

Department of Laboratory Medicine

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General Summary

The environment for research in the department was equipped. The main study was accomplished by Welfare of Japan and the Practical Application of New Drugs for Hepatitis B provided by the Japan Agency for Medical Research and Development (AMED). We accomplished studies to connect experimental medicine with clinical medicine

Research Activities

Clinical microbiology

Basic and clinical research on microbes was conducted. 1) We assessed antiviral effects of hit compounds from a high-throughput screen using a novel *in vitro* HBV cell culture system. 2) We developed a cell-based HCV infection system with a highly sensitive Gaussia luciferase reporter for monitoring of viral RNA replication. By using this cell-based HCV infection assay and a functional miRNA library screen, we identified a miRNA involved in HCV replication. 3) We investigated the prevalence of extended spectrum β -lactamase-producing Enterobacteriaceae in fecal samples collected from outpatients, in collaboration with the Department of Clinical Laboratory, Tokyo Metropolitan Bokutoh Hospital.

We investigated characterization for differentiation at the strains level of *Helicobacter cinaedi* isolated from blood culture using multilocus sequence typing (MLST) method. The most common strain type was ST10.

We did try to perform an epidemiologic study of MRSA using a whole cell MALDI TOF MS.

Clinical chemistry

We studied gastric emptying and fat digestive and absorptive function after various types of gastrectomy by ^{13}C -breath tests. Function-preserving gastrectomy (pylorus-preserving gastrectomy; PPG, proximal gastrectomy) attenuated rapid gastric emptying usually seen after conventional gastrectomy, which may in turn ameliorate postgastrectomy syndrome such as diarrhea and dumping.

We demonstrated the detail characteristic of diabetic dyslipidemia based on lipoprotein profile data measured by our developed HPLC lipoprotein assay (J Clin Med Res. 2016; 8: 424-6), and also reported the relevance of 6-fractionated lipoprotein profile with Lp(a) to coronary heart disease risk score (J Atheroscler Thromb. 2016 Dec 26 [Epub ahead of

print]).

In a study on clinical laboratory specimens, we continued our research on nonspecific reactions and published papers on autoantibodies affecting immunoassays.

Clinical oncology

Clinico-pathological evaluation of huge splenomegaly:

Characteristics of huge splenomegaly were analyzed. Underlying disease was myelofibrosis (2), polycythemia (2), splenic lymphoma (1), chronic hemolysis (1), lymphoplasmacytic lymphoma (1). JAK2 mutation, lymphocyte infiltration, and destruction of blood were major cause of splenomegaly.

Clinical physiology

In the field of physiological examination, we examined accuracy of arrhythmia diagnosis of automatic analysis of electrocardiogram. In the arrhythmic region, we continued research related to catheter ablation of atrial fibrillation and reported it to English journals.

Clinical psychiatry

Taking Neojacksonism (Ey H) into consideration, we discussed the interpretation about the cases that presented the psychotic symptoms associated with epilepsy. Furthermore we reported changes in serum concentrations of AEDs (especially new-antiepileptic drugs) during pregnancy of epileptic patients. A study was performed to prevent the recurrence of depression in patients with epilepsy.

Basical Research

Hepatic stellate cells are the major site of retinoid storage and their activation is a key process in liver fibrogenesis. Vitamin A exerts most of its physiological activities through transcriptional regulation by retinoic acid receptors. We proposed that speckled cytosolic distribution of retinoic acid receptor proteins represents a new marker of hepatic stellate cell activation.

Publications

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