Report of the Sysmex Scientific Seminar 2007

— The 30th Sysmex Hematology Seminar —

June is the rainy season in Japan. This day, however had a beautiful clear sky throughout Japan as if to celebrate us. On 16th June, the Sysmex hematology seminar celebrated it's 30th anniversary. Although there are many stories of the past 30 years, let us take a quick look at the history in this brief report.

In 1978, the 1st Sysmex hematology seminar took place in the beautiful port city Kobe, where the headquarters of Sysmex. It was a small seminar to distribute useful information on hematology to our users without commercial bias. It was the so small meeting but the response was terrific.

After the first successful seminar, efforts were made to satisfy customers' needs. In the early years, the seminar was organized twice a year in Kobe and Tokyo as a series. In 1995, a severe earthquake struck Kobe. However, with the help of many, the seminar was not canceled. The seminar was held only in Tokyo and about 600 people participated. In 1997, in order to respond to the demand to hold seminars locally, it was hosted at six cities in Japan using video conference system. This advancement commemorated the 20th anniversary. Since 2000, with advancements in technology the seminar has been telecast live to multi-sites by communication satellite. In the last two years, it was successfully telecast to international sites via satellite link (Singapore in 2005 and Sidney, Australia in 2006), sharing the latest useful medical information with overseas customers. In this way the seminar has come to be widely recognized and accepted. Today, around 1,000 people attend the seminar every year. The total participants in last 30 years is nearly 30,000 people. The purpose of the seminar is contribution to customers and the medical field. The mission has remained the same through the 30-year history and will not ever change even if our contribution is small.

The 1st Sysmex Hematology Seminar

The 20th seminar successfully transmitted the lectures from the main site to the satellite sites.

The Q & A in Singapore beyond the distance of 5,000km at the 28th seminar.

The moderatror of the 29th seminar, Dr.Parekh was in the oversea sitellite place Sydney Australia.

This year we had four domestic sub-sites at Sapporo, Tokyo, Nagoya, and Fukuoka. To commemorate the 30th anniversary, we invited foreign speakers for the first time. Two famous professors from U.S.A. gave the lectures at Kobe main site. The lectures were bilingual. National participants listened to it in Japanese through simultaneous interpretation. Customers from Hong Kong and the U.S.A who attended the Kobe main site, also enjoyed the lectures given by Japanese speakers through an English interpreter. 1,100 of medical technologists, hematologists and clinicians from all over Japan attended the seminar.

Kobe site: main place (the 30th seminar)

With the encouraging words of Chairman Dr. Hidehiko SAITO, the 30th Sysmex Hematology Seminar began. In his address, he looked back on 1978, the year the seminar started. Can you remember the events that happened 30 years ago? That year, Argentina won the first FIFA World Cup victory, Ms. Louise Joy Brown was born as the "Test-tube Baby", and the brand name of "SYSMEX" was started.

The 30th seminar, discussed a variety of the topics including blood morphology, stem cell transplantation, platelet function, and molecular control of hematopoiesis. The audience listened diligently to lectures given by four authorities in the field.

Tokyo site :Satellite place (the 30th seminar)

The speaker in session 1, was Prof. John M. BENNETT, from University of Rochester, Rochester, NY, U.S.A., who is a founder of the French-American-British Cooperative Leukemia Working Group and is a renowned researcher on MDS. His topic was "The Latest Revisions of the Diagnosis of MDS." He discussed the transition from F.A.B. classification to WHO Classification and the points of the revision of WHO classification in 2008.

Assoc. Prof. Shinichiro OKAMOTO from Keio University School of Medicine, Tokyo, Japan gave a lecture about the history of hematopoietic stem cell transplantation and its difficulties in an understandable way.

Another special speaker, was Prof. Alan D. MICHELSON from the University of Massachusettes is the director of the Center for Platelet Function Studies. His lecture focused on Aspirin and Clopidogrel "Resistance." He spoke about whether laboratory tests of "Aspirin and/or Clopidogrel resistance" predict clinical "Aspirin and/or Clopidogrel resistance."

Last speaker, Prof. Yuzuru KANAKURA from Osaka University Graduate School of Medicine gave the outline of the molecular control of hematopoiesis and its disorders. The resent treatment for those diseases was also discussed

After each lecture, the audience actively asked questions. A feature of the Sysmex Hematology seminar is Q&A time of 30 minutes for each lecture. There were many questions from the main site and also from the sub-sites through the interactive communication system, and even 30 minutes was insufficient.

Outline of the 30th Sysmex Hematology Seminar

Date:	2007/06/16 (SAT)
Place:	Kobe (main), Sapporo, Tokyo, Nagoya, Fukuoka (satellite)
Chair in Kobe:	Dr. Yasuo IKEDA, M.D., Ph.D., Dean, Keio University School of Medicine, Tokyo, Japan
Local Chair in Tokyo:	Dr. Kazuma Ohyashiki, M.D., Ph.D., Professor and Chairman, First Department of Internal Medicine, Tokyo Medical University, Japan

** The full text of this seminar is published in "Sysmex Journal International Vol.17 Suppl.2".*

Blood Morphology: The Latest Revisions of the Diagnosis of the Myelodysplastic Syndromes (F.A.B./W.H.O.)-2007

John M. BENNETT

Professor, James P. Wilmot Cancer Center, University of Rochester, Rochester, NY, U.S.A.

The Myelodysplastic syndromes (MDS) represent a heterogeneous group of neoplastic clonal stem cell diseases characterized by dysplastic morphological features and clinical bone marrow failure. The FAB (French-American-British) system served as the gold standard MDS classification for more than two decades. The WHO classification, built on the backbone of FAB classification, was an attempt to further improve the prognostic value of MDS classification as well as establish its clinical utility as a tool to select different treatments. In this presentation I will highlight the major differences between the FAB classification and the WHO MDS classification and will discuss in more details the experience of using the new WHO classification since its publications and review the studies that tried to validate the prognostic value of the new classification or apply it to predict clinical responses to various treatments. In addition I will present the proposed changes in the classification that will appear in the next edition of the WHO syllabus, due to appear in 2008.

The original goal remains the same, namely to provide uniform terminology for the myriad of different definitions that had been described previously so that the rapidly evolving new therapies could be compared in various countries that impact on the natural history as well as improvements in supportive care.

It was recognized that some patients could present with a disease that bore some resemblance to acute myeloid leukemia (AML), but that this entity, unlike AML, did not have many leukemic blasts in the bone marrow. It was associated with some alteration in maturation of the three major cell lines (granulocytes, erythroid precursors, and megakaryocytes), which resulted in pancytopenia and increased risk of infection and bleeding, but did not necessarily progress to acute leukemia. The FAB Working Group applied the term MDS to these disorders to indicate that the common disease pathway began with a common neoplastic stem cell. The evolution from that stem cell could be highly variable: some patients never evolved to acute leukemia and others evolved quickly.

The pathological manifestation of morphological abnormalities (termed "dysplasia," although it is a clonal disorder, and hence, neoplastic) of the peripheral blood and bone marrow cells such as ringed sideroblasts, magaloblastic erythroid precursors, hypogranulation/hyposegmentation of the granulocytes, and micromegakaryocytes as well as a useful way to separate blasts from promyelocytes will be discussed.

Allogeneic Hematopoietic Stem Cell Transplantation - Learning the Past, Sailing to the Future -

Shinichiro OKAMOTO

Director, Division of Hematology

Associate Professor, Department of Medicine, Keio University School of Medicine 35, Shinanomachi, Shinjuku-ku, Tokyo 160-8582, Japan

Allogeneic hematopoietic stem cell transplantation (SCT) offers potentially curative treatment for a wide range of otherwise fatal hematological malignancies, and the number of SCT has continued to increase over the last 15 years. The assets that have contributed to the rapidly growing activity of SCT include an improvement in supportive care, innovative transplant preparative regimens, better understanding of immunogenetics and better control of post transplant alloimmune reaction with potent immunosuppressive agents, and an efficient preparation of system providing stem cells such as bone marrow donor registry or cord blood bank. However, despite these advancements, treatment-related morbidity and mortality, as well as relapse, remain significant barriers to the greater therapeutic success of the allogeneic SCT. Collaborative clinical research network is definitely needed to perform prospective studies that can improve the health and safety of transplant recipients. This presentation will summarize the current status of allogeneic stem cell transplantation, outline key areas for additional improvement, and address what future role allogeneic SCT may play in the treatment of hematological malignancies.

Monitoring Antiplatelet Therapy

Alan D. MICHELSON

Director, Center for Platelet Function Studies, Department of Pediatrics, University of Massachusetts Medical School, Worcester, MA, U.S.A.

Antiplatelet drugs (e.g., aspirin, ticlopidine, clopidogrel) are beneficial in the treatment of coronary artery disease, ischemic stroke, and peripheral arterial disease. However, there is a well-documented variability between patients (and normal volunteers) with regard to laboratory test responses to antiplatelet drugs. Platelet function tests have therefore been studied in patients with cardiovascular diseases as a means to monitor antiplatelet drugs and predict clinical outcomes. Evidence from small clinical studies suggest that decreased response, or "resistance", to antiplatelet drugs is associated with subsequent major adverse clinical events. However, it remains to be determined whether altering therapy based on the results of platelet function tests is beneficial to patients.

Molecular Control of Hematopoiesis and Stem Cell Disorders

Yuzuru KANAKURA

Professor, Department of Hematology and Oncology,
Osaka University Graduate School of Medicine, Osaka, Japan

The selfrenewal, proliferation, differentiation, survival and death of hematopoietic stem cells are controlled by hematopoietic growth factors and by the interaction with stromal cells. Hematopoietic growth factors mediate intracellular signaling through binding to their cognate receptors. The receptors are divided roughly from the structure into the kinase type and non-kinase type, and the non-kinase type receptors transmit the signal in the cell through JAK tyrosine kinase. The factor and receptor system is known to involve in normal hematopoiesis and also in neoplastic transformation of hematopoietic cells. For example, constitutively activation mutations of FLT3 receptor tyrosine kinase (RTK) or c-kit RTK play a causal role in development of acute myelocytic leukemia, and are known to be the poor prognostic factors. Moreover, the activation mutation of JAK2 tyrosine kinase is detected at a high rate in myeloproliferative disorders. In this seminar, I will summarize molecular regulation of normal hematopoiesis through the growth factor-receptor system as well as receptor-mediated downstream signals associated with transcription, cell-cycle and apoptosis. I will also describe the molecular basis and treatment of hematopoietic stem-cell disorders.