

Blood Pressure Control Study

Study of the European Society of Hypertension on Blood Pressure Control in ESH Excellence Centres

BP-CON ESH

dedicated to Professor Alberto Zanchetti

Scientific Steering Committee:

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HYPERTENSION SPECIALIST NEWS

To maintain your Hypertension Specialist status you must be an ESH Member!

New 2018 European Guidelines

The new "2018 European Society of Cardiology (ESC) and European Society of Hypertension (ESH) Guidelines for the management of arterial hypertension" are available for you here.

The development of the guidelines was led by Prof. Bryan Williams (ESC Chairperson), London UK, and Prof. Giuseppe Mancia (ESH Chairperson), Milan Italy, as lead authors.

[Read More >](#)

Blood Pressure Control Study

Study of the European Society of Hypertension on Blood Pressure Control in ESH Excellence Centres, dedicated to Professor Alberto Zanchetti.

The most important task of the European Society of Hypertension is to improve blood pressure treatment and increase blood pressure control, thus decreasing cardiovascular risk, premature cardiovascular and renal morbidity and mortality, with in addition a reduction of health-care costs.

[Read More >](#)

2. Aims

Main aims

1. To determine the overall rate of BP control by treatment based on all participating centres throughout Europe.
2. To determine the rate of BP control per country and thus detect their possible differences
3. To determine the factors associated with BP control/lack of control based on demographic geographical, socio-economic, clinical and other factors.
4. To determine the absolute BP values of controlled and uncontrolled patients globally and per country.

3. Subjects and methods

Subjects

Data and BP values of patients which are treated **in regular everyday clinical work** will be analyzed.

In everyday clinic work it is impossible to include all of patients (or majority) who will come to the visit on particular day.

Thus, **during the enrollment period first 4 consecutive patients** who will come to the visit on particular day and fulfill inclusion/exclusion criteria will be enrolled*.

If patient would not fulfill inclusion/exclusion criteria, next consecutive patient on the list for examination that day will be included.

*– 6 months for enrollment of at least 100 patients

3. Subjects and methods

Subjects

Inclusion criteria: - age ≥ 18 ;
- signed informed consent

Exclusion criteria: - pregnancy
- terminal malignant disease (life expectancy < 6 months)
- limb amputation
- dementia
- not signed informed consent

3. Subjects and methods

Subjects

Enrollment

1. In those Excellent Centers **where unattended BP measurements would not be feasible** only office BP measurements will be performed.

In those centers there is no need for randomization of BP measurement methods.

2. In Excellent Centers **with capability to perform unattended BP measurements in addition to office BP measurements** patients the **sequenced** of the two different methods will **randomly assigned**.*

In all patients who will be enrolled at a particular day BP will be measured using predefined BP measurement's technique for this day.

* The physician/nurse flip a coin and start with either method.



Feasibility and participating centers

Athens meeting 2018

Excellence centre	Country	Head	Ethical approval	At least 100 patients	Casual BP	Unattended	ABPM
90	31		80 (98%)	76 (94%)	80 (98%)	62 (76%)	78 (96%)

Aristotle Uni of Thessaloniki	Greece	Pantelis Zebekakis	12/16	63	6	yes	yes	yes	no	yes
Athens Prevention Centre	Greece	Emmanuel Andreadis				yes	yes	yes	yes	yes
Attikon Uni Hospital Athens	Greece	Helen Triantafyllidi				yes	yes	yes	no	yes
Helena Venizelou Hosp	Greece	Thomas Makris				yes	yes	yes	yes*	yes
Hippokraton Hosp. Athens	Greece	Costas Tsioufis				yes	yes	yes	yes	yes
Hyp Centre STRIDE-7, Athens	Greece	George Stergiou				yes	yes	yes	yes	yes
		Dimitros								
Laiko Uni Hosp	Greece	Papadopoulus				yes	yes	yes	no	yes
Thessaloniki	Greece	Vasiolos Kostis								
University Hospital of Heraklion	Greece	Ioannis Papadakis				yes	yes	yes	no	yes
Univ Hosp of Ioannia	Greece	Rigas Kalaitzidis								
Alexandra Hospital Athens	Greece	Efstathios Manios				yes	yes	yes	yes	yes

4 centers have not confirmed



In 2019 all confirmed

Feasibility and participating centers

Athens meeting 2018

Excellence centre	Country	Head	Ethical approval	At least 100 patients	Casual BP	Unattended	ABPM
90	31		80 (98%)	76 (94%)	80 (98%)	62 (76%)	78 (96%)

Early starters
(November 2018)
– pilot study



Croatia
Germany
Greece
Italy
Romania
Serbia
Slovenia

Athens meeting 2019

Current status – pilot study (December 2018 – March 2019)

Institution	Centers	Physician	Number of Patients
Hypertension Unit, 1st Department of Cardiology, University of Athens, Hippokration Hospital, Athens	Greece	Maria Kouremeti Eleni Manta Niki Kakouri	104
Hypertension Unit, Department of Internal Medicine, University Hospital of Heraklion	Greece	Ioannis Papadakis	81
S. Luca Hospital, Istituto Auxologico Italiano, Milano	Italy	Martino Pengo	69
Hypertension Unit, 2nd Department of Cardiology, Medical School University of Athens, ATTIKON Hospital, Athens	Greece	Efthymia Varytimiadi	54
Hypertension Center, Department of Nephrology, University Hospital of Ioannina	Greece	Rigas Kalaitzidis	45
Ambulatorio Ipertensione, Ospedale Niguarda, Dip. De Gasperis e Università di Milano Bicocca, Milano	Italy	Alessandro Maloberti	33
Center for Hypertension, University of Zagreb, Zagreb	Croatia	Tamara Knezevic Sandra Karanovic Zivka Dika Ana Jelakovic	57
Cardiology Dept. of Heraklion University Hospital, Heraklion	Greece	Maria Marketou	30
Centre for Hypertension of the Clinical Centre of Novi Sad	Serbia	Nenad Radivojevic Vesna Stojanov	27
Hypertension Division of the Third Department of Cardiology, Aristotle University of Thessaloniki, Papageorgiou General Hospital, Thessaloniki	Greece	Eugenia Gkaliagkousi Areti Triantafyllou	25
Hypertension Clinic, University Hospital of Athens	Greece	Dimitrios Papadopoulos	21
Hypertension Clinic, Cardiology Department, Asklepeion Hospital, Athens	Greece	Manolis Kallistratos	19
Hypertension Clinic, Department of Cardiology, KAT General Hospital, Athens	Greece	Charalampos Grassos	13
Hypertension-24h ABPM Center, Papageorgiou Hospital, Nea Efkarpia	Greece	Christina Antza	3
	14	18	608

Athens meeting 2019 - Centers ready to start

ITALY (13)	Ambulatorio Ipertensione, Ospedale Niguarda, Dip. De Gasperis e Università di Milano Bicocca, Milano	Prof. Giannattasio EHS [®] , Cristina	cristina.giannattasio@unimib.it cristina.giannattasio@ospedaleniguarda.it	
	Centre for the Diagnosis and Treatment of Arterial Hypertension, Division of Cardiology, II Faculty of Medicine, University of Rome "La Sapienza", Rome	Prof. Volpe, EHS [®] , Massimo	massimo.volpe@uniroma1.it centro.ipertensione@ospedalesantandrea.it	
	Centro Ipertension e Malattie Cardiovascolar, Ancona	Prof. Sarzani, Riccardo	sarzani@univpm.it	
	Centro per lo Studio e la Cura della Ipertensione Arteriosa IRCCS AOU San Martino, Genova	Prof. Pontremoli, EHS [®] , Roberto	roberto.pontremoli@unige.it	
	Centro per lo Studio e la Cura dell'Ipertensione Arteriosa, University of Bologna, Bologna	Prof. Borghi, EHS [®] , Claudio	claudio.borghi@unibo.it	
	Centro Studi Ipertensione e Malattie Vascolari, Istituto Clinico Universitario, Verano Brianza	Prof. Mancina, EHS [®] , Giuseppe	giuseppe.mancina@unimib.it	
LITHUANIA (1)	Kaunas Hypertension Excellence Centre, Kaunas	Dr. Filippo Scalise		
POLAND (5)	1st Cardiac and Hypertension Department Jagiellonian University Collegium Medicum, Krakow	Prof. Slapikas, Rimvydas	rimvydas.slapikas@kmuk.lt	
	Department of Hypertension, Institute of Cardiology, Krakow	Dr. Czarnecka, EHS [®] , Danuta	dczarnecka@su.krakow.pl	
PORTUGAL (1)	Department of Hypertension, Institute of Cardiology, Coimbra	In total 28 centers from 15 more countries		
	Unidade de Hipertensão Arterial e Risco Cardiovascular do Hospital Pedro Hispano, Matosinhos	Prof. Polonia, Jorge	jjpolonia@gmail.com	
ROMANIA (1)	Department of Cardiology and Internal Medicine, Emergency Clinical Hospital of Bucharest, Bucharest	Dr. Silva, José	jasilva.54@gmail.com	
SERBIA	Clinic for Internal Disease InterMedica, Nis	Dr. Dorobantu, EHS [®] , Maria	maria.dorobantu@gmail.com	
SLOVAK REPUBLIC (1)	Slovak National Centre of Hypertension, Department of Cardiology, National Institute of Cardiovascular Diseases, Bratislava	Prof. Lovic, EHS [®] , Dragan	draganl1@sbb.rs	
SLOVENIA (1)	University Medical Centre Ljubljana, Department of Hypertension, Dr. Peter Drzaj Hospital, Ljubljana	Dr. Filipova, EHS [®] , Slavomira	filipova@nusch.sk	
SPAIN (6)	Hypertension Unit-Hospital del Mar, Barcelona	Dr. Kultétyová, Dana	dana.skultetyova@nusch.sk	
	Pediatric Nephrology Clinic, Department of Pediatrics, Concorcio Hospital General Universitario, University of Valencia, Valencia	Dr. Brguljan, Jana	jana.brguljan-hitij@guest.arnes.si	
	Unidad de Hipertensión, Hospital Infanta Cristina, Badajoz	Dr. Oliveras Serrano, EHS [®] , Anna	aoliveras@hospitaldelmar.cat	
UNITED KINGDOM (6)	BHF Glasgow Cardiovascular Research Centre, University of Glasgow, Glasgow	Prof. Lurbe, Empar	empar.lurbe@uv.es	
	Leicester Hypertension Service, Leicester Royal Infirmary, Leicester	Prof. Robles Perez-Monteoliva, EHS [®] , Nicolas Roberto	nrrobles@yahoo.es	
		Prof. Dominiczak, EHS [®] , Anna	anna.dominiczak@glasgow.ac.uk	WILL NOT PARTICIPATE IN THE STUDY
		Prof. Williams, Bryan	bryan.williams@ucl.ac.uk	

Athens meeting 2019 – still considering or waiting ethical approval

COUNTRY	EXCELLENCE CENTRE	HEAD OF EXCELLENCE CENTRE
ALBANIA (1)	Service of Internal Medicine and Hypertension, UHC Mother Teresa, Tirana	Dr. Tase, Mihal
ARMENIA (1)	Center of Preventive Cardiology, Yerevan	Dr. Zelveian, Parounak
AUSTRIA (2)	Cardiology Department Klinikum Wels-Frieskirchen, Wels Univ. Klinikum LKH/Cardiology, Graz	Dr. Eber, Bernd Christian Prof. Zweiker, Robert
BELGIUM (5)	Centre Universitaire d'approche diagnostique et thérapeutique de l'hypertension artérielle CHU de Liège, Liège Sart Tilman Department of Nephrology and Hypertension, Universitair Ziekenhuis Brussels Hypertension Clinic Erasme Hospital, Brussels Hypertension Clinic, Cliniques Universitaires Saint-Luc (UCL), Brussels	Prof. Krzesinski, Jean-Marie Dr. Van der Niepen, Patricia Prof. van de Borne, EHS [®] , Philippe Prof. Persu, EHS [®] , Alexandre
CZECH REPUBLIC (4)	Center for Arterial Hypertension and Vascular Health, Charles University Medical School and University Hospital, Pilsen Center for Hypertension, Charles University, Prague Institute for Clinical and Experimental Medicine (IKEM) and Thomayer Hospital, Prague	Prof. Filipovský EHS [®] , Jan Prof. Widimsky Jr., Jiri Prof. Cifkova, EHS [®] , Renata
DENMARK (1)	Hypertension Clinic, Holbaek University Hospital, Holbaek	Prof. Olsen, EHS [®] , Michael
FRANCE (6)	Hypertension Unit, Hospital Europeen Georges Pompidou, Paris Service de Cardiologie, Hospital de la Croix-Rousse, Hospices Civils de Lyon, Lyon Tours University Hospital Hypertension Center, Tours UF Hypertension et Athérombose Service de Cardiologie - Pôle Thorax et Vaisseaux CHU Michallon, Grenoble Unité Hypertension Artérielle, University Hospital of Bordeaux, Bordeaux	Prof. Azizi, EHS [®] , Michel Dr. Lantelme, EHS [®] , Pierre Dr. Halimi, EHS [®] , Jean-Michel Dr. Ormezzano, Olivier Dr. Gosse, EHS [®] , Philippe
GERMANY (6)	Hypertension Center Munich, Munich Hypertoniezentrum Marburg - Klinik für Inner Medizin und Nephrologie, Marburg Universitätskliniken des Saarlandes, Homburg/Saar	Prof. Middeke, Martin Dr Hoyer, EHS [®] , Joachim Dr. Böhm, Michael
HUNGARY (4)	First Department of Internal Medicine, Medical and Health Science Centre, University of Debrecen, Debrecen Jósa András Teaching Hospital, Nyíregyháza St. Imre Teaching Hospital, Budapest	Dr. Pall, Dénes Dr. Szegedi, János Prof. Farsang, Csaba
ITALY (13)	Centre of Prevention and Treatment of Arterial Hypertension and Cardiovascular Risk Factors, Brescia Clinica Medica Ospedale San Gerardo, Monza Excellence Centre of Hypertension, Department of Medical Sciences, University of Torino, Torino Hypertension Centre and Internal Medicine Unit, Santa Maria della Misericordia General Hospital, Rovigo Napoli Hypertension Excellence Centre, Federico II Clinic Research Center for Hypertension and Related Conditions, Napoli Regional Centre of Hypertension and Hydroelectrolytic Metabolism of Reggio Calabria, Reggio Calabria	Prof. Agabiti Rosei, EHS [®] , Enrico Prof. Grassi, EHS [®] , Giudo Prof. Veglio, EHS [®] , Franco Prof. Mazza, Alberto Prof. De Luca, Nicola Prof. Strazzullo, Pasquale Prof. Trimarco, EHS [®] , Bruno Dr. Mallamaci, Francesca

Athens meeting 2019 – still considering or waiting ethical approval

LATVIA (1)	Latvian Centre of Cardiology, Paulus Stadins Clinical University Hospital, Riga	Dr. Erglis, Andrejs
NETHERLANDS (2)	Department of Medicine, Radboud University of Nijmegen Medical Center, Nijmegen	Dr. Deinum, EHS [®] , Jacob
	University Hospital Maastricht, Maastricht	Prof. De Leeuw, EHS [®] , Peter
POLAND (5)		
	Department of Internal Medicine, Hypertension and Vascular Diseases, Warsaw Medical University, Warsaw	Dr. Gaciong, Zbigniew
	Department of Nephrology, Hypertension and Internal Diseases, A. Jurasz University Hospital, Bydgoszcz	Prof. Manitius, Jacek
	Hypertension Unit, Department of Internal Medicine, Gdansk University Hospital, Gdansk	Prof. Narkiewicz, EHS [®] , Krzysztof
PORTUGAL (1)	Centro Hospitalar do Alto Ave. Minho University, Guimaraes	Prof. Cotter, EHS [®] , Jorge
		Prof. Boytsov, Sergey
	Hospital Clinico, University of Valencia, Valencia	Prof. Redon, EHS [®] , Josep
	Reina Sofia University Hospital, Cordoba	Dr. Santamaría, Rafael
	Hospital Clinico, University of Barcelona	Dr. Cristina Sierra
		Prof. Kahan, EHS [®] , Thomas
		Prof. Bochud, Murielle
		Prof. Sudano, Isabella
TURKEY (1)	Istanbul University Cerrahpaşa School of Medicine, Istanbul	Prof. Erdine, EHS [®] , Serap
UKRAINE (1)	National Scientific Center "The M.D. Strazhesko Institute of Cardiology", Kyiv	Dr. Sironko, EHS [®] , Yuriv
UNITED KINGDOM (6)	Blood Pressure Unit & Centre for Microcirculatory Research, London	
	Brighton & Sussex University Hospital NHS Trust, Brighton	
	The Pearl-Rose Clinic (Hypertension & Cardiovascular Risk), Hammersmith	
	Williamo Harvey Research Institute, Department of Clinical Pharmacology, Wesfield College, St. Bartholomew's Royal London School of Medicine & Dentistry	

In total 49 centers from 12 more countries

Optimistic view - In total 78 centers
plus 14 already started

92 centers from 28 countries

Pesimistic view – 29 centers ready to start
plus 14 already started

43 centers from 16 countries

SECURITY CHECKS

1. Security of the electronic data transfer?

As certified ISO 27001 and 9001 company (Agentius) have all organisational measurements implemented according to certificate requirements.

2. Localization of the server?

Datacenter A: Selska cesta 93, 10000, Zagreb, Croatia

Datacenter B: Ul. Savica I 133, 10000, Zagreb, Croatia

3. Access to the pseudonomized personal patient data?

Access to the pseudonomized personal patient data is available only to administrators:

- Bojan Jelakovic - president of Croatian Society of Hypertension
- Marko Krmek - Agentius, technical support

Data access is available using username and password.

4. Restriction of data access?

Access to data is approved only to administrators of the project.

Administrators of the project have been named by Croatian Society of Hypertension:

- Bojan Jelakovic - president of Croatian Society of Hypertension
- Marko Krmek - Agentius, technical support

Data access is available using username and password.

5. Duration of data storage until deletion?

All data will be stored for 10 years from the beginning of the project.

6. Generation of the patient-codes, e.g. only consecutive numbers ?

- Code will be entered by the participating physician:
 - First two digits will be given after alphabetic order of country
 - Second two digits will be given after alphabetic order of center in country
 - Next digits are given to participating physician
 - Last digits are given to participating patient

Future plans and steps

Blood Pressure Control in ESH Excellence Centres

BP-CON-ESH

SUBSTUDY ON THE ROLE OF OUT OF OFFICE BLOOD PRESSURE MONITORING, INCLUDING AMBULATORY AND HOME BLOOD PRESSURE MONITORING

Proposers: Pengo MF, Bilo G, Parati G.

3. Subjects and Methods

Subjects

We will include patients enrolled in the BP-CON-ESH trial following the usual protocol. In detail, the first 4 consecutive patients who will come to the clinic appointment, fulfilling BP-CON-ESH inclusion/exclusion criteria, will undergo ABPM after the 2 office BP measurements as per original protocol.

When returning the ABP device they will start one week of self BPM at home, twice in the morning and twice in the evening

2. Endpoint

Primary endpoint

- To establish the overall rate of ABP and HBP control, and to compare it with the control of attended and unattended office BP measurements.

Secondary endpoints

- 1- To identify different BP phenotypes
 - in untreated subjects the prevalence of true hypertension and normotension, masked hypertension and white coat hypertension
 - in treated subjects the prevalence of true controlled hypertension and sustained uncontrolled (resistant) hypertension, masked uncontrolled hypertension and white-coat uncontrolled (resistant) hypertension
- 2- to establish the prevalence of these phenotypes in European Excellence Hypertension centres
- 3- To evaluate the different devices and methodologies used for ABPM and HBPM in European Hypertension centres focusing on the quality of the data and on compliance with available guidelines
- 4- To explore 24h short term BP variability and home day by day BP variability and their correlation with attended and unattended office BP measurements.

Future plans and steps

1. Those who has started – to continue (plus if feasible to start ABPM/HBPM part)
2. Those who are waiting for the final decision – to be more determinant and be ready to start as soon as possible.
3. Those who are still considering – to make a positive decision.
4. Those who definitively decide not to take a part – have a good luck elsewhere.

Very first preliminary results to be presented at the Gdansk meeting and more data will be shown during the meeting of Excellence centers in Milan.