Hypertension In The News

From: Wake Forest University School of Medicine
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October 2007
Volume 1 Issue 1

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Hypertension & Vascular Disease Elevated to Center

Hypertension & Vascular Disease has been elevated from a program to one of eleven institutional recognized research centers. It will now report directly to the Dean's Office. A welcome change that has been a long time coming according to Carlos Ferrario, MD, director of Hypertension & Vascular Disease.

"This will provide us with the means to expand our collaborations and our efforts at the medical school level." he said. "The designation will allow us to seek new approaches to expand our clinical areas."

The Hypertension & Vascular Research Center is an internationally recognized center for the investigation of vascular disease and hypertension; their activities include comprehensive care for hypertension and vascular disease, a mobile blood pressure clinic, early screening and management of peripheral artery disease.

Professor, Dr. Debra Diz awarded the 2007 Lewis K. Dahl Memorial Lecturer

Debra I. Diz, Ph.D., professor and section head of basic science research at the Hypertension & Vascular Research Center at Wake Forest University Baptist Medical Center has been named the 2007 Lewis K. Dahl Memorial Lecturer.

The lecture was presented on Friday, Sept. 28, at the American Heart Association's 61st Annual Council for High Blood Pressure Research Conference 2007 in Tucson, AZ.

The Lewis K. Dahl Memorial Lecture was established in 1988 by the Council for High Blood Pressure Research in honor of Dahl's pioneering work on the relations between salt, the kidney, genetics and hypertension. His work launched a major genetically based experimental model of hypertension, the Dahl salt-sensitive rat.

How You Can Help

https://www1.wfubmc.edu/onlinegift/default.aspx?id=28&fund=Hypertension+and+Vascular+Research+Center+Development+Fund

Graduate Student receives her Ph.D.

By JaNae Joyner

JaNae Joyner, a student in the Molecular Medicine graduate program, received her Ph.D. by successfully defending her dissertation on July 9, 2007. JaNae worked under the direction of mentor Dr. K. Bridget Brosnihan in the Hypertension and Vascular Research Center completing a project focusing on the renal actions of Ang-(1-7) and ACE2 during normal and hypertensive pregnancy. During her time in the Hypertension and Vascular Research Center, she received an American Heart Association Pre-doctoral fellowship and two Sigma-Xi grant-in-aids to support her research efforts. From her doctoral work, she has 4 publications in press, 2 in submission, and 2 in preparation and has presented her work in both oral and poster format at regional, national, and international meetings resulting in 22 abstracts. She has received numerous honors including the Merck New Investigator Award, APS Water and Electrolyte Travel Award, North American Society for the Study of Hypertension and Pregnancy New Investigator Award, and the APS Caroline tum Suden/Fracis A. Hellebrandt Professional Opportunity Award. She is also a contributing writer for the American Women in Science (AWIS) magazine. Upon graduation, she assumed a position as a project coordinator and scientific writer for the Consortium for Southeastern Hypertension Control (COSEHC).

"She has received numerous honors including…"

At the IASH final awards dinner, Dr. Michael Moore was recognized for his many contributions to COSEHC with the 2007 COSEHC Leadership Award, and Dr. Carlos M. Ferrario was awarded the 2007 COSEHC Lifetime Achievement Award. In their acceptance speeches, both Dr. Moore and Dr. Ferrario spoke of their personal pride in COSEHC's growth and achievements over the past 14 years.

Recognition Awards

* Bridget Brosnihan,Ph.D., Professor, became the new Co-Director of the Molecular Medicine Graduate Program
* Debra Diz, Ph.D., Professor, awarded the 2007 Lewis K. Dahl Memorial Lecturer
* Carlos Ferrario, M.D., Director, designated as the Barry M Brenner Endowed Leadership for 2007 by the American Society of Nephrology
* Carlos Ferrario, M.D., Director, named Editor-in-Chief of new international medical journal, January 2007. The first journal, *Therapeutic Advances in Cardiovascular Disease* launched on September 2nd at the European Society of Cardiology Annual Congress in Vienna
* JaNae Joyner, Graduate Student, awarded $250 for APS Water and Electrolyte Section oral presentation runner-up at FASEB 2007
* Karl Pendergrass, Graduate Student, is awarded the American Research Recognition Award for his abstract presentation on August 9-12, 2007

Travel Awards

* TanYa Gwathmey-Williams, PhD, Research Fellow, was awarded an APS/NIDDK Minority Travel Fellowship to attend 2007 APS Conference, Austin TX, August 9-12, 2007
* Lauren Anton, Graduate Student, awarded a travel award to attend the North American Society for the Study of Hypertension in Pregnancy Annual Meeting, San Diego, CA
* Lauren Anton, Graduate Student, Recipient of Merck Travel Award for AHA High Blood Pressure Meeting
* Jewell Jessup, Graduate Student, received a travel award from WFU Graduate School to attend the American Heart Association meeting in Tucson, AZ
* JaNae Joyner, Graduate Student, was awarded an APS Water and Electrolyte Homeostasis Section Travel Award
* JaNae Joyner, PhD, Recipient of Merck Travel Award for AHA High Blood Pressure Meeting
* LaTronya McCollum, Graduate Student, received a travel award from the American Heart Association and the WFU Graduate School of the Arts & Science Alumni Travel Award to attend the 6th Hypertension Summer School in Fort Collins, CO on August 1, 2007
* Karl Pendergrass, Graduate Student, awarded the APS/NIDDK minority Travel Fellowship Award to attend Experimental Biology 2007, April 28 – May 2, 2007.
* Karl Pendergrass, Graduate Student, awarded APS/NIDDK Minority Travel Fellowship to attend 2007 APS Conference, Austin, TX, August 9-12, 2007
* Aaron Trask, Graduate Students, received a travel award from the American Heart Association and the WFU Graduate School of the Arts & Science Alumni Travel Award to attend the 6th Hypertension Summer School in Fort Collins, CO on August 1, 2007

Grant Awards

* Debra Diz, Ph.D., Professor, was awarded a U.S.A. - Brazil Consortium Biomedical Science Exchange grant
* Patricia Gallagher, Ph.D., Assistant Professor, and Ann Tallant, Ph.D., Professor, were funded a cancer research grant
* Jasmina Varagic, M.D., Ph.D., Research Assistant Professor was awarded an AHA grant
* Jasmina Varagic, M.D., Ph.D., Research Assistant Professor, awarded an Intramural Research Support grant
* Aaron Trask, Graduate Student, was awarded an American Heart Association Pre-Doctoral Fellowship grant

Jyo Menon with mentors, Dr. Peg Gallagher and Dr. Ann Tallant

Lucy Robbins Fellowship

Jyotsana Menon, Graduate student of Physiology/Pharmacology was awarded the Lucy Robbins Fellowship. This award is given annually to a fourth-year graduate student conducting cancer-related research and is based on academic ability, including outstanding academic and research expertise, demonstrated leadership, outstanding interpersonal skills and a commitment to the ideals of excellence in academic research. This award is given in memory of Lucy Robbins, the late wife of Dr. Michael Robbins.

Faculty, Fellows, Graduate Students Presentations, Posters and Lectures at the AHA Council High Blood Pressure Research Meeting, Tucson AZ September 26-29, 2007

- Dr. Bridget Brosnihan "Intra-uterine Ang-(1-7) infusion attenuates PGE2 and PGF1α but not TXB2 in decidualized uterus of pseudopregnant rats"
- Dr. Mark Chappell "Distinct Processing Pathways for the Novel Peptide Angiotensin-(1-12) in the Serum and Kidney of the Hypertensive mREn2.Lewis Rat"
- Dr. Debra Diz "The Renin-Angiotensin System and Cardiovascular Control Mechanisms During Aging"
- Dr. Debra Diz "Ca2+-Sensing Receptor Signaling in Mouse Neuroblastoma Cells: A Model for the Perivascular Sensory Nerve CA2+- Sensing Receptor"
- Dr. Debra Diz "Evidence that Multipel Receptor Subtypes Mediate Angiotensin-(1-7) Dependent Vasodilation of the Rat Renal Artery"
- Dr. Carlos Ferrario "Novel Functions of ACE2"
- Dr. Carlos Ferrario "The Effect of Renin Inhibition on Cardiac Oxidative Stress and Remodeling in the Ren2 Transgenic Rat"
- Dr. Peg Gallagher "Angiotensin-(1-7) Inhibitis Angiogenesis by Reducing Endothelial Cell Growth"
- Dr. Ann Tallant "Angiotensin-(1-7) Upregulates the Mitogen-Activated Phosphatase DUSP1 in Vascular Smooth Muscle Cells"
- Dr. Jasmina Varagic "Decreased Expression of Cardiac ACE2 is Associated with Salt-Induced Cardiac Remodeling and Dysfunction"
- TanYa Gwathmey Williams "Nuclear Angiotensin II-Type 2 Receptors are Differentially Expressed in the Sheep Kidney"
- Liliya Yamaleyeva – Mark Chappell "Extrogen-Depleted mRen2.Lewis Rats Exhibit COX-2 Dependent Responses Distinct From Either the Intact Female or Male Strain"
- Lauren Anton "The Increased Shift of the AngII/Ang-(1-7) Balance in the Chorionic Villi from Preeclamptic Subjects is Mediated by the AT1 Receptor"
- Amy Arnold "Ang II and Ang-(1-7) in the Solitary Tract Nucleus Participate in the Anesthesia-Induced Elevation of Mean Arterial Pressure in Older Rats with Low Glial Angiotensinogen"
- Shea Gilliam Davis "Elevated Angiotensin I and Creatinine Excretion Precede the Increase in Proteinuria During Aging in Sprague-Dawley Rats"
- Jewell Jessup "Localization of the Novel Angiotensin Peptide, Proangiotensin-12[Ang-(1-12)], in the Heart and Kidney of Hypertensive and Normotensive Rats"
- JaNae Joyner "Angiotensin-(1-7) Increases Urine Volume Excretion Without Changing Plasma volume or Blood Pressure During Pregnancy"
- Exazevia Logan "The P13 Kinase Signal Transduction Pathway in Nucleus Tractus Solitarii Participates in Maintenance of Resting Arterial"
- Karl Pendergrass "Differential Expression of Neprilysin and Angiotensin-converting Enzyme 2 may Contribute to the Gender Disparity in the Hypertensive mRen2.Lewis strain"
- Aaron Trask "Major Role for Angiotensin Converting Enzyme 2 in Cardiac Angiotensin-(1-7) Production in the Congenic Hypertensive mRen2.lewis Rat"
- Aaron Trask "Angiotensin-(1-12) is a Precursor for the Processing of Cardiac Tissue Angiotensin Peptides"

Upcoming Graduate Students Lectures

- The Hypertension Journal Club is conducted on Wednesdays. Amy Arnold will be presenting on 10/10/07, LaTronya McCollum on 10/24/07, Jyotsana Menon on 11/7/07, Jewell Jessup on 11/28/07 and Karl Pendergrass on 12/12/07.
- Aaron Trask will be presenting at the Physiology & Pharmacolgy Annual Seminar on 11/12/07
- Amy Arnold, Jewell Jessup & Aaron Trask will be presenting at the Surgical Sciences Residents' & Fellows' Research Day on 11/15/07
- David Soto Pantoja will be presenting at the Molecular Genetics Seminar on 12/3/07.

We welcome the New Employees and wish them success in their career performance

Katie Busalacchi
Laboratory Technician II
Dr. Bridget Brosnihan's Lab

Katie is originally from Boston, Mass. She attended Roger Williams University in Rhode Island and earned a BS in Marine Biology and a BA in Environmental Chemistry. Formerly, Katie was in the PREP Program with Dr. Reid in Microbiology/Immunology. She worked at UNC Chapel Hill for 2 years in Cysticfibrosis. She is happy to be back home in Winston-Salem.

Katsunori (Nori) Isa, MD, PhD
Research Fellow
Advisor Dr. Debra Diz

Nori is originally from Okinawa, Japan. He received his MD and PhD in Neurology from the University of the Ryukyus, Japan. Formerly he was employed at Ryukyu University Hospital. Nori's research is to evaluate relationships between neurogenic control of blood pressure and brain renin-angiotensin system.

JaNae Joyner, PhD
Project Coordinator & Scientific Writer for COSEHC

JaNae received a BA in Biology from Mount Olive College, NC. She was a Graduate Student in Molecular Medicine at Wake Forest University School of Medicine and her laboratory department was Hypertension and Vascular Research Center. Upon graduation, she assumed a position as a project coordinator and scientific writer for the Consortium for Southeastern Hypertension Control (COSHEC).

Sarah Lindsey, PhD
Research Fellow
Advisor Dr. Mark Chappell

Sarah received her BA in Psychology from the University of Mississippi, MS in Biopsychology from University of Memphis, and PhD in Pharmacology from Louisiana State University Health Sciences Center. Her research addresses whether the direct effects of estrogen on the vasculature may contribute to gender differences in hypertension. Additional studies will address the expression of vascular estrogen receptors and the mechanism by which estrogen alters smooth muscle cell contractility.

Hossam Shaltout, PhD
Research Fellow
Advisors Dr. Mark Chappell &
Dr. Debra Diz.

Hossam earned his BS in Pharmacy and MS in Pharmacology from the University of Alexandria, Egypt. He earned his PhD in Pharmacology from the School of Medicine, East Carolina University, NC. Hossam's research is investigating the effects of antenatal exposure to glucocorticoids on renal function, blood pressure postnatally, brain renin angiotensin system, baroreceptor function, central neural mechanisms, and angiotensin converting enzyme (ACE) and (ACE2).

Recent Publications

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Hypertension and Vascular Research Center Clinical Activities

The Hypertension and Vascular Research Center is committed to the highest standards and leading edge comprehensive medical care of hypertension, peripheral vascular disease, and related comorbidities. The Center's goals are to educate the public about the significance of "Life Style" changes, adherence to medical treatment, and awareness of the consequences of uncontrolled hypertension; to provide the highest possible quality of patient care to those persons diagnosed with hypertension and vascular disease; to offer continuing education opportunities to physicians and other health care providers; to foster effective community outreach programs to promote wellness and public awareness about this prevalent health problem; and to conduct intensive basic and clinical research into the causes and consequences of hypertension. Clinical research remains a fundamental component of the Hypertension and Vascular Research Center. Since 1999, the Center's funding for clinical research activities has exceeded $5,500,500. As North Carolina's only Center specializing in the translation of basic science and clinical research into clinical practice, patients of the Center have access to expertise in the diagnosis and comprehensive medical therapy of a large variety of the causes of hypertension with particular reference to the importance of the kidney as well as vascular disease and premature atherosclerosis. State of the art diagnostic tools for measurement of the hemodynamic characteristics and functional alterations of the heart and vascular system are available on site in the clinic as part of the center's non-Invasive vascular laboratory. Our physicians, the only certified Hypertension Specialists by the International Society of Hypertension/World Health Organization, practice comprehensive management of cardiovascular risk factors predisposing individuals to hypertension, diabetes, high cholesterol, and obesity.

To Schedule an Appointment:
or
For further information:
Patient Scheduling Coordinator, 336-716-9423

Hypertension & Vascular Research Center Clinical Studies

By Dr. Ronald Smith

The Hypertension and Vascular Research Center is completing two monumental clinical studies of importance to the world's hypertensive patients and the physicians who are responsible for their treatment. For the last seven years this international, multicenter study, the ONTARGET/TRANSCEND study, has been testing the theory of significant suppression of the rennin-angiotensin system, the RAS, with either an angeiotensin receptor blocker (ARB), and angiotensin converting enzyme inhibitor (ACEI), or a combination of both. These patients all had significant damage to the brain, kidneys, heart, or blood vessels, and/or diabetes prior to entrance into the study. Some 35,000 hypertensive patients who were older than 55 years will complete the trial this December, 2007. Already published is the good news of a significant reduction in the frequency of heart failure in this population. The study results will

Clinical Studies (con't)

be presented at the American College of Cardiology 57th Annual Scientific Session in March 2008. And it will undoubtedly receive world wide attention by the news media.

The center is also completing a five year study, the ACCOMPLISH trial, testing the theory of which class agent, a diuretic or a calcium channel blocker, best assists the ACEI class agents in protecting our vital organs and delays death. This five year study has already set a record for the best control of blood pressure as the average reading in the study is below 130/80 mmHg. This had not been achieved in large clinical trials previously.

Ongoing are trials evaluating the kidney protective effects of statins. Already well established is the effect of statins on lowering serum cholesterol, reducing strokes and heart attacks. The addition of kidney protection by one of the statins, as occurs with ACEI's and ARB's, will be a welcomed adjunct to our therapy to eliminate the need for dialysis.

And yet another renal protection study is ongoing looking at a companion medication to ARB's and ACEI's. This is sulodexide, a compound with minimal side effects that has been utilized in Europe for over 30 years. This compound affects the passage of protein through the kidney filtering apparatus, thereby reducing the amount of protein lost by the kidney.

Most everyone is now aware of stem cells, the building blocks for all of our body's tissue. A new study recently started will evaluate the ability of an ARB to increase the production of specific stem cells in patients with significant large vessel disease commonly know as PAD.

The clinical research activity is devoted to the exploration of new therapies and procedures to improve the lives of the millions of Americans afflicted with hypertension.

The Consortium for Southeastern Hypertension Control

The Consortium for Southeastern Hypertension Control (COSEHC) is a nonprofit organization created in 1992 under the leadership of Carlos M. Ferrario, M.D, Wake Forest University School of Medicine. Together with a concerned group of Southeastern scientists, Ferrario et al, launched the organization to improve the disproportionate hypertension-related morbidity and mortality throughout the region.

The COSEHC Mission

To reduce morbidity and mortality from hypertension-related conditions (heart attack and disease, stroke, and kidney failure) in the southeastern United States through the improvement in the control of cardiovascular risk factors. COSEHC carries out its mission through clinical research, professional education, community outreach, developing and implementing evidence based best practices, development of magnet cardiovascular centers of excellence, and utilization of a clinical database to determine professional continuing educational programs, conduct research, and improve clinical care through best practices and benchmarking. Cont'd page 11

COSEHC (con't)

Goals and Strategies

- Research and the translation of research findings and therapeutic advances in the field of hypertension, vascular disease, and diabetes to the population.
- The development of magnet clinical centers in the Southeast where medical and therapeutic advances are translated into best practices to provide state-of-the-art treatment of cardiovascular disease.
- Enhance knowledge of providers by exposure to internationally renowned physician experts who pioneer interventions for the control of hypertension and associated cardiovascular global risk factors.
- Improve the management of hypertension and cardiovascular diseases through education, research, quality improvement, and advocacy.

Cardiovascular Centers of Excellence

To enhance the management of hypertension and cardiovascular disease in the southeastern United States, COSEHC has developed a partnership with academic centers and community practitioners as a direct intervention to coordinate professional education, research, and to implement quality improvement evidence-based strategies. These practices, called Cardiovascular Centers of Excellence in-turn create partnerships with local health care providers and community-based healthcare organizations, such as public health and employers to develop programs that focus on treatment, clinical research and prevention of hypertension-related cardiovascular disease in their local community. Physicians participating in this network have access to groundbreaking approaches to treating hypertension and cardiovascular disease leading to opportunities for improved access to healthcare and better management of cardiovascular disease in the South.

New Journal - *Therapeutic Advances in Cardiovascular Disease*

By Jewell Jessup

Dr. Carlos M. Ferrario, director of the Hypertension and Vascular Research Center along with SAGE Publications, the world's fifth largest journals publisher, delightfully launched *Therapeutic Advances in Cardiovascular Disease* on September 2, 2007 at the European Society of Cardiology Annual Congress in Vienna, Austria. Dr. Carlos Ferrario serves as the Editor-in-Chief of *Therapeutic Advances in Cardiovascular Disease,* which is the first in a series of international journals documenting the latest in therapeutic advancements. Dr. Ferrario states that, "Launching a new journal in an already crowded field is a daunting task, but my colleagues at SAGE and the compilation of outstanding Associate Editors and an internationally-recognized Editorial Board are excited and confident that there is a need for the timely analysis of new therapies in cardiovascular disease." The inaugural issue launched in September addresses therapeutic approaches to the cardio-metabolic syndrome. In addition to the highest quality of peer-reviewed original research articles, future issues will feature scholarly comment and perspectives on pioneering efforts and innovative studies in the field of cardiovascular diseases, pharmacology and medicine. as well as state-of-the art reviews encompassing all cardiovascular related conditions such as arteriosclerosis, cardiomyopathies, coronary artery disease, diabetes, heart failure, hypertension, obesity, and stroke. As Editor-in Chief, Dr. Ferrario is responsible for reviewing high quality work from the international community of cardiovascular scholars in Europe, Asia, Australia, and the Americas. Therapeutic Advances in Cardiovascular Disease will be published bi-monthly. Dr. Ferrario invites the global community of clinicians and researchers to visit http://tac.sagepub.com for free access to the first issue. Questions and comments regarding the journal may be sent to Carlos.Ferrario@sagepub.co.uk

Summer Students 2007

The Hypertension and Vascular Research Center host summer students to assist them with their educational goals. Summer students for 2007 are Sumeet Banker; 2nd year Medical Student at Wake Forest University School of Medicine, Steven Newton; 2nd year Medical Student at Wake Forest University School of Medicine, and Holland Diz; rising senior at Randolph-Macon Woman's College.

2007 COSEHC ANNUAL MEETING HIGHLIGHTS

By Debbie Wirth-Simmons

In a newly expanded meeting, the Consortium for Southeastern Hypertension Control held its XIVth Annual National Scientific Sessions in conjunction with the XVIIth Scientific Sessions of the Inter-American Society of Hypertension in Miami, Florida May 6-10, 2007 at the beautiful Loews Miami South Beach hotel. Cont'd next column

COSEHC Highlights (con't)

Carlos M. Ferrario, M.D., and Leopoldo Raij, M.D., co-chaired the Joint Sessions; and the COSEHC Program Sessions were co-chaired by Robert Carey, M.D., and Rafael Sequeira, M.D.

The meeting provided a forum in which scientific work related to hypertension, atherosclerosis, the metabolic syndrome, and obesity was presented. The program afforded participants opportunities to present both basic and clinically related work in the form of posters, oral presentations, and invited lectures and symposia.
Special clinical symposia focused on updating clinical guidelines for management of global risk factors, epidemiology of hypertension in Latin-American countries, new insights into the role of hypertension in diabetes, dyslipidemia, the metabolic syndrome, and obesity. In addition, complementary sessions addressed new aspects of clinical hypertension research on genetics, role of prostanoids in the inflammatory processes associated with hypertensive vascular disease and atherosclerosis, as well as newer insights into the role of the renin angiotensin system in the pathogenesis of hypertension and vascular disease. Additional featured research symposia included the emerging role of renin inhibitors in the management of hypertension, renal disease, and heart failure. Sessions in the epidemiology and prevention of hypertension related target organ damage provided an update on aspects of the problem throughout the Americas.

Together, COSEHC and IASH provided an overall tone of science that expanded along the lines of clinical approaches to management of global cardiovascular risk factors, population studies, and prevention, and facilitated collaboration between research experts from the fields of hypertension and vascular disease and from related areas such as obesity, diabetes, and the metabolic syndrome.

Wake Forest University Baptist MEDICAL CENTER

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SAVE the DATE!!!!!

COSEHC 2008 ANNUAL Scientific Sessions

Hyatt Regency on the Inner Harbor

Baltimore, Maryland

September 24-27, 2008