

Department of Internal Medicine

Division of Diabetes, Metabolism and Endocrinology

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General Summary

We expanded medical treatment with the Division of Diabetes, Metabolic and Endocrinology because of a rapid increase in the number of patients, mainly with diabetes and internal secretion diseases, such as those of the thyroid gland, pituitary gland, adrenal gland, the gonads.

By using such an increase in the number of patients as a basis, we are performing high-quality studies.

Research Activities

Study on diabetes complications

1. Rho/Rho kinase signal and symptoms of very small blood vessels with diabetes
2. Rho/Rho kinase signal and symptoms of great vessels with diabetes

Study on epidemiology

1. Clinical study of diabetes with continuous glucose monitoring
2. Study of lifestyle-related diseases of local inhabitants and insulin resistance

Molecular biologic study of the pancreas's islets of Langerhans

Elucidation of the molecular mechanism change by obesity of the power of protein kinase C δ -dependent pancreas β -cell capacity change by the fat toxicity

Study on endocrinology

1. Fundamental researches
 - 1) Study of mineral-corticoid receptor in diabetes
 - 2) Study of Ca channel subclass and depression mechanism
 - 3) Study of the potential transient receptor transient channel of fat cells
2. Clinical study

Clinical study of adrenal tumors

Study of blood pressure variation

The main purpose of this study was to elucidate the mechanisms by which blood sugar levels, blood pressure, cholesterol, and changes in acylglycerol are related to the compli-

cations of diabetes and cardiovascular events.

Publications

Nemoto M, Sasaki T. High-throughput screening of small interfering ribonucleic acid identifies important modulators in islet dysfunction and apoptosis. *J Diabetes Investig.* 2015; **6**: 390-2.

Nishimura R, Osonoi T, Kanada S, Jinnouchi H, Sugio K, Omiya H, Ubukata M, Sakai S, Samukawa Y. Effects of luseoglitazone, a sodium-glucose co-transporter 2 inhibitor, on 24-h glucose variability assessed by continuous glucose monitoring in Japanese patients with type 2 diabetes mellitus: a randomized, double-blind, placebo-controlled, crossover study. *Diabetes Obes Metab.* 2015; **17**: 800-4.

Tsukamoto M, Sango K, Niimi N, Yanagisawa H, Watabe K, Utsunomiya K. Upregulation of galectin-3 in immortalized Schwann cells IFRS1 under diabetic conditions. *Neuroscience Res.* 2015; **92**: 80-5.

Tsukamoto M, Niimi N, Sango K, Takaku S,

Kanazawa Y, Utsunomiya K. Neurotropic and neuroprotective properties of exendin-4 in adult rat dorsal root ganglions: involvement of insulin and RhoA. *Histochem Cell Biol.* 2015; **144**: 249-59.

Onda Y, Nishimura R, Morimoto A, Sano H, Utsunomiya K, Tajima N; Diabetes Epidemiology Research International (DERI) Mortality Study Group. Causes of death in patients with childhood-onset type 1 diabetes receiving dialysis in Japan: Diabetes Epidemiology Research International (DERI) Mortality Study. *J Diabetes Complications.* 2015; **29**: 903-7.

Mitsuishi S, Nishimura R, Ando K, Tsujino D, Utsunomiya K. Can fasting glucose levels or post-breakfast glucose fluctuations predict the occurrence of nocturnal asymptomatic hypoglycemia in type 1 diabetic patients receiving basal-bolus insulin therapy with long-acting insulin? *PLoS One.* 2015; **10**: e0144041.