

International Society of Hypertension HYPERTENSION NEWS



March 2016, Opus 44

Join us at the ISH Biennial Scientific Meeting in Seoul 24-29 September 2016!

"Working together for better BP control and CVD reduction"

www.ish2016.org



Contents

Notes from the Editor	Page 2
Council nominations	Page 2
From the ISH President	Page 3
The Lancet Commission on Hypertension	Pages 4-5
Hypertension Seoul 2016	Page 6
Hot Off The Press: (1) Heart rate and cardiovascular risk	Page 7
(2) Greater benefit with more intensive blood pressure lowering	Page 8
(3) Activation of Cardiac Fibroblast Growth Factor Receptor 4 Causes Left Ventricular Hypertrophy	Page 9-10
New Investigators of the month 2016	Page 10
Franz Volhard of the ISH	Pages 11-12
Literature and medicine: towards being a good doctor	Pages 13-14
World Hypertension Day	Page 15
ISH Mentorship Scheme Story Corner	Page 16
Introducing our 1st Emerging Leaders	Page 17
Arterial Hypertension Impact and Cardiovascular Risk Factors in Latin America	Pages 18-20
The ISH goes to India	Page 21
On Rounds - 1000 Internal Medicine Pearls	Page 21
Certificate Course in Management of Hypertension	Page 22
Letter to the Editor: Sex and gender	Page 23
World Heart Federation Advert	Page 24
Membership Renewals	Page 24
Corporate Member Information	Page 25

Notes from the Editor - Lars H. Lindholm



Dear ISH member,

Once again, it is my pleasure to present you with a new issue of Hypertension News (Opus 44). As before, I want to extend my sincere thanks to the members of the ISH Communications Committee Neil Poulter, Thomas Kahan, Dylan Burger, and the lovely Helen Horsfield.

In this issue, we focus on the upcoming ISH Scientific Meeting in Seoul. I sincerely hope that I will meet you there. South Korea is a fascinating and friendly country and I am sure that our hosts will prepare a good scientific meeting with many social events as well.

One of the highlights of the ISH meeting in Seoul will be the release of the first report from The Lancet's Hypertension Commission, chaired by Professor Michael Hecht Olsen from the University of Odense in Denmark. Our Society is one of three sponsors of this project; the other two are the Centre for Disease Control and Prevention (CDC) in the USA, and the University of Southern Denmark in Odense.

In this issue of Hypertension News, Michael Hecht Olsen tells us about the work of the relatively young Commissioners from different parts of the world (pages 4-5). They have met several times and their next meeting is scheduled for early May in London, after their report has been extensively reviewed. Three senior advisors - John Chalmers, Sydney, Stéphane Laurent, Paris, and Neil Poulter, London - participated in their last meeting.

The Lancet's Commissions are not just big reviews. They have a central message and will make recommendations for change to be followed-up prospectively. We have asked Dr. Stuart Spencer, Senior Executive Editor at The Lancet to expand further on this in the June Issue of Hypertension News.

As always, this issue of Hypertension News gives you several interesting "Hot Off The Press" reports, this time written by Thomas Kahan (pages 7-8) and Dylan Burger (pages 9-10). There is also a review by Steven Harrap of the Franz Volhard Award, the most prestigious award of our Society (pages 11-12). Finally, I recommend that you read Eoin O'Brien's contribution entitled: "Literature and Medicine: Towards Being a Good Doctor" (pages 13-14).

Have a good read!

Lars H Lindholm , Editor

CALL FOR NOMINATIONS - ISH COUNCIL (2016 -2020)

DEADLINE: 6 JULY 2016

Positions on the ISH Scientific Council will become available at the next Scientific Meeting to be held in Seoul, Korea (24-29 September 2016). The Society is now inviting nominations from members to fill these positions.

[Click here to view more information on the ISH website.](#)

From the ISH President - Rhian Touyz



In less than seven months we will be getting together in Seoul to enjoy great science at the 2016 ISH Scientific Meeting hosted by the Korean Hypertension Society (Hypertension Seoul 2016) and organised jointly with the Asian Pacific Society of Hypertension (APSH).

This issue highlights the meeting, which promises to be outstanding. With many international speakers, numerous trainee, travel and young investigator awards, prestigious senior research awards, together with an exciting scientific program, we can all look forward to a great meeting. We expect over 200 international guest speakers.

The scientific program covers the very best hypertension research and includes sessions on basic science, translational research, clinical trials and population studies and accordingly there is something of interest for everyone in the hypertension community. Over 200 invited international guest speakers and over 1,000 abstract-based speakers will share the latest findings in the field of hypertension and related cardiovascular diseases.

Specific highlights include:

- Genetic and molecular aspects of hypertension
- Inflammation and oxidative stress
- Hypertension in women
- Hypertension guidelines
- Risk factors and biomarkers
- Global effort for cardiovascular risk reduction through management of hypertension
- Management of hypertension in the aging society
- Future of hypertension research

Our efforts in bringing together hypertension experts from across the world will be especially highlighted in the six **Regional Challenges in Hypertension Management sessions** that will take place on 25th September for (1) Africa (2) East Asia (3) Eastern Europe (4) Latin America (5) Middle East and South Asia and (6) South East Asia.

Not only will the meeting provide a platform for great science, networking and discussion, but ISH will be launching a new initiative on 'Women in Hypertension Research' and will be promoting the New Investigator Committee activities. If you have not yet registered for the meeting, I encourage you to save and do so by the early bird deadline of 31st May. Of note, ISH members are eligible to pay a much reduced fee to attend! Please make every effort to join us in Seoul for the ISH 2016 meeting!

- Rhian Touyz

Hypertension Seoul 2016

The 26th Scientific Meeting of the International Society of Hypertension

September 24(Sat) - 29(Thu), 2016

Coex, Seoul, Korea



Reduced registration fees are available for:

- ISH members
- Those who are under the age of 35
- Those coming from developing countries

Special hotel rates

Special room rates have been secured at the InterContinental Seoul Coex (headquarters hotel for the Hypertension Seoul 2016 Meeting).

Those booking by **May 31, 2016** at http://ish2016.org/05_hotel_tour/s51.html will receive approximately **USD 20** lower than the original discounted hotel rate.

To help you plan your trip

Visit: <http://www.visitseoul.net/>

The Lancet Commission on Hypertension

Michael Hecht Olsen

Centre for Individualized Medicine in Arterial Diseases (CIMA), Odense University Hospital, University of Southern Denmark, Denmark



The Commissioners:

Michael Hecht Olsen (Chair)^{1,2}, Sonia Y Angell³, Samira Asma⁴, Pierre Boutouyrie⁵, Dylan Burger⁶, Julio A Chirinos⁷, Albertino Damasceno⁸, Christian Delles⁹, Anne-Paule Gimenez-Roqueplo¹⁰, Dagmara Hering¹¹, Patricio López-Jaramillo¹², Fernando Martinez¹³, Vlado Perkovic¹⁴, Ernst R Rietzschel¹⁵, Giuseppe Schillaci¹⁶, Aletta E Schutte², Angelo Scuteri¹⁷, James E. Sharman¹⁸, Kristian Wachtell¹⁹, and Ji Guang Wang²⁰.



The Commissioners and external consultants during a recent meeting in Istanbul

Affiliations

¹Centre for Individualized Medicine in Arterial Diseases (CIMA), Odense University Hospital, University of Southern Denmark, Denmark; ²Medical Research Council Unit on Hypertension and Cardiovascular Disease; Hypertension in Africa Research Team (HART), North-West University, Potchefstroom, South Africa; ³Division of Prevention and Primary Care, New York City Department of Health and Mental Hygiene, New York, United States; ⁴Global NCD Unit in the Division of Global Health Protection, Center for Global Health, CDC, Atlanta, Georgia, United States; ⁵Department of Pharmacology and INSERM U 970, Georges Pompidou Hospital, Paris Descartes University, Paris, France; ⁶Kidney Research Centre, Ottawa Hospital Research Institute, Department of Cellular and Molecular Medicine, University of Ottawa, Canada; ⁷Department of Medicine at University Hospital of Pennsylvania and Veteran's Administration, Pennsylvania, United States; ⁸Faculty of Medicine, Eduardo Mondlane University, Maputo, Mozambique; ⁹Christian Delles: Institute of Cardiovascular and Medical Sciences, University of Glasgow, Glasgow, United Kingdom; ¹⁰Department of Genetics and INSERM U 970, Georges Pompidou Hospital, Paris Descartes University, Paris, France. ¹¹The University of Western Australia - Royal Perth Hospital, Perth, Australia; ¹²Dirección de Investigaciones, FOSCAL and Instituto de Investigaciones MASIRA, Facultad de Medicina, Universidad de Santander, Bucaramanga, Colombia; ¹³Hypertension Clinic, Internal Medicine, Hospital Clínico, University of Valencia, Spain; ¹⁴The George Institute for Global Health, University of Sydney, Sydney, Australia; ¹⁵Department of Cardiology, Ghent University &

Biobanking & Cardiovascular Epidemiology, Ghent University Hospital, Ghent, Belgium; ¹⁶Department of Internal Medicine, University of Perugia, Terni University Hospital, Terni, Italy; ¹⁷Dirigente Medico Geriatria presso Home Care Unit - ASL ROMA D, Rome, Italy; ¹⁸Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia; ¹⁹Department of Cardiology, Division of Cardiovascular and Pulmonary Diseases Oslo University Hospital, Oslo, Norway; ²⁰The Shanghai Institute of Hypertension, RuiJin Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, China.

Hypertension is still the number one killer in the world despite extensive knowledge about how to prevent and treat hypertension, and elevated blood pressure is the main preventable risk factor for cardiovascular diseases worldwide (1-3). Globally 80% of all cardiovascular mortality is estimated to occur in low-income and middle-income countries (LMIC) (4-5), where awareness, treatment, and control of hypertension are approximately 50% of subjects with hypertension, 66% of aware subjects, and 33% of treated subjects respectively (6). Moreover, treated people with hypertension and blood pressure below 140/90 mmHg still have an approximately 50% increased risk of any cardiovascular event.

Therefore, *The Lancet* took the initiative last summer to launch a Commission on Hypertension, with the aim of writing a report that should initiate a campaign to implement priority actions to improve management of elevated blood pressure and hypertension globally. The first draft of the report has focused on unsolved issues, rethinking these in the context of new techniques to identify new ways to manage hypertension globally. As new techniques are important part of the solutions, the suggested actions are not always based on strong evidence, but they will highlight where further research might be most beneficial.

As chair of the *Lancet* Commission on Hypertension, the last six months has been very educational and rewarding for me on many levels, although sometimes somewhat stressful. It has been wonderful and exciting to have the opportunity of participating in this very important project, together with 19 dedicated fellow commissioners from all over the world, with high levels of expertise in different areas related to the management of hypertension.

Listening to the sometimes very different arguments has been very educational, and surprisingly we have always managed to reach agreement. But such a process takes time, and therefore the report did not develop as fast as planned, leading to some very busy and sometimes rather

stressful weeks at the end of December. However, those weeks were also very rewarding because everyone worked together on the web in a very constructive way.

The commissioners have just held a very intensive three day working meeting in Istanbul where we received thorough and constructive comments from three external consultants, Professors Neil Poulter, John Chalmers and Stéphane Laurent, who during the following days participated in the many discussions and revisions. In the end we had a clear outline for a stronger document acceptable to all, accompanied by a list of tasks distributed among the commissioners.

Therefore, I will use this opportunity to thank all my fellow commissioners for their dedication to the project, the consultants for their enthusiastic participation and Stuart Spencer for his support and guidance. Finally, I would also like to thank the International Society of Hypertension, the US Centers for Disease Control and Prevention, Odense University Hospital and the University of Southern Denmark for their scientific and financial support.

- Michael Hecht Olsen

REFERENCES

1. Lim SS, Vos T, Flaxman AD, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; **380**: 2224–60.
2. Danaei G, Finucane MM, Lin JK, et al. National, regional, and global trends in systolic blood pressure since 1980: systematic analysis of health examination surveys and epidemiological studies with 786 country-years and 5.4 million participants. *Lancet* 2011; **377**: 568–77.
3. Go AS, Mozaffarian D, Roger VL, et al. American Heart Association statistics committee and stroke statistics subcommittee. Heart disease and stroke statistics 2014 update: a report from the American Heart Association. *Circulation* 2014; **129**: e28.
4. Lozano R, Naghavi M, Foreman KT, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; **380**: 2095–128.
5. World Health Organization. A global brief on hypertension: silent killer, global public health crisis. http://apps.who.int/iris/bitstream/10665/79059/WHO_DCO_WHD_2013.2_eng.pdf (accessed July 23, 2015).
6. Chow CK, Teo KK, Rangarajan S, et al, for the PURE (Prospective Urban Rural Epidemiology) Study investigators. Prevalence, awareness, treatment, and control of hypertension in rural and urban communities in high-, middle-, and low-income countries. *JAMA* 2013; **310**: 950–68.
7. Blacher J, Evans A, Arveiler D, et al. Residual cardiovascular risk in treated hypertension and hyperlipidaemia: the PRIME Study. *J Hum Hypertens* 2010; **24**: 19–26.



*"Working together for better
BP control and CVD reduction"*

Hypertension Seoul 2016

The 26th Scientific Meeting of the International Society of Hypertension

in collaboration with the 12th Congress of the Asian Pacific Society of Hypertension (APSH)
the 25th Annual Scientific Meeting of the Korean Society of Hypertension (KSH)

September 24(Sat)-29(Thu), 2016 Coex, Seoul, Korea

Register by MAY 31, 2016!

Register today and benefit from savings up to USD 200 with the Early Bird Registration!
Please visit www.ish2016.org for further information.

Key Dates

Early Bird Registration Deadline

May 31, 2016

Late-breaking Abstract Submission Deadline

June 30, 2016



Gyeongbokgung, Hyangwonjeong

www.ish2016.org

Hot Off the Press



Thomas Kahan

Karolinska Institutet, Department of Clinical Sciences, Danderyd Hospital, Division of Cardiovascular Medicine, Stockholm, Sweden; and Department of Cardiology, Danderyd University Hospital Corporation, Stockholm, Sweden

Heart rate and cardiovascular risk

A high heart rate indicates high cardiac sympathetic and/or low vagal activity, and is associated with elevated blood pressure, cardiovascular and metabolic risk factors and an increased risk for cardiovascular events [1]. This association is present in healthy persons and in patients with established cardiovascular disease. Thus, an increase in heart rate may be a marker of increased sympatho-adrenal activity related to the development of cardiovascular disease [2]. However, the impact of bradycardia on future cardiovascular events has been less clear.

Recently Dharod *et al* reported from the Multi-Ethnic Study of Atherosclerosis (MESA) on the risk of bradycardia and the risk of future cardiovascular events [3]. In a retrospective analysis of 6733 men and women with a multi-ethnic background, aged 45 to 84 years and free of clinical apparent cardiovascular disease, the risk of incident cardiovascular disease and all-cause mortality was followed during 10 years. Mean age was 62 years and 53% were women. In 5831 participants not taking heart rate modifying drugs, resting heart rate was 63 beats per minute, and 5% had a heart rate below 50 beats per minute. In these 5831 participants, the mortality risk for subjects with a heart rate below 50 beats per min, adjusted for confounding influence, was not different (29% risk reduction, 95% confidence intervals -59 – +9%; $P= 0.12$) from the reference group

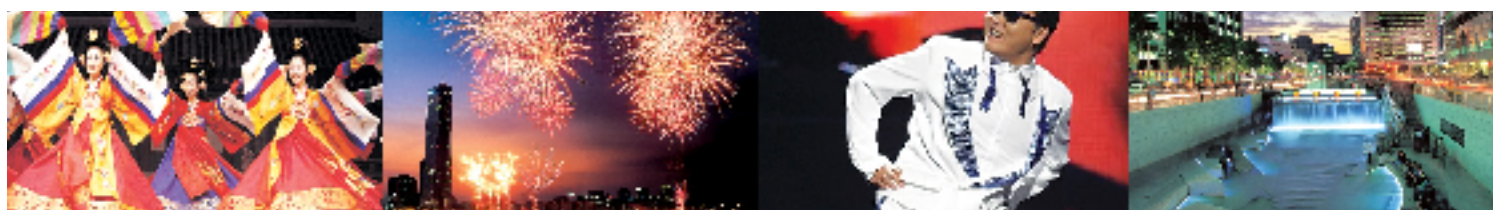
with a heart rate 60-69 beats per minute, whereas subjects with a heart rate above 80 beats per minute had an 49% increased risk (95% confidence intervals +8 – +105%; $P= 0.01$). Also, bradycardia was not associated with incident cardiovascular disease.

Thus, resting bradycardia is not uncommon in apparently healthy middle aged and old persons. Bradycardia is not associated with future cardiovascular disease or all-cause mortality. Resting heart rate, which is easy to obtain in clinical practice, is a useful marker of risk and should not be forgotten when we perform risk stratification in our clinical practice.

REFERENCES

1. Palatini P, Julius S. *J Hum Hypertens*. 1997;11 Suppl 1:S19-27. Association of tachycardia with morbidity and mortality: pathophysiological considerations. *J Hum Hypertens*. 1997;11 Suppl 1:S19-27.
2. Hjelm Dahl P, Rosengren A, Steptoe A (eds). *Stress and cardiovascular disease*. Springer-Verlag London 2012, pp 1-390.
3. Cook S, Togni M, Schaub MC, Wenaweser P, Hess OM. High heart rate: a cardiovascular risk factor? *Eur Heart J*. 2006;27:2387-93.
4. Dharod A, Soliman EZ, Dawood F, Chen H, Shea S, Nazarian S, Bertoni AG. Association of asymptomatic bradycardia with incident cardiovascular disease and mortality: The Multi-Ethnic Study of Atherosclerosis (MESA). *JAMA Intern Med*. 2016;176:219-27.

- Thomas Kahan



Join us at the ISH Biennial Scientific Meeting in Seoul in September!

Thomas Kahan

Karolinska Institutet, Stockholm, Sweden

Greater benefit with more intensive blood pressure lowering?

Although the benefits of blood pressure lowering have been long been established by large randomised controlled trials, the evidence for blood pressure reduction by pharmacological treatment in persons with mild blood pressure elevation or with cardiovascular or other comorbidities has been less certain. Furthermore, the appropriate target blood pressure for patients treated for hypertension remains to be established. The recently presented Systolic Blood Pressure Intervention Trial (SPRINT) [1] has added knowledge to these issues and prompted us to rethink blood pressure targets, at least in high risk patients.

The recently published systematic review and meta-analysis of blood pressure lowering for prevention of cardiovascular morbidity and mortality by Ettehad *et al* is thus very timely [2]. That review aimed to include all randomised controlled trials of antihypertensive therapy, provided they included at least 1000 patient-years of follow-up in each treatment arm. Trials with antihypertensive drugs for indications other than hypertension were also included. Altogether 123 studies and 613,815 patients were included from 1966 to 2015 (in other words, SPRINT was also included). The authors show that every 10 mm Hg reduction in systolic blood pressure reduced the risk of a major cardiovascular event by 20% (95 % confidence interval 17–23%); the effects on coronary heart disease, stroke, and all cause mortality were also significant. The risk reductions were proportional to the magnitude of blood pressure reductions achieved, and similar proportional risk reductions were observed in studies with higher and lower baseline systolic blood pressures to a level below 130 mm Hg. Furthermore, the risk reduction was, by and large, similar in persons with or without cardiovascular co-morbidity.

Another recently published overview and meta-analysis on the effects of blood pressure lowering and outcome in hypertensive patients is also of interest in this context. Thus, Thomopoulos *et al* presented updated results (also including SPRINT) from 16 randomised controlled trials in hypertension between 1966 and 2015 and 52,235 patients comparing more and less intensive treatment; and from 34 trials and 138,127

patients comparing an achieved systolic blood pressure above or below 150, 140, or 130 mm Hg [3]. The results show that more intensive blood pressure lowering reduced the risk for a major cardiovascular event by 25% (95 % confidence interval 15–35%); the effects on coronary heart disease, stroke, and cardiovascular mortality (but not all cause mortality) were also significant. The relative risk reduction was not related to cardiovascular risk (although the absolute risk reduction was, for obvious reasons). Furthermore, the relative risk reduction by a 10/5 mmHg difference in blood pressure was similar whether stratification of the trials were according to a partition value of 150, 140, or 130 mm Hg of systolic blood pressure.

The results of these two analyses are in good agreement and have important implications. First, more intensive blood pressure reduction below the current guideline recommendation of a systolic blood pressure below 140 mm Hg seems to offer benefit. This challenges us to rethink blood pressure targets. Second, the benefit of more intensive blood pressure reduction is also observed in older patients and in patients with high cardiovascular risk. Patients with high cardiovascular risk may have a greater absolute benefit of more intensive blood pressure lowering. Thus, target blood pressure may be better set according to absolute risk in the individual patient.

- Thomas Kahan

REFERENCES

1. SPRINT Research Group. A randomized trial of intensive versus standard blood-pressure control. *N Engl J Med*. 2015;373:2103-16.
2. Ettehad D, Emdin CA, Kiran A, Anderson SG, Callender T, Emberson J, Chalmers J, Rodgers A, Rahimi K. Blood pressure lowering for prevention of cardiovascular disease and death: a systematic review and meta-analysis. *Lancet*. 2015 Dec 23.
3. Thomopoulos C, Parati G, Zanchetti A. Effects of blood pressure lowering on outcome incidence in hypertension: 7. Effects of more vs. less intensive blood pressure lowering and different achieved blood pressure levels - updated overview and meta-analyses of randomized trials. *J Hypertens*. 2016 Feb 4. [Epub ahead of print].



Dylan Burger

Ottawa, Canada /New Investigator and Communications Committee Member

Activation of Cardiac Fibroblast Growth Factor Receptor 4 Causes Left Ventricular Hypertrophy

Grabner A *et al.* (2015) *Cell Metab* 22(6):1020-1032

Fibroblast growth factor-23 (FGF-23) is a bone-derived, phosphate-regulating hormone whose primary physiological effect is to stimulate urinary phosphate excretion and reduce circulating calcitriol concentrations¹. Its effects are mediated by a family of 4 FGF receptors with α -klotho typically serving as a critical co-receptor that enhances binding affinity.

FGF-23 has received attention as a cardiovascular risk factor, particularly in individuals with chronic kidney disease (CKD) where it has long been known to rise in alignment with declining renal function². Several large clinical studies further point to strong associations between FGF-23 and cardiovascular risk. For example, the Health Professionals Follow-up Study³ reported that FGF-23 levels were independently associated with hypertension and obesity while in CKD patients FGF-23 is independently associated with left ventricular hypertrophy⁴. Observations from the HOST study (in CKD patients) further show that elevated FGF-23 levels are associated with all-cause mortality, cardiovascular events and progression to dialysis independent of established risk factors⁵.

From a fundamental research perspective there has been considerable recent interest in off-target biological effects of FGF-23 (those unrelated to mineral metabolism). Such effects could explain the strong associations with cardiovascular events and may suggest a causal role. In a 2011 *Journal of Clinical Investigation* manuscript, Faul *et al.*⁶ reported that FGF-23 treatment increases ventricular myocyte size *in vitro* and induces left ventricular hypertrophy in mice. These effects occurred independently of α -klotho which is absent in cardiomyocytes. While this observation critically separated the cardiac effects of FGF-23 from those on mineral metabolism, the precise molecular machinery responsible for FGF-23 mediated ventricular hypertrophy was not known. The present study⁷, a follow-up to the 2011 JCI paper by the same group,

establishes the molecular machinery responsible.

Using a combination of HEK293 cells, human and mouse cardiomyocytes the authors showed that FGF-23 signaled by increasing phospholipase C gamma activation. When these cells were transfected with klotho (absent in all 3 cell types) the signaling responses shifted to ERK and phospholipase C was no longer activated. The authors went on to show with that phospholipase c signaling responses and cardiomyocyte hypertrophy were exclusively mediated through FGF receptor type 4. In a series of *in vivo* experiments the authors further established a novel role for FGF receptor type 4 in cardiac hypertrophy. First, they observed that genetic deletion of FGF receptor type 4 blocked high phosphate-induced development of left ventricular hypertrophy in mice. Second, they showed that an FGF receptor type 4 blocking peptide blocked development of ventricular hypertrophy and improved diastolic heart function in a rat model of CKD (5/6 nephrectomy). These observations were seen despite similarly impaired kidney function and similar blood pressures. Finally, they showed that knock-in of a constitutively active FGF receptor type 4 in mice led to spontaneous cardiac hypertrophy.

Results suggest that FGF receptor type 4 may play an important role in cardiac hypertrophy, particularly in settings where FGF-23 is increased such as CKD. As such, this pathway may provide a partial explanation for the cardiovascular risk associated with increased FGF-23 levels. It is, however, worth noting that other studies have provided alternative (or additional) explanations for increased cardiovascular risk. For example, Andrukhova *et al.*⁸ have reported that FGF23 can also regulate renal sodium handling and blood pressure through the Na⁺:Cl⁻ co-transporter NCC in distal renal tubules (a process which was dependent upon klotho). Nevertheless this was a comprehensive and interesting series of studies which may have potential therapeutic

implications. My personal enthusiasm for this study is the fact that the potential for translation is, at least in my opinion, higher than is often seen in preclinical study. This is due to the fact that the authors have isolated the pathway involved in FGF-23 mediated ventricular hypertrophy from its effects on mineral metabolism (thereby limiting off-target effects) and the fact that small molecule inhibitors to FGF receptor type 4 are already in therapeutic development for other applications ⁹.

- Dylan Burger

REFERENCES

1. Nitta K *et al.* Fibroblast growth factor 23/klotho axis in chronic kidney disease. *Nephron Clin Pract.* 2014;128(1-2):1-10.
2. Larsson T *et al.* Circulating concentration of FGF-23 increases as renal function declines in patients with chronic kidney disease, but does not change in response to variation in phosphate intake in healthy volunteers. *Kidney Int.* 2003;64(6):2272-2279.

3. Gutierrez OM *et al.* Fibroblast growth factor 23, cardiovascular disease risk factors, and phosphorus intake in the health professionals follow-up study. *Clin J Am Soc Nephrol.* 2011;6(12):2871-2878.
4. Gutierrez OM *et al.* Fibroblast growth factor 23 and left ventricular hypertrophy in chronic kidney disease. *Circulation.* 2009;119(19):2545-2552.
5. Kendrick J *et al.* FGF-23 associates with death, cardiovascular events, and initiation of chronic dialysis. *J Am Soc Nephrol.* 2011;22(10):1913-1922.
6. Faul C *et al.* FGF23 induces left ventricular hypertrophy. *J Clin Invest.* 2011;121(11):4393-4408.
7. Grabner A *et al.* Activation of Cardiac Fibroblast Growth Factor Receptor 4 Causes Left Ventricular Hypertrophy. *Cell Metab.* 2015;22(6):1020-1032.
8. Andrukhova O *et al.* FGF23 regulates renal sodium handling and blood pressure. *EMBO Mol Med.* 2014;6(6):744-759.
9. Hagel M *et al.* First Selective Small Molecule Inhibitor of FGFR4 for the Treatment of Hepatocellular Carcinomas with an Activated FGFR4 Signaling Pathway. *Cancer Discov.* 2015;5(4):424-437.

ISH New Investigators of the month January - March 2016

We would like to congratulate our new investigators of the month for 2016 and encourage you to read interviews with these ISH emerging leaders.

January

Nguyen Van Thao

Hue City, Vietnam

Read an interview



February

Nguyen Thanh Phuong

Hue City, Vietnam

Read an interview



March

Ada Teo

Cambridge, UK

Read an interview



Follow ISH New Investigator Network activities on social media



www.ish-world.com/NIN



www.facebook.com/ISHNIN



www.twitter.com/ISHNIN

You can also find us on [YouTube](#) and [LinkedIn](#)



The Franz Volhard of the International Society of Hypertension



Stephen Harrap

ISH Past President

The University of Melbourne, Australia

There can be few greater honours than to have the peak international society of professional peers dedicate their premier award in one's name. Franz Volhard was posthumously recognized in this way with the first Franz Volhard Award of the International Society of Hypertension in 1972 to commemorate the centenary of his birth.

Through his work on kidney pathology and renal hypertension (among other things) Volhard was a pioneering leader in the early 20th century.

The criteria for the Award speak to achievements of substance and duration:

"The award shall be made biennially to a person or persons who, in the opinion of the Awards Committee of the ISH, shall have initiated in the field of hypertension or in a related discipline, a concept which remains of current interest."

The stature of the Volhard Award is to no small extent defined by the calibre of the recipients and the list of Awardees speaks volumes.

- | | | |
|--------|----------------------|---------------|
| • 1974 | Sir George Pickering | (UK) |
| • 1976 | F Byrom | (UK) |
| • 1978 | Björn Folkow | (Sweden) |
| • 1980 | Edgar Haber | (USA) |
| • 1982 | Paul Korner | (Australia) |
| • 1984 | Franz Gross | (Germany) |
| • 1986 | Alberto Zanchetti | (Italy) |
| • 1988 | Louis Tobian | (USA) |
| • 1990 | John Shepherd | (USA) |
| • 1992 | Colin Johnston | (Australia) |
| • 1994 | Eric Muirhead | (USA) |
| • 1996 | Hugh de Wardener | (UK) |
| • 1998 | John P Chalmers | (Australia) |
| • 2000 | Lewis Landsberg | (USA) |
| • 2002 | Hans Brunner | (Switzerland) |
| • 2004 | Harry Gavras | (USA) |
| • 2006 | Giuseppe Mancia | (Italy) |
| • 2008 | Thomas Pickering | (USA) |
| • 2010 | Graham MacGregor | (UK) |
| • 2012 | John Hall | (USA) |
| • 2014 | Toshiro Fujita | (Japan) |

Sir George Pickering, the Regius Professor of Medicine at Oxford had known Volhard personally and was the first to receive the Volhard Award. Pickering accumulated and interpreted clinical and experimental data with clarity and simplicity. His ability to distil information ('To be truly comprehensive nowadays is to be tedious and dull') around the central theme of the unimodal nature of blood pressure distribution was controversial



From left: to right: Stephen Harrap (ISH Past President) and John Hall (2012 Winner)



Graham MacGregor (2010 Winner)



From left: to right: Toshiro Fujita (2014 Winner) and Ernesto Schiffrin (ISH Past President)



From left: to right: Giuseppe Mancia (2006 Winner) and Michael Alderman (ISH Past President)

and stimulating. His idea expressed in 1968 'No-one nowadays defends a dividing line between normotension and hypertension' rings as true as ever with implications for everything from clinical treatment to genomic discovery. Pickering's work epitomized just the sort of seminal contribution that the Volhard Award seeks to recognize.

The possibility of genetic predisposition to the Volhard Award is raised by the success of Thomas Pickering 34 years after his father. Also a lateral thinker, Thomas brought early insights to the variability of blood pressure and the importance of means of measurement. His Award recognized his characterization of several subtypes of patients with hypertension using clinic, home, and 24-hour blood pressure monitoring. What Sir George might have thought of the systemization of a qualitative definition he fought to dismantle we shall never know!

However, Pickering Senior did recognize the qualitative nature of the complications of high blood pressure in the form of malignant hypertension that Volhard had described years earlier. It was for major contributions to the understanding of malignant hypertension and arteriolar necrosis that the 2nd Volhard Award was presented to FB Byrom. Byrom spent much of his professional life between London and Sydney and it was in Sydney at the ISH Meeting in 1976 that Byrom received his Award. Like Volhard, Byrom was an accomplished violinist and performed solo in the Music Room of the Sydney Opera House on the occasion of his Award.

Byrom had used renal models of hypertension to study the vasculature of the brain. Not surprisingly, blood vessels, the brain and the kidneys are recurring research elements of the subsequent winners of the Volhard Award.

Indeed, it was for his development of the concept of the 'vascular amplifier' that Bjorn Folkow received the 3rd Volhard Award in 1978. A prolific thinker, Folkow highlighted the functional consequences for total peripheral resistance resulting from the structural changes of vascular hypertrophy with implications for both the causes and consequences of hypertension. The vessels were also the focus for John Shepherd in his studies of role of the endothelium and endothelium-derived vasoactive factors in vascular function and hypertension.

Major contributions to the involvement of the kidney in blood pressure came from outstanding researchers such as Louis Tobian (relationship between sodium and renin production by the kidney and roles of calcium and potassium in the genesis of hypertension and avoiding vascular complications); Eric Muirhead (discovery of the renomedullary system of blood pressure control and its hormones); Hugh de Wardener (leading investigations into natriuretic factors); John Hall (renal physiological mechanisms of hypertension and their interaction with obesity and insulin resistance) and most recently Toshiro Fujita (pathophysiology of salt-sensitive hypertension).

No less a group of Volhard Awardees have made their research impacts in neuroscience and includes stars such as Paul Korner (central nervous control of the circulation, particularly baroreflex and chemo reflex function and how this integrated with structural change in the vessels); Alberto Zanchetti (sympathetic nervous system in the pathophysiology of hypertension and its interactions with the kidneys); John Chalmers (the role of the brain in the development of hypertension) and Giuseppe Mancia (cardiac and vascular reflexes in blood pressure and their relation to antihypertensive treatment).

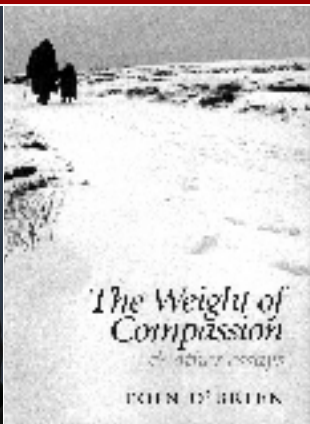
Blood pressure control systems have been the substrate for discoveries that have revealed both the basic elements of such systems, their complex interactions and their place in treatment. Here landmark work has come from Franz Gross (aldosterone and adrenocortical involvement in hypertension); Edgar Haber (development of antibodies for angiotensin and renin); Colin Johnston (clinical and experimental research addressing the renal and hormonal regulation of blood pressure); Hans Brunner (role of renin and the renin-angiotensin system in blood pressure regulation), Harry Gavras (use of ACE inhibitors in the treatment of hypertension and congestive heart failure) and Graham MacGregor (salt intake, the kidney and blood pressure control mechanisms and treatment). The fascinating links between various control systems in explaining the relationship between weight and blood pressure saw Lewis Landsberg receive the first Volhard Award for the 21st Century.

Impressive as the catalogue of Volhard Awardees might be, one could imagine others could merit such a distinct honour. Many are now no longer with us, unfortunately. It is incumbent on those of us in the field to ensure that we don't let other deserving outstanding colleagues slip through the nomination process.

In thinking about this, remember that there is no stipulation that Awardees must be male or from any certain geographical region. It would be marvellous to see this particular mould broken sometime soon, especially given the commitment of the ISH to promoting women and representing all the regions of the world.

We hope that in 2074, when today's New Investigators look back at the first 100 years of the ISH Volhard Award, they will be filled with pride.

Literature and medicine: towards being a good doctor



Eoin O'Brien

Professor of Molecular Pharmacology at Conway Institute of Bimolecular and Biomedical Research, University College Dublin, Ireland

Picture left: Book cover for *Weight of Compassion & Other Essays* O'Brien E. Lilliput Press. Dublin. 2014.

I was persuaded by Gerald Dawe, Professor in English, at Trinity College Dublin, to bring together the essays of a non-scientific nature I had written over many years. His persuasion resulted in the publication of *The Weight of Compassion & Other Essays* in 2012. He had sensed, correctly I hope, that there was ample diversity in what had intrigued me outside of scientific medicine to be of wider interest but I approached the task with some trepidation. I had, it is true, been attracted to write on art and history and on issues related to the generality of medicine rather than its science, which has been, of course, my main preoccupation but these essays scattered over many years and numerous journals and periodicals had to be collected and then made acceptable for contemporary printing.

The task of assembling the essays into an order that would give the whole a coherence that was not chaotic was more daunting. After all these essays had been written according to the demands of editors and the topicality of the subject to its time; how then could they be given a semblance that might bring to the whole an order that was not contrived? In assembling the essays, I had to ask myself on more than one occasion if my interests in the humanities and friendship with artistic talents had influenced me for the better as a doctor, or had I been distracted from what I had been trained to do, namely caring for sick people? This leads inevitably to the question as to what are the essential ingredients that constitute a good doctor? And the answer lies of course in the eye of the beholder insofar as any definition will be influenced by the vantage point from which the view of 'goodness' in a doctor is perceived.

The academicians, whose business it is to train doctors and who are given as many as six years to do their job, will define the 'best doctor' as the one who achieves first class honours and heads the class. To these pundits the qualities of compassion and feeling for fellow man in the doldrums is, as often as not, a far remove in their exegesis of what constitutes a 'good doctor'.

To the patient, however, the academic achievement of

the newly qualified doctor will pale to insignificance in the shadow of unkindness or a lack of empathy with the human condition of pain, suffering or hopelessness. And yet this view taken to extremes can be misleading. A dullard full of human kindness yet oblivious to the scientific advances in medicine can be the antithesis of the good doctor for an ill patient. So in pursuing this theme – no extremes where moderation is likely to be the essence of reality!

Then there is the administrative or health care provider's interpretation of the 'good doctor' and this will focus on getting the job done at the least cost to society; there will be little or no room for the caring spirit or academic excellence, though in this regard it has to be said that our teaching hospitals now belatedly pay lip service to the importance of research and scientific advancement. In truth, however, these administrative stewards are driven more often by fiscal rather than altruistic motives. When I embarked on a research path back in the 1970s I moved around the hospital quietly lest I draw the attention of the authorities to the nefarious practices in which I was engaged. I also tended to be discreet about circulating my research publications lest I be called to account for the time or hospital resources dissipated in such endeavours. Now it is common practice for hospitals and universities to levy 'overhead' charges on research projects. I recall one professor of surgery admonishing me for devoting time to 'high falutin' research pointing out that my job was to look after sick people, and that the hospital needed 'belt and braces men' (the term still irritates me but conveys tersely a philistine outlook) who would concentrate on what they were being paid to do – and this from a professor!

To the university leaders of academe a 'good doctor' will be assessed on his productive output measured by the only scientific standard that permits the use of the term 'productive', namely publications in peer reviewed international journals and the impact they are judged to have on science. This assumes, of course, that the university administration understands the complex intricacies of clinical and scientific research, which,

alas, is not always so.

What then do organizations dealing in humanitarian affairs have to say about the 'good doctor'? These bodies are plentiful, ranging from small non-governmental organizations to massive bodies, such as the World Health Organization, but all have a common remit, namely the improvement of health in underprivileged countries torn by strife or decimated by poverty. And here we see another quality being asked of the 'good doctor'; he or she should be concerned enough to give of their time and expertise to help the disadvantaged societies of the world rather than being driven solely by career ambition or being obsessed with self-aggrandizement. Notably these sentiments are not peculiar to doctors emanating from affluent societies but also apply to those graduating from the medical schools of low-resource countries who may be seduced by the rewards to be gained in more affluent societies. The dilemma facing an altruistically minded young doctor is that our universities effectively penalize those who are prepared to jump off the academic treadmill to devote time to humanitarian activity.

Finally, there is yet another, often forgotten, view of what constitutes being a 'good doctor' and that is the doctor being true to himself, having the capability to delve into one's self, to deny the apathy of routine from smothering the qualities that are inherent in simply being 'good'. I am at the close of a career that has spanned a half a century and all I can say is that I know I have been a 'good doctor' too little of the time but I can in honesty say that I have tried to keep an open mind on the subject and to search for influences that might help to make me a 'better doctor', and these have often been at some remove from medicine. And who should have the last word in judgment of my 'goodness' or 'badness' as a doctor? I think it must be my patients – how many thousands I know not – and neither they nor I can be fully aware of the influences that have made me what I am, but to seek and search for these is the essence of this book.

The essays reproduced in *The Weight of Compassion* are confined to those I wrote on non-medical or non-scientific subjects. It would be remiss of me, none the less, not to make brief mention of my life-long association with scientific research and, more importantly, to acknowledge my many friends and colleagues who allowed me to participate in clinical research without knowing of my 'secret life', or as Chekov would have it, 'my mistress'. The advancements in the management of high blood pressure (now recognized as the leading cause of mortality across the world) are mirrored, I believe, in the history of the Blood Pressure Unit that was founded in the Charitable Infirmary in 1978. This unit, the first of its kind in Ireland, was dedicated in name and purpose to bringing the most efficient and up-to-date management of this

serious illness to the Irish people, while also being determined to bring an Irish influence to international hypertension research. The latter endeavour was based on the belief that successful research in medical science could only be achieved through collaborative research – there was no longer a place for the scientist or institution to be an island unto themselves.

The opening essays of *The Weight of Compassion* were influenced by personalities I knew and admired, examples being Samuel Beckett, Denis Johnston, Micheál Mac Liammóir and Nevill Johnson. I have always respected talent, be it in music, painting, literature or science. As a doctor I have had to care for many gifted people and this has brought me to appreciate how their sensitivities and needs are unique, often very demanding, but always, in my opinion deserving attention, if for no other reason but that the demands of being endowed with a particular talent brings with it an imperative to serve the genius; the struggle between obligation and the eccentricities that so often comprise the persona of the intellectual can, whether successful or not, result in a tortuous and painful odyssey that may see the talent dissipated more often than it thrives. A doctor can accompany an artist on this odyssey, and if he is appreciative of the pain of the struggle for achievement and expression, he can provide solace with advice and medical support.



Picture left: Nevill Johnson, Artist and photographer



Picture Right: Samuel Beckett, Writer and Nobel Laureate

In revisiting these essays many years after their execution, I can be critical, of course, of style and the quality of prose, but not of the content or time spent in attempting to capture something of genius and personality. Each friendship left me changed; I say changed, which begs the question as to 'how one was changed?' and this is not always easy, or indeed possible, to answer.

- Eoin O'Brien

Save the date! World Hypertension Day (WHD) 2016 will be celebrated during the week of 17-24 May



Know your Blood Pressure www.whoaagan.org

May 17th-24th 2016

Please help us celebrate!

Save the date! World Hypertension Day (WHD) 2016 will be celebrated during the week of 17-24 May. World Hypertension Day (WHD) is an annual initiative of the World Hypertension League (WHL), an affiliated section of the ISH. The theme of WHD 2016 is "know your numbers" with the goal of increasing high blood pressure awareness in all populations around the world. The WHD 2016 challenge is to screen over one million adults. We encourage you to contribute data between 17-24 May to help reach this goal!

The WHL and ISH encourage all WHL and ISH members to contribute reports on blood pressure screenings recorded between 17-24 May 2016.

The WHL and ISH recognise that there are complex challenges to prevention and control of hypertension globally. However, in most settings, efforts to prevent and control hypertension are neither comprehensive nor coordinated. To help counter this, the WHL and ISH challenges all members and partners to participate in the World Hypertension Day celebration with rigorous blood pressure measurement and NCD awareness efforts in the community and clinical settings, and to report the results of the screening activities.

Please begin your planning, gathering resources, community outreach, and sponsors to maximize the number screened. We look forward to everyone's participation and compiling and publishing the results of WHD-2016.

WHD 2016 screening reporting form

The WHD 2016 screening reporting template asks participants to provide the following information.

- Team name / location / nation / logo or flag performing the screening
- Number of people screened
- Was awareness of hypertension-related stroke

and other NCD provided?

- Was awareness of the importance of physical activity and nutrition (i.e. dietary salt reduction) provided?

Where or when feasible, participants may also report on:

- The proportion of those screened with elevated blood pressure or who were taking antihypertensive medications (prevalent hypertension)
- The proportion of those screened with elevated blood pressure or who were taking antihypertensive medications or who were diagnosed with hypertension by a health care professional
- The proportion with prevalent hypertension who were not aware of having hypertension
- The proportion with prevalent hypertension who were treated with antihypertensive medications
- The proportion of those with prevalent hypertension whose blood pressure reading was below 140 mmHg systolic and below 90 mmHg diastolic.

In due course, the WHL will issue a formal report on WHD-2016 highlighting all contributors and key indicators.

Resources to aid community-based blood pressure screening

The WHL has developed a series of resources to aid community-based blood pressure screening. In 2016, the resources are being field tested in Cameroon, Republic of Congo, Nigeria, Haiti, Brazil and Canada with enhanced versions expected in 2016. Concurrently, several of the resources are being translated (initially in Spanish, French and Portuguese). These WHL resources are available to all to access and adopt to their population through the WHL website and include a 'train the trainer' module for establishing an evidence based BP screening site, a supporting PowerPoint slide set, and supporting YouTube videos.

The WHL has also developed a policy statement to strongly encourage the use of automated blood pressure devices rather than manual blood pressure readings in nearly all screening and clinical settings.

Further information can be obtained by emailing the WHL office (kimbree.redburn@gmail.com) or by viewing the WHL website.

Completed forms can be emailed to CEO@whleague.org for inclusion in the 2016 WHD Report.

ISH Mentorship Scheme Story Corner



Fadi Charchar

New Investigator Committee Member

Robert HT Smith Personal Chair in Cardiovascular Genomics Federation University, Ballarat Australia

Honorary Research Fellow, Universities of Melbourne & Leicester



Welcome to the ISH Mentorship Scheme story corner. Here we would like to update members on the progress of the scheme and provide stories of how new investigator members of our community are benefiting from the guidance, support, and importantly friendship of the more experienced members of the ISH. I hope you enjoy these stories and a huge thank you to all contributors to the scheme, especially mentors and mentees.

The inaugural issue of our news highlights the immeasurable benefit of mentorship when newer investigators encounter difficulties that can affect their professional development.

Thank you, Francine, for sharing your story with us. We look forward to hearing from mentors in future issues.

My experience with the ISH Mentorship Scheme By Francine Marques



Francine Marques

During the High Blood Pressure Research Council of Australia annual meeting in 2011 I met Prof Gavin Lambert, from the Baker IDI Heart and Diabetes Institute. We had a good chat as we shared similar research interests. In 2012, through the ISH Mentorship scheme, Gavin agreed to be my mentor. Our relationship has evolved very much over the past 5 years, and I cannot thank him enough for his help both in my personal life and career development.

His first role as my mentor was to advise me on my National Health and Medical Research Council early career fellowship application. (NHMRC is the Australian version of the NIH or NHS.) Gavin has been part of NHMRC panels for years, and his advice was essential for my successful application back in 2012. We started collaborating that year and this week we had our first manuscript together accepted for publication in a prestigious journal. Besides ongoing projects, Gavin has also given me advice on other papers, projects and my new career development fellowship application, and we are now submitting a NHMRC grant together.

Although Gavin's mentoring has been wonderful for my career development, the biggest impact has been on my personal life. Last year I was diagnosed with ovarian cancer and I went through 5 difficult months of chemotherapy. Not only did Gavin give me ongoing career support during these months, he prepared a picture to cheer me up EVERY week of my treatment. He also spent some time with me at chemo and baked me some delicious slices, which I shared with the nurses and other patients. So besides a mentor he has become a friend!

I consider myself very lucky as these days I get to spend a lot of time with Gavin! Last year I decided to move my research to the Baker IDI, so now we regularly catch up for lunch or a cup of tea.



From left: to right:

Gavin Lambert and Francine Marques

Would I recommend the ISH Mentorship scheme to others? Definitely yes! But as with any other type of relationship, for it to work you need to be willing to make an effort. Reflect on what you want to get out of the mentoring to utilise your mentor's expertise the best way possible. Remember too that your mentor is a very busy researcher (and sometimes clinician too), so respect and appreciate their time and help.

- Francine Marques

Introducing our 1st ISH Emerging Leaders



Alta Schutte

Chair, ISH Membership Committee and New Investigator Liaison Officer

Director, Hypertension in Africa Research Team (HART), North-West University, Potchefstroom, South Africa

The Emerging Leader membership category was launched at the start of this year. This is a new initiative from the ISH where we want to help members to move from Research Fellow to Professional Member. Members will enjoy identical benefits to Professional Members (previously known as Regular Members), but at a much lower fee.

This category has been designed to accommodate early to mid-career research and clinical scientists (junior faculty members) who have completed their doctoral degree (or other qualifying research degree) and are in the process of establishing themselves as scientists or hypertension experts. Membership in this category is limited to three years.

We are delighted to announce and congratulate our first Emerging Leaders (listed as follows) and include a few words from them as to why they were happy to become an Emerging Leader and continue their Society membership.

I very much hope that you will encourage your colleagues and friends to join the Society in the coming weeks. Please see the ISH website for further information. **- Alta Schutte**

Sofie Brouwers

Universitair Ziekenhuis Brussel –Vrije Universiteit Brussel (VUB) Brussels, Belgium

Enayet Chowdhury

Research Fellow, Department of Epidemiology and Preventive Medicine, School of Public Health and Preventive Medicine, Monash University Melbourne, VIC 3004, Australia

Evi Christofidou

Molecular Medicine Research Center University of Cyprus Nicosia, Cyprus

"It is with great pride that I am becoming an Emerging Leader of the premier international society dedicated to research related to blood pressure and associated cardiovascular disease. This category represents a wonderful opportunity for motivated young researchers like myself. It will definitely enhance my professional development."

Francine Marques

Baker IDI Heart and Diabetes Institute Melbourne, Australia

Rachel Wong

University of Newcastle School of Biomedical Sciences and Pharmacy Callaghan, New South Wales, Australia

"I am pleased to continue my membership with the ISH as this will provide the relevant opportunities to increase my profile as an emerging leader in the application of clinical nutrition for the prevention of dementia."



Sofie Brouwers



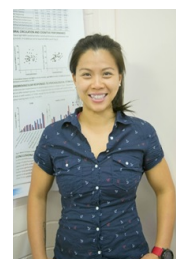
Enayet Chowdhury



Evi Christofidou



Francine Marques



Rachel Wong

Arterial Hypertension Impact and Cardiovascular Risk Factors in Latin America

Agustin Ramirez

2nd in Charge, Arterial Hypertension and Metabolic Unit, University Hospital, Fundación Favaloro, Buenos Aires, Argentina

Member of the Research Career of the National Research Council ONICET, Argentina

Current ISH Positions: ISH Vice President & Member of the Central and South America Regional Advisory Group (RAG)



Latin America (LA) is undergoing a burden of cardiovascular diseases (CVD) and diabetes mellitus type 2 that are responsible for 46% of total reported deaths¹. This is a general phenomenon in developing countries that in 2001 accounted for 79% of all chronic disease-related deaths in the world². Moreover, the adaptation to occidental life styles in developing countries has given rise to an increase in the prevalence of overweight, obesity, hypertension, metabolic syndrome, diabetes mellitus type 2 and CVD³. In addition, changes in nutritional habits and physical activity are the main characteristics involved in the fast economic transition experienced by these countries in recent years⁴. Around 30% of all deaths in the world are attributable to cardiovascular diseases (CVD). Between them, coronary ischemia and stroke are the most frequent causes, being responsible for almost 13 million deaths per year¹. Over these pathologies, arterial hypertension (HT) is the most important risk factor. The increased prevalence of this pathology explains the progressive augmentation of cardiovascular disease in all countries¹.

In past decades in LA life expectancy has increased and so have the main causes of death. Better conditions, development of basic sanitation (potable water) and health programs such as vaccination campaigns have reduced child deaths together with a significant reduction in deaths produced by infectious diseases. However, a threat has arisen associated with new lifestyles related to globalization, characterized by the increased intake of foods with high levels of saturated fats and refined sugars, decreased physical activity, a higher proportion of old people, increased tobacco dependence and urban growth⁵⁻⁸. As a consequence of this, changes in biological characteristics and/or lifestyles have produced a significant increase in the prevalence of cardiovascular risk factors such as arterial

hypertension, obesity, dyslipidemia, metabolic syndrome and type 2 diabetes⁹.

On the other hand, it is very difficult, in LA or other countries, to provide accurate data on the prevalence of arterial hypertension and other risk factors. This is due to the great genetic and epigenetic variability caused by differences in the intra and inter-territorial distribution, social stress (economical intake, education and access to health systems) that have great influence on the incidence and prevalence of the different risk factors^{5,9}.

Recently, the PURE study reported that arterial hypertension prevalence is 50.8% in Argentina, 52.6% in Brazil, 46.7% in Chile and 37.5% in Colombia. The percentage of individuals aware of their hypertension was 57%, those under treatment 52.8% and only 36.3% of treated patients were with BP values lower than 140/90mmHg. All these data indicate that in LA the rate of detection, treatment and BP control are deficient¹⁰. This was supported by a previous study in LA¹¹ showing that the prevalence of cardiovascular risk factors such as arterial hypertension was 18%, dyslipidemia: 14%, diabetes: 7%, overweight or obesity: 23% and tobacco: 30%.

Additionally, in LA cardiovascular diseases work against efforts to fight poverty, and support inequities in health related to economical incomes, gender and race. For instance, living in a poor neighborhood is related to high risk of malnutrition, obesity, arterial hypertension, dyslipidemia, diabetes and metabolic syndrome resulting from a lack of access to healthy foods, regular physical activity and education. To these we must add that there are different black populations in LA as well as descendants differing from the original black people. In these individuals, cardiovascular risk factors are more frequent and the impact on their health is worse

than in white people. We must also include in this group of special populations those living in mountains (Andineans) compared to those living in the coasts or center of the countries.

In conclusion, these are the fundamental causes having a major impact in high cardiovascular risk in LA that is included in what we call low and medium income countries^{6-8, 11,12}. In these conditions, the health impact of cardiovascular diseases is more frequently observed due to social inequities, and maintains a social gap related to the economic possibilities of each social strata¹⁰⁻¹².

In addition, easy access to medical assistance and cardiovascular drugs must be also considered since increasing the control rate of high blood pressure in LA must be an immediate action to be taken. This is supported by the fact that, once arterial hypertension was diagnosed, blood pressure reduction of 10/5mmHg is able to significantly reduce stroke (36%), cardiac failure events (38%), coronary ischemic events (20%), cardiovascular mortality (16%) and all-cause mortality (10%)¹³. In addition, the use of any antihypertensive drug, as either mono therapy or combination, by decreasing blood pressure levels, is able to reduce cardiovascular morbi-mortality¹⁴.

Finally, a recent WHO report informed that it is cost-effective to increase prevention, diagnosis and treatment of arterial hypertension when cardiovascular risk is not present or, when this risk is low to significantly reduce cardiovascular disease prevalence¹⁶.

Accordingly, the Latin-American Society of Hypertension (LASH) proposed to start a project in accordance with the Pan American Health Organization (PAHO) directives on chronic non-transmissible diseases to perform a Primary and Secondary Prevention Program on Hypertension in each country in LA, named 20 / 20. The aim of this program is to target, for 2020, a 20% increase in blood pressure control and to reduce morbi/mortality by 20%. This will be achieved through optimization of prevention and reduction of arterial hypertension prevalence, and the morbi-mortality emerging from other associated diseases resulting from uncontrolled arterial hypertension such as myocardial infarction, coronary arterial disease, stroke and heart or kidney failure.

Accordingly, preventive strategies will be developed directed at lay and medical populations, focusing on educational programs for healthy life styles

and the importance of diagnosis and control not only of blood pressure levels but also associated cardiovascular and metabolic diseases (dyslipidemia, insulin resistance, diabetes, overweight, obesity and metabolic syndrome).

For medical practitioners, courses to update and emphasize the pathophysiological basis, diagnosis and treatment of hypertension and related cardiovascular risk factors will be performed through classroom and/or internet activities.

All proposed activities for LA may be summarized in the following table:

Governance	Regionally proposed (LASH, PAHO) but locally adapted to reach all social strata.	
Resources	Academics	From all countries in LA
	Economical	Health System and Private resources
Financing	Together with the PAHO for each country.	
Delivery	PAHO centralized and locally organized	
Health Care	Responsible in each country to perform an epidemiological data base to evaluate changes in diagnosis, treatment and changes in cardiovascular risk factors.	
Cardiovascular Outcomes	In accordance to the 25 / 25 WHO proposal to develop the 20 / 20 LASH/PAHO project to reduce in a 20% the burden of arterial hypertension in LA.	

To maintain those proposals, the needs are:

1. Continue the production and publication of the Latin American Guidelines specifically on Hypertension¹⁷ that, in this year, the fourth update will be published and, taking into account the increase of Obesity, Diabetes and Metabolic Syndrome, the Latin American Guidelines on Hypertension, Type 2 Diabetes and Metabolic Syndrome⁹.
2. Start with the policies relating to prevention, diagnosis and treatment of hypertension and risk factors associated (life style changes, salt intake, smoking, weight control, etc).
3. Contact with health authorities in each country and the PAHO to facilitate access to medical assistance and treatment drugs for people with social and economical distress.

To start developing epidemiologic studies to evaluate the real situation not only of arterial hypertension in different countries but also cardiovascular risk factors and quality of life.

Accordingly project 20/20 in LA proposing the reduction of arterial hypertension by 20% for the year 2020 is an added activity to the one proposed by the World Health Organization (WHO) named 25/25, that is to say to reduce by 25% the rate of arterial hypertension for the year 2025.

To support these objectives, the ISH Regional Advisory Group (RAG) for Central and South America has given support to these activities:

2008: Latin American Consensus on Hypertension in Paraguay.

2010: VIII Latin American Congress on Hypertension organized by LASH, held in Buenos Aires, Argentina. ISH support.

2011: Latin American Consensus in Hypertension, Diabetes and Metabolic Syndrome in Colombia.

2011: ISH Teaching Seminars in Colombia and Ecuador.

2012: Latin American Congress on Arterial Hypertension (LASH) associated with the IX Congresso do Departamento de Hipertensão Arterial da SBC and the IV MERCOSUR Symposium on Arterial Hypertension and the II Symposium Luso-Brasileiro on Hypertension.

2012: ISH Summer School in Argentina. 2013: Congress of the Latin American Society of Hypertension in Venezuela.

2014: Congress of the Latin American Society of Hypertension in Ecuador.

2014: Teaching Seminar in Ecuador. 2015: Congress of the Latin American Society of Hypertension in Brazil

2015: First Congress of the Central America and Caribbean Islands Society of Hypertension, held in Costa Rica

Finally, as suggested and supported by the ISH, the Central America and Caribbean Islands Society of Hypertension was created.

- **Agustin Ramirez**

REFERENCES

1. Murray CJL, Lopez AD, editors. The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Boston, Massachusetts: Harvard School of Public Health; 1996.
2. Murray CJ, Lopez AD. Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study. *Lancet* 1997; 349:1436–1442.].
3. Lopez-Jaramillo P, Casas JP, Bautista L, Serrano NC, Morillo CA. An integrated proposal to explain the epidemic of cardiovascular disease in a developing country. From socioeconomic factors to free radicals. *Cardiology* 2001; 96: 1–6.
4. Albalá C, Vio F, Kain J, Uauy R. Nutrition transition in Latin America. *Nutr Rev* 2001; 59: 170–176
5. Lopez-Jaramillo P, Lahera V, Lopez-Lopez J. Epidemic of cardiometabolic diseases: A Latin American point of view. *Therap Adv Cardiovas Dis* 2011; 5: 119-131.
6. World Health Organization. Preventing chronic diseases: a vital investment: WHO global report. Geneva: World Health Organization; 2005. Page 1-13. [Available from: http://www.who.int/chp/chronic_disease_report/en/]
7. Organización Panamericana de la Salud. Las Américas: una población creciente urbana que está envejeciendo. Washington: OPS; 2002. [Available from: http://www.paho.org/Spanish/DBI/MDS/Press1_SEA_2002.htm]
8. Organización Panamericana de la Salud. Salud en las Américas 2007. Washington: OPS; 2007. [Available on: <http://www.paho.org/hia/home.html>]
9. Lopez-Jaramillo P, Sanchez R, Diaz M, Cobos L, Bryce A, Parra-Carrillo JZ, et al, on behalf of the Latin America Expert Group. Latin America Consensus on Hypertension in Patients with Diabetes type 2 and Metabolic Syndrome. *J Hypertens* 2013; 31: 223-238.
10. Chow CK, Teo KK, Rangarajan S, Islam S, Gupta R, Avezum et al, PURE (Prospective Urban Rural Epidemiology) S study investigators. Prevalence, awareness, treatment, and control of hypertension in rural and urban communities in high-, middle-, and low-income countries. *JAMA* 2013; 310: 959-968.
11. Hernandez-Hernandez R, Silva H, Velasco M, Pellegrini F, Macchia A, Escobedo J, Vinueza R. Hypertension in seven Latin American cities. The cardiovascular risk factor multiple evaluation in Latin America (CARMELA) Study. *J Hypertens* 2010; 28: 24-34.
12. Schargrodsky H, Hernández-Hernández R, Champagne BM, Silva H, Vinueza R, Silva Ayçaguer LC, Touboul PJ et al for the Carmela study. Carmela: assessment of the CV risk in seven Latin American cities. *Am J Med* 2008; 121: 58 – 65.
13. Thomopoulos C, Parati G, Zanchetti A. Effects of blood pressure lowering on outcome incidence in hypertension. 1. Overview, meta-analyses and meta-regression analyses of randomized trials. *J Hypertens*. 2014; 32(12): 2285-2295.
14. Thomopoulos C, Parati G, Zanchetti A. Effects of blood pressure lowering on outcome incidence in hypertension: 4. Effects of various classes of antihypertensive drugs. Overview and meta-analyses. *Journal of Hypertension* 2015, 33: 195-211.
15. The Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). 2013 ESH/ESC Guidelines for the management of arterial hypertension. *J Hypertens* 2013; 31: 1281–1357.
16. Health System and Provider Costs for Prevention and Treatment of Cardiovascular and Related Conditions in Low and Middle-Income Countries: A Systematic Review.
17. Sanchez RA, Ayala M, Baglivo H, Velazquez C, Burlando G, Kohlmann O, Jimenez J, Lopez Jaramillo P, Brandao A, Valdes G, Alcocer L, Bendersky M, Ramirez AJ, Zanchetti A, on behalf of the Latin America Expert Group: Latin American guidelines on hypertension. *J Hypertens* 2009, 27: 905–922.

THE ISH GOES TO INDIA!



From left to right:

*Professor Andrew Boulton,
Manchester, UK*

Professor Rhian Touyz, Glasgow, UK

*Professor Anthony Heagerty,
Manchester, UK*

In early January 2016 our ISH President Rhian Touyz accepted an invitation on behalf of the Society to attend the 21st International Conference on Frontiers in Yoga Research and its Applications (INCOFYRA), held at the Yoga University in Bangalore (Swami Vivekananda Yoga Anusandhana Samsthana Deemed University).

As many of you will know, yoga has become part of everyday life for many individuals. It is multifaceted and embraces many techniques. The University in Bangalore is completely dedicated to understanding its benefits and this year's theme was to look in more depth at its possible role in the management of non-communicable diseases such as diabetes and hypertension.

The conference was opened by the Prime Minister of India, Narendra Modi. Our President, and Past President Tony Heagerty, were privileged to be sitting alongside him whilst he made his address. In his speech he emphasised the need to integrate Western medical approaches to non-communicable diseases with more traditional Eastern approaches such as Ayurveda, naturopathy, yoga unmani, siddha and homeopathy.

The meeting focused on approaches to diabetes, hypertension, cardiovascular diseases, psychiatric diseases and oncological problems. Whilst there, Drs Touyz and Heagerty visited laboratories on the university campus researching the cardiovascular and neurological effects of meditation and yoga to provide understanding of physiological changes which may benefit glucose intolerance and high blood pressure.

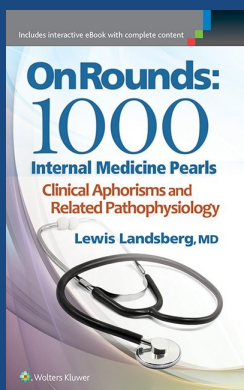
During their time they also met the Indian Minister of Health, Jagat Prakash Nadda, and a variety of academics and Indian dignitaries. Rhian and Tony presented alongside another prominent ISH Member, Professor Dorairaj Prabhakaran, International Development Member of Council and Executive Director of Initiative for Cardiovascular Health (ICHEALTH) who encouraged on-going research in the area.

It is to be hoped that further collaborative links will be established between the ISH and researchers interested in these fields, as well as extending the message about best practice with regard to hypertension detection and management.

-Anthony Heagerty

On Rounds – 1000 Internal Medicine Pearls

By Lewis Landsberg, Dean Emeritus, North Western University, Chicago, USA



Lewis Landsberg, well known to many of us, and Chairman of the Board of Management of the Journal of Hypertension for many years, has written a monograph listing aphorisms he has found useful in almost half a century of clinical experience in internal medicine (Wolters Kluwer; Philadelphia, 2016 pp 1-217). The aphorisms are a distillation of his interest in the clinical manifestations and the pathophysiology of disease. Clinical medicine is filled with uncertainty and pearls like these are nuggets of accumulated wisdom which frequently simplify complicated situations. Hence, they are useful both to doctors in training and to those in practice. The monograph also includes a few false pearls, i.e. statements that, although widely believed, are demonstrably false. I have read the book with great interest and recommend our members to do so as well.

-Lars H Lindholm, Editor



**PUBLIC
HEALTH
FOUNDATION
OF INDIA**



Certificate Course in Management of Hypertension (CCMH)

Cycle-I (July 2016 – April 2017)

Salient Features of the Course

1. 10 Modular Course
2. Renowned Faculty
3. Once-a-month session on weekend
4. Instructive Videos
5. Informative Case Studies
6. Interactive Group Activities

Eligibility Criteria

MD/DMB (Medicine/Internal Medicine/Family Medicine)
Or
MBBS with minimum 3 years of clinical experience

Registration Open*

Last date for enrolment: **15th June 2016**
Course starts on **24th July 2016**

**Course Fees
INR
10,000/-****

For more details visit www.ccmh.org.in

For Application Forms and Program Brochure, please contact:

Program Secretariat-CCMH
Public Health Foundation of India
Plot No. 47, Sector 44, Institutional Area, Gurgaon -122002, India
Tel: +91-124-4781400 Ext: 4514 Fax: 0124-4722871
Email: ccmh@phf.org, Web: www.ccmh.org.in, www.phf.org

Disclaimer: PHF, CCMH, ISH & BHS hereby declare that this jointly designed "Certificate Course in Management of Hypertension" is not a vocational medical qualification, under section 11(2) of the Indian Councils Act, 1909 (Act 102 of 1909) and that it is not a medical college or a university or an institution offering any course in accordance with the provisions of the Indian Medical Council Act/ University Grants Commission Act.

*Decision taken by PHF for selection and enrolment of participants will be final.

**Course fee to be paid in the form of Demand Draft (DD) for INR 10,000/- drawn in favour of Public Health Foundation of India, payable at New Delhi.



Supported by
educational grant from
**SUN
PHARMA**

Letter to the Editor: Sex and gender

The argument on sex and gender continues. Below, please find a letter from David Spence and a response from Katarina Hamberg and Susan Phillips. However, they all seem to argue that 'sex' and 'gender' interrelate.

-Lars H. Lindholm, Editor

Letter from David Spence to the Editor

Professor of Neurology and Pharmacology, Western University
Director, Stroke Prevention & Atherosclerosis Research Centre,
Robarts Research Institute, London, ON, Canada N6G 2V4

Katarina Hamberg and Susan Phillips in Hypertension News (December 15, 2015; Opus 43), unfairly characterized our Editorial on sex and gender (1) as oversimplifying the relationship between sex and gender by leaving out one line of the CIHR definition that they preferred to emphasize. However, the issues on which they focus were in fact discussed in the Editorial. The quotes below are part of that discussion.

As we said, sex and gender interact importantly. The most common error in the literature is referring exclusively to "gender" when it is sex differences that are being studied; this is what we emphasized.

- J. David Spence

"Given that sex and gender are different constructs, solely assessing one or the other cannot adequately account for variations in health [6]. Evidence that gender-related variables may help in explaining health-related sex differences includes the higher prevalence of cardiovascular diseases (CVD) in younger men than in women. The reason why men are at an increased risk may partly be explained by their gender-based propensity to engage in risk taking behaviors such as smoking or excessive alcohol consumption. It has also been observed that the incidence of acute coronary syndrome (ACS) in young adults, particularly women, is rising [7,8]. The increasing incidence of ACS in young adults may relate to changing family, social, and institutional roles and attitudes of men and women in the last decades [9,10]. Importantly, men and women may report gender-related characteristics traditionally attributed to the opposite sex. As such, the distribution of gender related characteristics within populations of men and women is likely to influence health differently than biological sex."

"For example, Ristvedt [15] and Krieger [13] aimed to highlight the differences and connections between gender and sex, and to stress the importance of considering both constructs in the context of health research. Both

researchers presented some health studies in which gender and sex are relevant as independent or synergistic determinants of studies outcomes, and Krieger stressed that "The relevance of gender relations and sex-linked biology to a given health outcome is an empirical question, not a philosophical principle; depending on the health outcome under study, both, neither, one, or the other may be relevant as sole, independent, or synergistic determinants".

1. Spence JD, Pilote L. Importance of sex and gender in atherosclerosis and cardiovascular disease. *Atherosclerosis*. 2015;241:208-210

Response to J. David Spence M.D.

Dr JD Spence is right when saying that he and L Pilote discussed the relationship between sex and gender in their article (1). The problem though, is that they approach 'sex' and 'gender' as dichotomous terms catching fundamentally different phenomena. For example, as seen in the second quotation in the letter above, Spence & Pilote underline that sex and gender are *independent or synergistic determinants of study outcomes*. Our point is that it is seldom, if ever, possible to see sex and gender as independent constructs. Instead, when trying to deconstruct to find a biological kernel, or a social essence, in a certain health outcome, one is left with several new chains of bio-social contexts and interaction.

To conclude, due to the current confusion about the use of 'sex' and 'gender', we recommend that researchers always explain what they mean by whatever term they choose. Even more important is to realize that 'sex' and 'gender' are neither interchangeable synonyms, nor can they be isolated from each other. Although it may be suitable to talk about sex differences in laboratory research, in clinical studies it is more realistic to see biology as entangled with social circumstances and use the term 'sex/gender'.

Last, but not least, we are very happy for the increasing interest in sex/gender analyses and the meaning of concepts used in such analyses.

-Katarina Hamberg and Susan Phillips

1. Spence JD, Pilote L. Importance of sex and gender in atherosclerosis and cardiovascular disease. *Atherosclerosis*. 2015;241:208-210.

A GLOBAL INTERACTIVE EVENT TO PROMOTE CV HEALTH

Uniting cardiovascular disease specialists with other disciplines to network, share knowledge and build innovative solutions for patients and populations

AN OUTSTANDING LINE UP OF WORLD LEADERS IN HEART HEALTH

130 sessions on cardiovascular health and cardiology practice including acute coronary syndromes, heart rhythm disorders, heart failure, mental health and public health professionals

BEST PRACTICE SHARING

An interactive programme designed to respond to the needs of professionals representing disciplines including cardiology, internal medicine, general practice, nursing and public health. In their everyday practice across different resource settings

GROUND BREAKING RESEARCH INTO CARDIOVASCULAR HEALTH

1,000 new abstracts on prevention, diagnosis and treatment alongside public health and health systems approaches for cardiovascular and related diseases

SPOTLIGHT ON LATIN AMERICA AND SESSIONS IN SPANISH

Exploring the spectrum of CVD in Latin America, epidemics of atrial fibrillation, rheumatic heart disease, obesity, tobacco as well as health systems

A PLATFORM TOWARDS THE 25X25 GOAL

A 25% reduction in premature CVD mortality and morbidity by 2025

www.worldcardiocongress.org



WORLD HEART FEDERATION*

World Congress of Cardiology & Cardiovascular Health

4-7 June 2016

Mexico City, Mexico

25x25. Shaping the Future of Global Heart Health



ISH Secretariat Contact:

c/o The Conference Collective

8 Waldegrave Road, Teddington, Middlesex

TW11 8GT. UK

Tel (UK): +44 20 8977 7997

Email: secretariat@ish-world.com

ISH Registered Charity No: 1122135



The Conference Collective

Delivering Excellence in Event Management

Have you paid your 2016 membership dues?

If not, please click here to pay now

ISH Corporate Members

The ISH would like to acknowledge the support of our Corporate Members - as follows.



Mitsubishi Tanabe Pharma Corporation

NOVARTIS

(Logo unavailable at the time of print)



The opinions expressed by contributors in this issue of Hypertension News do not necessarily reflect or represent the opinions or policy positions of ISH or its Council of Trustees.