

## 特別講演会要旨

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## 特別講演会要旨

2017年11月から2018年4月までの間に東北医学会主催で行われた特別講演会は次のとおりです。

### 1. 2018年1月22日(月) 心臓血管外科学分野担当

**Dr. Payam Akhyari** : Heinrich Heine Universität Düsseldorf

#### “Tissue Engineering in Cardiovascular Surgery”

要旨: This presentation will be focusing on our research projects related to tissue engineering in cardiovascular surgery conducted at Heinrich Heine University in Düsseldorf, Germany.

The prerequisites for efficient tissue engineering include an improvement in the biocompatibility and durability of tissue engineered cardiovascular grafts, i.e. decellularized vascular and valvular grafts, in developing the animal model. Transplanting decellularized tissues derived from homologous species can maintain its function by mitigating rejection and enhancing self-organization. In the laboratory at the Heinrich Heine University in Düsseldorf, we have developed a microsurgical rat model of infrarenal implantation of aortic grafts and aortic-valved conduits as well as an experimental modular platform for *in-vivo* assessment of biological and tissue engineered grafts.

Up to now, we have performed multiple experiments with relevance to clinical situations associated with cardiovascular disease, for instance, by adding procalcific diets and some trigger agents for targeted disease condition, and then we examined the beneficial effects of the recellularization in order to improve the biofunctionality of decellularized aortic grafts and aortic-valved conduits by applying various coatings to the grafts (ex. Fibronectine, Vascular endothelial growth factor, Stromal cell-derived factor 1 $\alpha$ , and Custom-made synthetic peptides). We also conducted pathological and biochemical evaluations of the implanted grafts. The decellularized aortic grafts and aortic-valved conduits coated with fibronectin and VEGF were proved to promote medial recellularization and intimal hyperplasia. Rats were fed with different procalcific diets to induce hypercalcemia and hyperlipidemia and then treated with simvastatin. Rats treated with simvastatin did not show any differences in the extent of calcification, compared with controls. Further, the statin administration did not affect recellularization or intima hyperplasia either. Modulations of decellularized cardiovascular grafts are promising, yet there is a long way to go before we bring them to clinical

arena.

(文責: 齋木佳克)

### 2. 2018年4月17日(火) 病理診断学分野担当

**Prof. Gustavo Rubio** : Pathology Department, Catholic University School of Medicine in Guayaquil-Ecuador/ Pathology Laboratory, Omni Hospital and Kennedy Hospital Guayaquil-Ecuador

#### “Gastric Carcinoma: Factors Associated and Immunohistochemistry”

要旨: Prof. Gustavo Rubio は36年前に東北大学病理診断学分野にJICAを通じて anatomical pathology, surgical pathology の研修をしていた経緯があり, 本国エクアドルでは外科病理を初めとする病理学を牽引する御立場にある先生です。講演の内容は胃癌の病理組織学的所見や免疫組織化学の項目等, 我々の従事する外科病理診断の実務的な部分を主体に解説して頂きました。エクアドルでも胃癌の罹患率は悪性腫瘍の中で女性では4位, 男性では3位を占める頻度の高い消化器悪性腫瘍です。慢性胃炎の約90%は *Helicobacter pylori* 陽性であり, 電子顕微鏡では microvilli を有するらせん桿菌として観察されます。昨今では胃癌や MALT リンパ腫の原因としても知られます。胃癌の発症要因としては *H.pylori* や慢性胃炎等の宿主的な要因の他, diet 等の環境因子, MSI (Microsatellite instability) 等の genetic background が関連しています。これらの要因が複雑に絡み合う事で萎縮, 化生, 過形成, 異形成等の種々の形態学的変化が生じ, これらを免疫組織化学的所見と組み合わせると診断をしなければなりません。先生にはこれら病理組織診断に有意義な情報を提供し得る免疫組織化学マーカーについても御紹介頂きました。胃癌では免疫組織化学的に AE1/AE3, CAM5.2, EMA 等の上皮系マーカーが強陽性を示すため, 生検組織の病理診において低分化な癌の検出には有意義です。また, MALT リンパ腫等の悪性リンパ腫も胃生検の際には良く経験する疾患であり, B細胞系マーカーや Ig 軽鎖 ( $\kappa$  鎖,  $\lambda$  鎖) の restriction も免疫組織化学的には有用な所見となり得ます。胃には平滑筋系腫瘍や GIST 等の種々の間葉系腫瘍の発生についても考慮しなければならず, S100 (神経系マーカー), desmin (筋組織マーカー), CD117 (c-kit, GIST マーカー) 等を併用する事で, 増殖する紡錘形細胞の分化傾向を判断します。Prof. Gustavo Rubio には以上のような非常に実用的な内容をエクア

ドルの実臨床に即して御紹介頂き、我々病理医が日頃、直面する問題としては共感するところが多い御講演内容でありました。

**Prof. Gilda Rubio** : Catholic University School of Medicine in Guayaquil-Ecuador

**“Hideyo Noguchi Institute and Cooperation Program with Japanese Government”**

要旨：エクアドルのグアヤキルは、かつて野口英世先生がロックフェラー医学研究所の研究者として熱帯病の研究のため、訪れた土地であり、かつて彼が研究を行っていたとされる国立公衆衛生所、熱帯医学研究所が未だ残っています。野口先生は1876年福島県の現猪苗代町に生まれ、幼少期から高校までは福島県で過ごしています。幼少期に受けた熱傷に対する手術を契機に医師を志すようになります。医師免許取得後は血清学を専攻とし、梅毒スピロヘータ等の病原体に関する研究に従事しています。1918年にエクアドルのグアヤキルに当時ワクチンのなかった黄熱病の病原体の探索のために渡航します。その後、黄熱病の病原体がレプトスピラ イクテロイデスである事を究明しますが、後に南アフリカのマックス・タイラーらにより応熱ウイルスが単離され、反証されてしまいます。Prof. Rubioは上記のような経緯を持つエクアドルのグアヤキルの熱帯医学研究所の所長を務めていらっしゃる経緯があり、熱帯医学研究所の内部の写真等につき御紹介頂きました。野口英世先生御生誕の地である福島には野口英世博物館があり、東北地方とグアヤキルは縁のある土地同士となっており、Prof. Rubioとも通ずるところがあります。今後も引き続き学術的交流を深めて頂ければ幸いです。次第でありました。

(文責：笹野公伸)

3. 2018年4月20日(金) 難治性高血圧・内分泌代謝疾患地域連携寄附講座担当

**Vin-Cent Wu** : National Taiwan University Hospital, Nephrology Division

**“The Renaissance of primary aldosteronism”**

要旨：Given the increasing clinical recognition of primary aldosteronism as public health issue, its heightened risk profile and the availability of targeted surgical/medical treatment. The nationwide prevalence rates of hypertension (defined by SBP > 140 mm Hg or diastolic BP [DBP] > 90 mm Hg) were 25% in men and 18% in women, and that rate increased to 47% among individuals with age > 60 years. The prevalence of primary aldosteronism (PA) is from 5.5% in normotensive to 16.4% in stage 3-hypertensive patients. Because the significant complexity of a PA diagnosis requires on health care resources and even certain special equipment/

tests, it is very helpful to have a consensus for patient care. Recently, the Endocrine Society updated its clinical guidelines entitled ‘the management of PA’ in 2016. From a Taiwan Primary Aldosteronism Investigation (TAIPAI) cohort (4), there is a higher prevalence of somatic mutation-carriers among Taiwanese APA patients and there was no gender differences, which are different from other western reports (5, 6). Adrenalectomy decreases long-term all-cause mortality independently for PA patients, while mineralocorticoid receptor antagonist treatment may alleviate risk of death only in a U-shape dose. However, an European study showed no difference between surgically and medical treated patients with PA in terms of incidence of cardiovascular accident. The Taiwan Society of Aldosteronism (TSA) task force acknowledges such various nuances and force to accomplish this Taiwan PA consensus at its inauguration meeting, in order to provide update information of internationally acceptable standards, and also to incorporate our local disease characteristics in the management of PA. The consensus is based on evidence medicine and also recognizes the constraints of our real-world clinical practice in managing PA in Asian countries.

It is our hope that the algorithm proposed in this article could further arouse substantial awareness of PA among the medical professionals and the patients, and reconcile its fundamental diagnosis and prognosis.

**Man-Ho Choi** : Molecular Recognition Research Center, Korea Institute of Science and Technology

**“Why the sample preparation in mass spectrometry-based steroid profiling matters”**

要旨：You analyze biomolecules, such as proteins and metabolites, from clinical specimens and you think you have a good analytical instrument. But, when you later get the results, experimental data are not sensitive and selective enough. You get relevant results feeling confident and repeat analysis prior to paper submission. But while you keep looking at your data, expecting a consistent, it never comes. Have situations like these ever happened to you or your colleagues? Immunoaffinity-based assays provide valuable results in primitive experimental conditions without any special requirements, but their variability and specificity should be considered if biomolecules are present at low levels with matrix interference. Due to drawbacks of immunoassays, such as cross reactivity caused by structural similarity and conjugation diversity of molecular backbone, mass spectrometry-based profiling methods combined with either gas chromatography-mass spectrometry (GC-MS) or liquid chromatography-mass spectrometry (LC-MS) are now

recommended, especially, in clinical studies. In this presentation, I will provide basic concepts and examples “what makes the analytical results valuable”. I will also cover sampling steps, including collection, delivery, and storage, which are

very important to obtain comprehensive results. All issues here will be explained by steroid analysis from various biological specimens as the practical examples.

(文責：佐藤文俊)