Honoring Dr Ernesto Schiffrin with the 2021 ISH Volhard Award

RHIAN M TOUYZ

BHF Glasgow Cardiovascular Research Centre
University of Glasgow,
Glasgow, UK.

DOI:10.30824/2106-11

The Franz Volhard award of the International Society of Hypertension (ISH) was created in 1972 to honour the outstanding and innovative contributions of Prof Volhard in the field of hypertension and renal pathophysiology. Prof Volhard was a visionary researcher - in the early 1900s, he introduced the concept of pale (renal) hypertension due to a renal-derived pressor substance, later to be identified as the renin angiotensin system, and red (essential) hypertension due to hereditary factors, age, obesity, and severe alcoholism. He emphasized the importance of a rise in cardiac output and a premature reduction of vascular distensibility in the pathogenesis of red hypertension. In recognition of these discoveries, amongst many others, Franz Volhard was described as 'a genius scientist, outstanding physician and brilliant speaker'¹.

It is therefore most fitting that the ISH 2021 Volhard award was bestowed to Professor Ernesto Schiffrin at the virtual ESH/ISH scientific meeting in April 2021. Dr Schiffrin epitomises everything that the award represents - an outstanding physician-scientist who has made major contributions that have advanced the understanding of the pathophysiology of hypertension through seminal discoveries on vasoactive peptides, inflammation and vascular remodeling in hypertension²⁻⁶. Dr Schiffrin is Distinguished James McGill Professor and Vice-Chair, Department of Medicine, McGill University, Physician-in-Chief, Department of Medicine, Jewish General Hospital, and Director of the Hypertension and Vascular Research Unit, Lady Davis Institute for Medical Research. In recognition of his accomplishments and contributions he was

appointed a Member of the Order of Canada, was the recipient of the Bjorn Folkow Award of the European Society of Hypertension and awardee of the Excellence Award for Research in Hypertension of the American Heart Association.

The beauty of Dr Schiffrin's research is that it truly spans discovery science to clinical studies. His earlier work focused on angiotensin and endothelin signaling and molecular pathways leading to generation of oxidative stress in hypertension. He discovered the role of atrial natriuretic peptide in the regulation of aldosterone secretion, the importance of peroxisome proliferator activated receptors (in vascular inflammation and injury and he was amongst the first to study remodelling of resistance arteries in experimental and human hypertension. His work on endothelin-1 clearly defined a role for the endothelin system in hypertension and target organ damage. Together with these discoveries and unique mouse models of endothelin-1-induced hypertension that his group generated, his work has translated to the clinic, where he is a leading investigator in a clinical trial on effects of a novel endothelin antagonist in resistant hypertension. In addition, Dr. Schiffrin is a world leader in the field of inflammation and hypertension. His group was the first to describe an inflammatory response in vessels in hypertension and more recently he identified gamma/delta T lymphocytes as being critically involved in experimental and human hypertension. Among his most impactful contributions are his clinical studies. In particular in the 1980s, Dr Schiffrin reported the utility of natriuretic peptides as a biomarker of heart failure in patients, a concept that is well accepted today. He also reported for the

first time the cardiovascular benefits of associating an angiotensin receptor blocker (valsartan) and a neprilysin inhibitor (sacubitril). He has been at the forefront in phenotyping small vessels in human hypertension and demonstrated differential beneficial effects of some antihypertensive agents. More recently Dr. Schiffrin has led studies of microRNAs in the circulation and small arteries in humans with hypertension, diabetes mellitus and chronic kidney disease using Next Generation Sequencing to understand the potential role of microRNAs in pathophysiology and as biomarkers and therapeutic targets in hypertension.

Dr. Schiffrin has played a major leadership role as President/Chair in the International Society of Hypertension, the Canadian Society of Hypertension and later Hypertension Canada, and the Council on Hypertension (American Heart Association). He has contributed to important collective literary works including major review articles and has edited numerous books. He was associate editor of highest impact hypertension journals including Hypertension, and since 2016 he has held the position of Editor-in-Chief of the American Journal of Hypertension. Beyond his research and academic activities, Dr Schiffrin is an outstanding teacher, mentor and supervisor as evidenced by his many trainees who have gone on to successful independent academic or clinical careers.

Dr Schiffrin's dedication to innovative and impactful hypertension research, his commitment to advancing knowledge that will improve the lives of patients with hypertension and his successes in training future hypertension researchers clearly honour the memory of Franz Volhard. Dr Schiffrin is an outstanding hypertension researcher and the ISH is proud to name him as the 2021 Franz Volhard Awardee.

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Rhian M. Touyz - rhian.touyz@glasgow.ac.uk