INTRODUCTION

Welcome to the Second Yufuin International Workshop

TOSHIIE SAKATA

President of the Symposium, Honorary Professor of Oita Medical University, Dean of Department of Nutritional Sciences, Faculty of Nutritional Sciences, Nakamura Gakuen University, Fukuoka, Japan

The first Yufuin International Workshop, entitled the 'Pathophysiological Mechanisms of Homeostatic Energy Metabolism Regulated by the Brain: The Health and Disease,' was held in 1994 as a satellite workshop of the 2nd International Congress of the Society for Pathophysiology in Kyoto. The Workshop provided a chance for a small and select group of well-known specialists in the field to discuss fully thoughts of their interesting research topics from morning until night and to communicate their novel and valuable concepts and practical methods regarding energy metabolism. The topics presented were published in the supplement of the *Obesity Research* (3 [Suppl 2]: 1995).

The primary appetite-controlling loci are located in the hypothalamus. Various types of feeding-related humoral substances contribute to control of appetite as messages to the chemosensitive neurons of the hypothalamic nuclei. In case of human beings, however, the controlling systems have less influence because the higher brain centers in humans have been exceptionally developed and can greatly influence these hypothalamic functions. Evidence is rapidly emerging that reveals distorted feeding behavior in modernized urban life where food is in excess and can be taken without major efforts throughout day and night. Under these circumstances, our appetite governed by the higher brain centers is impossible to be entirely controlled by physiologic functions. Morbid obesity, Type 2 diabetes, essential hypertension, dyslipidemia, coronary artery diseases, stroke and so on, often called lifestyle-related diseases, result from overfeeding and increased body weight. From not only medical but socio-economical points of view, lifestyle-related diseases have rapidly increased in recent years, and have received much attention for their great threat to longevity and quality of life and have spread out all over the world, particularly in economically developed countries.

Recent advances in molecular biology represented by discovery of *ob* gene are so rapid and outstanding that pharmaceutical approaches may soon enable us to overcome lifestyle-related diseases. Brain histamine neuron system activated by histidine-containing food staffs, an environmental factor, has been found to play an essential role in a downstream effect of leptin on metabolic energy balance through formation of a tightly negative feedback loop with *ob* gene expression, a genetic factor. In other words, the findings seem to make it possible to overwhelm lifestyle-related diseases if we could control environmental factors. Success in restoring the distorted brain function to its primary and proper one is a task of great urgency to improve the distressed dietary habits and sedentary lifestyle that we are now facing.

The second Yufuin International Workshop that was held September 11–14, 2002, reflected the recent progress in basic health sciences and lifestyle-related diseases together with a growing need for treatment of these diseases. The current papers in this supplement volume originally presented in the Workshop were focused on obesity and Type 2 diabetes to target novel understanding of pathophysiologic mechanisms, prevention techniques, and therapeutic approaches to these diseases. It is my great and profound pleasure that the participants getting together in Yufuin have encouraged us to publish this issue in honor of my many years of work in this important field and my retirement from Oita Medical University. The Organizing Committee sincerely thanks Dr. Kazuyuki Hamaguchi, MD, PhD, Oita Medical University, for his dedication to editing the manuscripts submitted.

1535-3702/03/22810-1105$15.00