Raging Hormones: Closing the Loop from Bench to Bedside. The Twenty-Second Arnold O. Beckman Conference in Clinical Chemistry

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The Twenty-second Annual 1999 Arnold O. Beckman Conference was held on February 21 and 22, 1999, in San Antonio, Texas. In keeping with the tradition of the conference, the goal of this year’s meeting was to strengthen attendees’ knowledge of clinical endocrinology and the use of the clinical laboratory. The conference was divided into four sessions: basic science, diabetes, bone, and diagnostic endocrinology.

Acknowledgement and Historical Summary of A.O. Beckman

K. Michael Parker, PhD, AACC President, opened the conference. He thanked Dr. Beckman for his “generous gift and visionary foresight, which have endowed 22 conferences. Dr. Beckman stated that his actions were taken to contribute to the professional growth of clinical chemistry and to the improvement of healthcare”. In accordance with the gift from the Arnold and Mabel Beckman Foundation, AACC publishes the proceedings of each conference.

Following Dr. Parker’s introduction, I briefly reviewed both Dr. Beckman’s history and the history of the conference. Readers interested in learning about Dr. Beckman are referred to the recent article about him in this journal (1) and to the Beckman Coulter web site that more completely describes Dr. Beckman’s life story (2). A table highlighting the events of his illustrious career was published in the proceedings of last year’s conference (3). Dr. Beckman received the 1999 Public Welfare Medal, the most prestigious award of the (US) National Academy of Science. Dr. Beckman is one of three honorary members of AACC.

Historical Summary of the Beckman Conference

The Beckman conference began in 1977 with the purpose of educating both clinical chemists and clinicians. Although there has been strong attendance by clinical chemists, clinicians are more apt to attend meetings sponsored by their own professional organizations. Therefore, the conference has evolved into one that includes clinical chemists as attendees and superb clinicians as speakers. The meetings have been small enough to allow interaction of attendees with speakers, have been highly evaluated by attendees, and have been free from commercial content, consistent with the terms of the Arnold O. and Mabel Beckman Foundation. The topics of the Beckman conferences since their inception have been summarized recently (3). The conference committee is committed to continuing the proceedings so that all members of AACC and the broader biomedical community may benefit from this activity. Beginning in 1998 and continuing this year, the proceedings are also available in Clinical Chemistry Online (www.clinchem.org). This evolution is consistent with the founding purpose of the conference.

1999 Conference Summary

The conference speakers were recruited to discuss human endocrinology. This topic was divided into four sessions: basic science of receptors and rhythm, diabetes, bone, and diagnostic endocrinology. In addition to the formal presentations, the participants attended two case study sessions.

The basic science session started with an excellent presentation by Dr. Andrés Negro-Vilar (Ligand Pharmaceuticals, Inc.) on the function of endocrine receptors. He predicted the discovery of 500 receptors by the end of the Human Genome Project. Dr. Jean Wilson (University of Texas Southwestern Medical Branch) next discussed the receptor genes. The understanding of hormone receptors has been greatly assisted by the identification and sequencing of their genes, and studies have shown that most hormone resistance is caused by abnormal or absent hormone receptors. Dr. Martin Kroll (The Johns Hopkins...
Hospital) presented a review of biological rhythms in endocrine processes. Pathological conditions are often accompanied by loss of the normal rhythms, and understanding the rhythms may lead to more effective treatment for disorders such as osteoporosis and diabetes. To end this session, Dr. George G. Klee (Mayo Clinic) reviewed pre- and postanalytical factors, patient preparation, specimen collection and stabilization, and laboratory report formatting. During the luncheon, Dr. Mitchell I. Burken (Health Care Financing Administration) discussed payer approaches to endocrine testing.

Diabetes mellitus was the subject of the second scientific session. Dr. Åke Lernmark (University of Washington) reviewed the immunological etiology of type 1 diabetes. Autoantibodies against three major islet cell autoantigens (insulin, glutamic acid decarboxylase, and a protein tyrosine phosphatase) are strongly associated with type 1 diabetes. The second presentation was by Dr. Harold E. Lebovitz (SUNY Health Science Center) and covered type 2 diabetes, which is a polygenic disorder.

The third session reviewed bone and bone metabolism. Mechanisms of calcium homeostasis were covered by Dr. Gregory Mundy (University of Texas Health Science Center at San Antonio). Specifically, he discussed parathyroid hormone, parathyroid hormone-related peptide, and the mechanism of bisphosphonate treatment. Speaking next, Dr. Lawrence G. Raisz (University of Connecticut) reviewed bone physiology and remodeling. The latter process is a set of highly regulated phases that include activation, resorption, reversal, and formation. Finally, Dr. Nelson Watts (Emory Clinic) discussed the clinical application of bone markers: formation markers, which include alkaline phosphatase, osteocalcin, and procollagen-1 extension peptides; and resorption markers, which include pyridinoline, telopeptides, cross-linked telopeptides of type 1 collagen, and others.

The last scientific session was composed of disparate topics in the area of diagnostic endocrinology. Dr. Horace M. Perry III (St. Louis Veterans Affairs Medical Center) presented the endocrinology of aging. His topics included leptin, vitamin D, dehydroepiandrosterone, testosterone, and growth hormone. Next, Dr. Michael Kaplan (Associated Endocrinologists, West Bloomfield, Michigan) gave a clinician’s perspective on the diagnosis of thyroid disease. His presentation used the case study approach. Lastly, Dr. Clifford Rosen (St. Joseph Hospital, Bangor, Maine) reviewed new discoveries in the field of insulin-like growth factors and their binding proteins.

The conference attendees and speakers participated in two case study sessions, one each day. Four months before the conference, a call for cases was mailed to members of the AACC Texas and Rocky Mountain local sections. Drs. Jim Smith (University of Oklahoma) and Charles Bradley (Texas Tech University) submitted cases and assisted with the discussions. Dr. Frank Wians, Jr. (University of Texas Southwestern Medical Center) submitted cases but was unable to attend.

I could not have chaired the 1999 conference without the generous contribution of time and able knowledge of my fellow committee members: Ronald J. Elin, Joseph H. Keffer, Michael Kleerekoper, and Martin H. Kroll. Their pleasant cooperation, dedicated recruiting of superb clinicians, and broad knowledge of clinical laboratory medicine were essential for the successful planning of this conference. The assistance of the AACC office staff was timely and proficient. Special thanks to Lisa Dunay, Angela Johnson, and Penny Jones.

References