Message from the President

Dear friends, customers and business partners,

I am glad to present the 2nd volume of Itamar Medical Japan’s Newsletter, which focuses on our main activities from the second quarter of the year. At the heart of Itamar Medical Japan’s vision stands the core value of “life” – granting people, at all ages, vitality and energetic feeling, while striving to prevent disease. Itamar Medical’s innovative PAT® (Peripheral Arterial Tone) technology, incorporated in both EndoPAT® and WatchPAT®, sets a new standard for early detection and prevention of diseases.

In this volume, I wish to address “smoking” or better phrased as “smoking cessation” – a topic that has recently become highly actual on Japan’s national agenda – from cardiovascular and social angles.

While you are reading these lines the Rio Olympic Games have come to a conclusion and the countdown to the Tokyo 2020 Games has begun. Japan will surely manage this huge operation with supreme accuracy and spectacular performance. However it is about to face a much larger challenge in turning public places “smoking free”. Following the 2004 Athens Olympics all Olympic cities have taken actions to regulate passive smoking in public places. Passive smoking has become a major point of concern in Japan, due to the wide spread of smoking among Japanese (~ 30% of the population) and the social behavior related here to.

In an interview with the Asahi Shimbun (August 9th, 2016) Tokyo’s new Governor, Ms. Yuriko Koike, expressed her wish to take measures towards preventing passive smoking in the capital towards the 2020 Tokyo Olympics. She said she will consider working with the central government on an anti-smoking law or have the metropolitan government adopt national regulations.

People usually associate smoking with cancer, yet smoking is also considered as one of the major risk factors in the development of Atherosclerosis and other life-threatening diseases, such as myocardial infarction (MI), commonly known as heart attack, and strokes. Another important side effect of quitting is weight gain, as people tend to replace “one bad habit with another”. It is not surprising that weight gain has been associated with quitting, considering that nicotine is an appetite suppressant. Despite fears of gaining weight during the quitting process, any doctor will tell you that you are still better off quitting.

In Japan, the smoke cessation process is reimbursed by medical insurance and performed in more than 16,000 medical institutions, which offer nicotine addiction treatments and physician’s guidance. However, statistics tell us that only 3 of 10 people will succeed at quitting, due to strong feelings of addiction and loss of motivation.

In this volume, we present you with an intriguing interview conducted with Dr. Yasuhiko Takemoto, a cardiologist from the Osaka City University Hospital. Here he describes EndoPAT®’s importance in helping smokers quit: it provides them with an easily understood number (the RHI value) that reflects their endothelial function improvement every time they come in for treatment. This boosts their motivation for keeping up the treatment.

We expect that smoking cessation will soon become a central topic on the Japanese national agenda, as the need to turn public places in Japan smoking free should also be supported by adequate medical care that can help smokers succeed quitting their old habit.

We at Itamar Medical Japan wish to call upon more physicians to join forces with us in the effort to support and motivate smokers to quit, thus improving our environment while reducing the related national medical expenses.

With Best Wishes,
Ira Prigat
An ally for giving up smoking – successfully! So how can EndoPAT® support smokers?
An interview with Dr. Yasuhiko Takemoto

“Imagine you are out drinking with your friends, and hospital’s smoking cessation clinic. Osaka Municipal University Hospital and in charge of the treatment. Dr. Yasuhiko Takemoto is an associate professor of medicine at Osaka Municipal University Hospital and in charge of the hospital’s smoking cessation clinic.

Why do so many smokers fail at quitting the habit?
“Imagine you are out drinking with your friends, and one of your friends says “You quit smoking? But you can make one exception right? Just for today?” The common culprit is this “one exception”. This is the keyword”.

“Then, there are those who have become apathetic to the idea of quitting. People say that smoking is bad for you but right now you feel healthy – “It’s not like smoking is really making any difference, right?” I get many patients who think like this but this kind of thinking is actually quite dangerous. Tobacco is one of the leading risk factor in the development of atherosclerosis but few know they are at risk until they develop much more serious, life-threatening diseases – such as myocardial infarction and the likes.”

Atherosclerosis is a disease, in which fat deposits and plaque build up inside and on the walls of the arteries, narrowing the vessels and complicating the flow of blood. Most people do not realize until the symptom evolves into more serious diseases - hence the origin of the nickname “silent killers”. Smoking is one of the major contributors to the development of atherosclerosis.

How to check the progression of Atherosclerosis
To maintain their determination, smokers must realize the damage they are causing to their bodies. And yet understanding something with your head does not necessarily always translate into action – many people find it hard to keep up.

At Professor Takemoto’s smoking cessation clinic, they have introduced a device that makes the way for success. EndoPAT® is a medical device used for assessing “Endothelial Function”. The Endothelium is the innermost layer of the arteries, responsible for many critical mechanical, chemical and biological processes related to the health and functioning of the vessels, and is also significantly affected by the development of atherosclerosis. By assessing the functioning of the endothelium, EndoPAT® indicates how far you are on the road to developing atherosclerosis.

“While smoking is only one of the risk factors of atherosclerosis but if you compare smokers to non-smokers, you definitely see a difference in their endothelial function.”

The test is simple. You lie down. A socket-like “probe” is positioned on the tip of the finger and a cuff – the same thing you would use for measuring blood pressure – is placed on your arm, occluding the blood flow. After you release the cuff, blood gushes through the arm to the finger. The mediation of the flow offers an indication of the elasticity of your vessels. EndoPAT® can significantly improve the likelihood of success by helping to monitor the progress of the smoking cessation treatment and illustrating the body’s health situation.

The following article was originally featured on the online media “Medical Pop”. It was written to explain the latest in medicine and medical science in a way that allows the average man to easily understand and reflect while keeping the integrity of the practitioners and the field. For those who would like to hear more about Dr. Takemoto’s approach to the smoking cessation and how he applies EndoPAT® in his practice, we have uploaded full-length video interview to our website.
EndoPAT® is an innovative, safe and non-invasive diagnostic device for Functional Vascular Health Assessment for both large and small arteries. The EndoPAT® measures changes in pressure that indicate changes in arterial blood volume and result in a value called RHI. The test is uniquely performed at the fingertip and proven to be accurate, sensitive and reproducible.

According to American Heart Association* over 50% of coronary deaths had NO previous symptoms and roughly 50% of heart attacks were NOT considered “high risk” patients. Demonstrated in multiple clinical studies, RHI score was proven a novel independent risk factor that predicts heart disease beyond traditional risks such as Cholesterol and Hypertension and helps guide patient management.

Validated with the gold standard and due to its accuracy and automatic analysis, EndoPAT® is endorsed by leading clinicians as a patient management tool for individuals at intermediary risk like those who suffer from Non-Obstructive Coronary Artery Disease (NOCAD), patients with Metabolic Syndrome and those who don’t respond to standard therapy.

It has been used in a constantly growing number of research studies, so far resulting in over 400 peer reviewed publications in leading medical journals and numerous abstracts.

* Noninvasive Identification of Patients with Early Coronary Atherosclerosis by Assessment of Digital Reactive Hyperemia- Bonetti et al., JACC 2004

Dr. Hiroshi Hazama
Head of Institute, Hazama Clinic

Data obtained from EndoPAT® is extremely effective as a primary way of determining the effectiveness of statin, ezetimibe, EPL, and probucol fibrate. EndoPAT® result deteriorates from smoking and improves by cessation of smoking. If you include EndoPAT® in your daily practice, both physicians and patients can see the impact of medications and lifestyle improvement, allowing you to have enjoyable communication with patients during your practices. These are some of the reasons that EndoPAT® is an essential.

I consider EndoPAT® is especially effective for assessing Endothelial Function in diabetes patients, as it identifies Endothelial Dysfunction at earlier stages than ABI or PWV. Including EndoPAT® in our daily practice allows us to compare RHI before and after (treatments) and it is a very effective tool to motivate, treat and educate patients about cardiovascular diseases. If more facilities which see diabetes outpatients include and expand the use of EndoPAT®, we can expect to prevent cardiovascular diseases and diabetes complications, and as a result reduce the development of the disease itself.

Dr. Kunihiro Suzuki
Associate Prof., Department Of Endocrinology and Metabolism, Dokkyo University

About EndoPAT®
The study investigates whether concurrent obstructive sleep apnea (OSA) and smoking poses an additive detriment to endothelial function by looking at 114 Chinese men without chronic illness in terms of smoking pack-year exposure, polysomnography and EndoPAT-RHI, serum 8-isoprostane, advanced oxidation protein products (AOPP) and monocyte chemo-attractant protein-1 (MCP-1).

**RESULTS:** RHI (adjusted for age and BMI) was inversely correlated with apnea-hypopnea index (AHI), (p = 0.092); oxygen desaturation index, (p = 0.024); duration of saturation <90%, (p = 0.020); and minimum saturation, (p = 0.008). RHI was shown to decrease in the group with increasing pack-year (p = 0.018), and was lower with concurrent smoking history and moderate-severe OSA (AHI ≥15/h). Serum 8-isoprostane and AOPP were positively related to OSA severity, while MCP-1 correlated with quantity of smoking. Severity of intermittent hypoxia, MCP-1 and pack-year exposure were shown to be independent predictors of RHI.

**CONCLUSION:** OSA and smoking were independent risk factors. Their concurrence was associated with the most severe impairment of endothelial function.


The number of PAT® related publications keeps increasing at a very high rate. We are delighted to here bring you a taste of some of the latest interesting and insightful papers on PAT® technology findings related to endothelial function and lifestyle diseases.

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**Endothelial Function Predicts New Hospitalization due to Heart Failure Following Cardiac Resynchronization Therapy**


patients immediately before they were implanted with Cardiac Resynchronization Therapy (CRT) for the treatment of advanced HF (baseline). They were measured again 6-8 months after CRT. In 24 of the patients CFR was determined by transthoracic echocardiography. Depressed RHI was defined as ≤ 1.5. Follow-up during 343±120 days was obtained in 20 patients with preserved RHI (age 66±1.8 years) and in 14 with depressed RHI (age 71±2.2 years).

**RESULTS:** Kaplan-Meier survival analysis demonstrated higher prevalence of new hospitalization due to HF progression (log-rank 5.40) in the depressed RHI group. Baseline RHI values were positively correlated with 6-8 month CFR change (R = 0.434, p = 0.0343).

**CONCLUSION:** The study suggests that Baseline RHI could predict the long-term outcome of CRT and that improvement of coronary microcirculation might be associated with better baseline RHI.

In May and July, Nihon Kohden and Itamar Medical Japan brought their combined efforts to raise public awareness to the early detection of diseases and proactive prevention through Endothelial assessment by appearing in two national congresses, the 9th International Conference on the Biology, Chemistry, and Therapeutic Applications of Nitric Oxide and the 48th Annual Scientific Meeting of the Japan Atherosclerosis Society.

NO Gakkai

For the 9th International Conference on the Biology, Chemistry, and Therapeutic Applications of Nitric Oxide, Itamar Medical Japan organized a luncheon seminar entitled “Endothelial function – from research to clinical use”. Dr. Yukihito Higashi (Hiroshima University Hospital, The Medical Center for Translational and Clinical Research), Dr. Minako Tojo (Kitasato University Hospital, School of Allied Health Sciences, Department of Rehabilitation) and Dr. Yasushi Matsuzawa (Yokohama City University Hospital, Center for Cardiology) gave three strong presentations to a full audience.

Congress president Dr. Hiroaki Shimokawa (Tohoku University Graduate School of Medicine, Department of Cardiovascular Medicine) who joined as chairman took active lead of the following Q&A session and engaged both audience and speakers for a stimulating discussion, bringing the seminar to a successful conclusion.

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On July 15th, Itamar Medical Japan hosted a sponsored symposium at the 48th Annual Scientific Meeting of the Japan Atherosclerosis Society, under the headline “Diagnosing Atherosclerosis: Managing Endothelial Dysfunction”.

The symposium was inaugurated by Dr. Kayoko Sato (Tokyo Women’s Medical University Hospital, Department of Cardiology) who, together with Dr. Yukihito Higashi, acted in the double position of chairmen and speakers. They were joined by Dr. Tatsuya Maruhashi (Hiroshima University Hospital, Department of Cardiology), Dr. Seigo Sugiyama (Jinouchi Hospital, Diabetes Care Center, Department of Cardiology) and Dr. Minako Tojo for a 2-hour session held in the concord hall of the Keio Plaza Hotel in Tokyo.

Dr. Sugiyama especially took to the podium with strong presence. He brought the audience closer to the clinical use of endothelial dysfunction by giving a powerful presentation of patient case reports and stressing the role of early detection in disease prevention in his study. Dr. Tojo spoke about Endothelial function in relation to heart rehabilitation giving insights on the effect of lifestyle in the improvement in the condition of her patients.

Finally, Dr. Higashi concluded the symposium with promising remarks for a and a positive outlook on the future of measuring and evaluating endothelial dysfunction, encouraging more doctors, professors and researchers to engage the topic in their work.
The 65th Japanese Association of Medical Technologists Congress
September 3rd (Sat) - September 4th (Sun)

Kobe International Exhibition Hall
6-11-1 Minatojima-nakamachi, Chuo-ku, Kobe 650-0046
Congress President Yuuji Nakamachi
(Kobe University Hospital, Department of Clinical Laboratory)

The 64th Annual Scientific Session of the Japanese College of Cardiology
September 23rd (Fri) - 25th (Sun)

Tokyo International Forum
3-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-0005
Congress President Hiroyuki Daida
(Juntendo University, Graduate School of Medicine Department of Cardiology)