

Subsession A Chairmen: Dr. Philip K. Russell and Dr. Kazuya Yamanouchi

- 14:30 Immune enhancement of dengue infection: Research questions. Dr. Scott B. Halstead (Hawaii)  
14:50 Immunosuppressive effect of virus infection on human immune system. Dr. Junichi Yata (Tokyo)  
15:10 Cell-mediated mechanisms of resistance and pathogenesis in viral infections: Studies in athymic nude mice. Dr. Ryoichi Mori (Fukuoka)  
15:30 Coffee break  
Subsession B Chairmen: Dr. R.W. Schlesinger and Dr. Seiichi Matsumoto  
15:50 Experimental dengue virus infection using athymic nude mice. Dr. Hak Hotta (Kobe)  
16:10 Study of immune mechanisms in dengue virus-infected mice. Dr. U.C. Chaturvedi (Lucknow, India)  
Immunopathological analysis of serum and lymphocytes of DHF patients. Dr. Haruki Ikeuchi (Kobe)  
16:30 Round Table Discussion  
Chairmen: Dr. Akira Igarashi and Dr. Thomas M. Yuill  
18:00 Reception

#### November 22 (Saturday)

Session III – Hematology and Clinical Pathology

Chairmen: Dr. Shosuke Okamoto and Dr. Toru Nakao

- 9:00 Studies of the liver function in dengue haemorrhagic fever. Dr. Sumarmo (Jakarta)  
9:30 Studies of blood cells in DHF. Dr. Natth Bhamarapavati (Bangkok)  
10:00 An acute type of disseminated intravascular coagulation characterized by decrease of  $\alpha_2$  plasmin inhibitor in dengue haemorrhagic fever. Dr. Yoshinori Funahara (Kobe)  
10:30 Coffee break  
11:00 General Discussions  
Chairmen: Dr. William F. Scherer, Dr. Ryoichi Mori and Dr. Natth Bhamarapavati  
12:00 Adjourn

## **Plenary Session**

Chairmen: Minoru Matsumoto and Shosuke Okamoto



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## Welcome Address

SUSUMU HOTTA\*

Distinguished guests, chairmen, ladies and gentlemen: On behalf of the International Center for Medical Research (ICMR) of Kobe University, I, as the director, would like to express my warmest welcome to all of you to the first ICMR Seminar on Dengue and Dengue Hemorrhagic Fever. It is my greatest honour and pleasure to have the presence of many eminent scholars and researchers from Indonesia, Thailand, India, the United States of America, and Israel, as well as of Japan. Many of them are very good friends of mine for many years.

As you know, our ICMR was established for the purpose of promoting collaboration and exchange between Japan and Southeast Asian countries in the field of medical science. Indeed, to accomplish this purpose with friendship is the biggest and exclusive objective of ICMR.

The history of the relationship between Kobe, this city, and foreign countries, especially the Southeast Asia, is old. Kobe is the biggest port city in Japan since the Meiji era. Keen interest in the tropical medicine and related fields by scientists in Kobe can be traced back far before the outbreak of the Second World War, and animated research activities were being done at that time. With all these as background, it has been our strong wish for many years to establish a scientific organization or institute in this city of Kobe, through which, to promote close connection with the Southeast Asian countries.

We are very pleased to see that the energetic collaborative works are being done by Japanese and Indonesian doctors at the first stage of ICMR. At the same time I believe, the ties shall not be limited within the Asian area. I wish the relationship will be expanded to the world in future; not only with scientists of the Southeast Asian countries but also with those around the Pacific basin, and further more, those of African, American and European, who share the same interest with us. I am firmly confident that the future development of the medical world relies heavily on the global ties and mutual trust.

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\*Director, International Center for Medical Research, Kobe University School of Medicine.

May I ask for your generous understanding that our ICMR is taking the course towards this global vision. Though we have different background, we enjoy the same interest, and today we are getting together in Kobe to discuss our mutual concern. Major topics to be discussed will be concerning dengue-related hemorrhagic fever which is one of the most serious medical and public health problems. I am very happy to have you all who have great interest in and profound insight into those problems, and I sincerely wish this will be greatly profitable not only for all of us but also for people of the areas involved. This Seminar is the first step, and shall be followed by multiple another. For this purpose I must ask you all for your kind understanding and assistance.

Last and not least, let me express my thanks to the Japan Society for the Promotion of Science, and other organizations, which gave us the financial support, and also my deep gratitude to many who have earnestly worked to organize the meeting so successfully. Thank you very much.

## Message

ISAO AMAGI\*

Mr. Chairman, distinguished participants, ladies and gentlemen. It is a great pleasure to be here with you as a representative of the Japan Society for the Promotion of Science (JSPS).

On behalf of JSPS, the sponsor of today's seminar on Dengue Hemorrhagic Fever and its related medical problems, I want you to know how pleased I am that this seminar is taking place today. In March 1978, JSPS and Indonesia's Directorate General for Higher Education (DGHE) exchanged a memorandum of understanding. Scientific co-operation between Indonesia and Japan thus began under the joint auspices of DGHE and JSPS. The so-called core university system was adopted for the exchange in the area of medical sciences, and in Japan, Kobe University was designated, while in Indonesia, the University of Indonesia was chosen as a core university in this area. I think it is a great honor that we are able to have this seminar today under this system with additional participation of those many other scientists from Thailand, the United States, New Zealand, India, and Israel.

It is my understanding that dengue hemorrhagic fever, the topic of today's seminar, is a disease which mainly occurs in Southeast Asia and which has become an extremely serious problem there. It is my sincere hope that, through very earnest discussion of the participants, this seminar will shed light on an answer to this problem.

In concluding, I would like to express my sincere appreciation to Professor Hotta of Kobe University and to many other persons who helped to make this seminar possible. Thank you.

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\*Director-General, Japan Society for the Promotion of Science

## Message

ISAMU SUDA\*

Distinguished guests, Chairman, ladies and gentlemen, on behalf of Kobe University, I, in the capacity of the president, would like to express my gratitude to all of you, eminent scholars and researchers who brought deep concern from abroad and inside Japan to participate in the first ICMR seminar on dengue and dengue hemorrhagic fever.

ICMR is a young institute, less than two years old only, but she developed herself being able to hold this seminar which is a fruit of the support of the Education Ministry of the Japanese Government, the Japan Society for the Promotion of Science, and other concerned organizations, and the efforts of the scientists who are willing to promote peace and health of human beings in this world through the research works on this dengue and dengue hemorrhagic fever. I beg to avail myself of this opportunity to submit my highest esteem and courtesy to such contributions of all people who are related to ICMR and this seminar.

Finally I would like to close my words with my expectation on your efforts and co-operation for continuation of this sort of international exchanging activities through ICMR in order to develop the human beings' welfare in this world. Thank you very much.

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\*President, Kobe University.

## Message

HIROSHI NAKAJIMA\*

Colleagues and friends, I was hoping to be personally present at your meeting on dengue hemorrhagic fever to which Dr. Hotta so kindly invited me, but regretfully this was not possible.

The World Health Organization, as you know, is vitally interested in this strange and dangerous disease. I myself attended a meeting on research in viral hemorrhagic fevers of the Eastern Mediterranean, Southeast Asian, and Western Pacific region in New Delhi in March 1980. This seminar will no doubt be discussing such matters as the feasibility of developing an effective vaccine, treatment of shock, as well as vector surveillance control and prevention.

I hope that it will also be possible for you in the time at your disposal to consider the role of community participation in prevention and control.

To assist you in these and related topics, the WHO Western Pacific and the Southeast Asia Region issued this year the second edition of the guide for the diagnosis, treatment and control of dengue hemorrhagic fever. Gratis copies of this publication have been sent to Dr. Hotta for distribution among participants and we shall be pleased to satisfy requests for further copies as far as possible. My collaborators and I wish you a successful and fruitful meeting and await your findings with great interest. Thank you.

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\*Director, Regional Office for the Western Pacific, World Health Organization, Manila, the Philippines





Indonesia-Japan Joint Medical Research Program  
— Past, Present and Future —

SUJUDI\*

The honorable Mr. Director General of JSPS, Director of Regional Pacific Office of WHO, Mr. President of Kobe University, faculty members, distinguished participants, ladies and gentlemen. It is really a great honor for me that in this international seminar I have the opportunity to deliver this keynote address. Actually it would be more appropriate indeed if either Prof. Okamoto or Prof. Iwai or even Prof. Hotta himself gave this address. However due to the modesty of these honorable professors I was rather forced to be the speaker and I hope that what I am going to read will fulfill the criteria or the requirements of a keynote address for this seminar.

Ladies and gentlemen, science and technology are the keys for modern development, while development itself is an urgent need for all countries. The success of the development in the developed countries depends on the availability of the trained manpower who have the ability to design, analyze and interpret the need for the development so as to organize and to carry it out successfully. It is sometimes said that money is a less decisive factor than manpower. In the developing countries, however, the combination of finance and manpower are the most inhibiting factors. Prominence, power and wealth in the international community have been generated by various kinds of factors at different times. At first, agriculture was the key, later on, mercantilism became the main source of wealth and power. With the rise of the industrial era, the possession of raw materials became the primary factor. Nowadays, all these factors are less important with the rise of brainpower.

A university, besides producing scientists, is also a center of scientists. In the developed countries a university is also a producer of new sciences or new ideas, which is made possible by conducting research by the faculty members, and graduate students, since there are enough facilities and funds. The research is not always conducted in their own university or country

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\*Deputy Rector for Academic Affairs, University of Indonesia.