


Discipline MCP5867 
Pathophysiological Bases and Clinical Practice of Arterial Hypertension

Concentration area: 5131

Creation: 11/07/2019

Activation: 11/07/2019

Credits: 2

Workload:

Theory (weekly)	Practice (weekly)	Study (weekly)	Duration	Total
10	10	10	1 weeks	30 hours

Professors:

Luiz Aparecido Bortolotto

Maria Claudia Costa Irigoyen

Luciano Ferreira Drager

Objectives:

OBJECTIVE: Course directed for post-graduate doctors and other health professionals with scientific interest in the area of Hypertension. The main objective is to enable students to apply knowledge in research and clinical practice of the fundamental concepts in Arterial Hypertension.

Rationale:

RATIONALE: High blood pressure is a medical condition that presents more interfaces with different medical specialties and also other areas of health, and that has shown the greatest developments in recent years, since a better understanding of the genetic changes and pathophysiologic that lead to disease, until the latest forms of treatment, including new technologies. Among the medical areas, stands out as the greatest example of translational medicine, integrating perfectly the teachings of basic area with the implementation of practice and clinical research. In this regard, the Hypertension Unit of the Heart Institute is a pioneer in this integration, enabling the development of several lines of experimental research coupled with human studies, allowing a more comprehensive understanding of the disease that more affects the Brazilian population. The team is recognized as the main study group in Arterial Hypertension in the country, with researchers and physicians with post-doctoral degrees, including coordinators, and has several original international publications with many citations. In addition, due to collaboration with international researchers, it is possible to integrate them in the dissemination of knowledge during the course. Since its beginning as a course of the Department of Cardiology and Pneumology, has provided the participation of post-graduates from different areas of medicine and from other professional areas in health, always obtaining excellent evaluation by students. Thus, the request for restoration is justified, with a new program proposal including the participation of international researchers with conferences in the English language, allowing greater dissemination of knowledge in the area.

Content:

CONTENT: Theoretical classes/International Conferences (each class = 1 hour). Total 10 hours Mechanisms of blood pressure control -Short Term: neurogenic Control (autonomic nervous system), Hormonal control (renin angiotensin-aldosterone system, endothelium);- Long term (Kidney, Body liquids). Mathematical modeling for disentangling sources of ABP variability Inflammation, endothelium and hypertension Clinical Bases of the pathophysiology of primary arterial hypertension Target organ impairment in arterial hypertension: heart, kidneys, vessels and brain Cognitive function in hypertension Arterial stiffness in hypertension and cardiovascular disease Evidence of the benefits of the non-pharmacological treatment of hypertension: Physical activity, salt restriction, weight control, stress modulation. Non-obstructive coronary insufficiency in hypertension Pathophysiological and clinical Bases of the treatment of arterial hypertension Practical classes and seminars: duration 2 hours: Total 10 hours Hands-on methods of arterial stiffness, endothelial function and sympathetic activity – practical classroom Arterial Hypertension as metabolic disease: mechanisms and clinical approach-seminar Blood pressure measurements in clinical practice: Office, ABPM, home measurement and noninvasive central pressure measurement – Seminar Secondary causes of arterial hypertension that are likely to be corrected: Renovascular, hyperaldosteronism, sleep apnea, pheochromocytoma -Seminar Critical analysis of the Arterial Hypertension Guidelines – Seminar Study Hours and seminar preparation (Total 10 hours)

Type of Assessment:

See observation field.

Notes/Remarks:

EVALUATION: 1. Use and participation during classes and discussions (responsible teachers encourage and will be present in all classes) 2. Elaboration of a proposal for a research project on arterial hypertension. NOTE: Minimum number of students: 8 Maximum number of students: 20

Bibliography:

Hipertensão Arterial: bases fisiopatológicas e prática clínica. Krieger EM (coord), Lopes HF (org), Bortolotto LA, Consolim-Colombo FM, Giorgi DMA, de Lima JG, Irigoyen MC, Drager LF (eds). São Paulo, Editora Atheneu, 2013. Módulo de Hipertensão. Reduzindo o impacto das Doenças. Kalil & Fuster-Medicina Cardiovascular. São Paulo, Editora Atheneu, 2016. Gil JS, Drager LF, Guerra-Riccio GM, Mostarda C, Irigoyen MC, Costa-Hong V, Bortolotto LA, Egan BM, Lopes HF. The impact of metabolic syndrome on metabolic, pro-inflammatory and prothrombotic markers according to the presence of high blood pressure criterion. *Clinics (Sao Paulo)*. 2013;68(12):1495-501. Ojeda NB, Grigore D, Alexander BT. Developmental programming of hypertension: insight from animal models of nutritional manipulation. *Hypertension*. 2008;52:44-50. Muntner P, Einhorn PT, Cushman WC, Whelton PK, Bello NA, Drawz PE, Green BB, Jones DW, Juraschek SP, Margolis KL, Miller ER 3rd, Navar AM, Ostchega Y, Rakotz MK, Rosner B, Schwartz JE, Shimbo D, Stergiou GS, Townsend RR, Williamson JD, Wright JT Jr, Appel LJ; 2017 National Heart, Lung, and Blood Institute Working Group. Blood Pressure Assessment in Adults in Clinical Practice and Clinic-Based Research: JACC Scientific Expert Panel. *J Am Coll Cardiol*. 2019;73(3):317-3358. VI Diretrizes Brasileiras de Monitorização Ambulatorial da Pressão Arterial (MAPA) e IV Diretrizes Brasileiras de Monitorização Residencial de Pressão Arterial (MRPA). *Arq Bras Cardiol*. 2018;110(5 supl.1):1-29. Barbé F, Durán-Cantolla J, Sánchez-de-la-Torre M, Martínez-Alonso M, Carmona C, Barceló A, Chiner E, Masa JF, Gonzalez M, Marín JM, Garcia-Rio F, Diaz de Atauri J, Terán J, Mayos M, de la Peña M, Monasterio C, del Campo F, Montserrat JM; Spanish Sleep And Breathing Network. Effect of continuous positive airway pressure on the incidence of hypertension and cardiovascular events in nonsleepy patients with obstructive sleep apnea: a randomized controlled trial. *JAMA*. 2012;307(20):2161-8. Ecelbarger CM. Metabolic syndrome, hypertension, and the frontier between. *Am J Physiol Renal Physiol*. 2016;310(11):F1175-7. Reaven GM, Lithell H, Landsberg L. Hypertension and associated metabolic abnormalities--the role of insulin resistance and the sympathoadrenal system. *N Engl J Med*. 1996;334(6):374-81. Sociedade Brasileira de Cardiologia; Sociedade Brasileira de Hipertensão; Sociedade Brasileira de Nefrologia. VII Brazilian Guidelines on Hypertension. *Arq Bras Cardiol*. 2016;107(3 Suppl):1-83. ESH/ESC Task Force for the Management of Arterial Hypertension. 2013 Practice guidelines for the management of arterial hypertension of the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC): ESH/ESC Task Force for the Management of Arterial Hypertension. *Eur Heart J*. 2018;39:3021-104. Safar ME. Arterial stiffness as a risk factor for clinical hypertension. *Nat Rev Cardiol*. 2018 Feb;15(2):97-105. Sechi LA, Colussi G, Di Fabio A, Catena C. Cardiovascular and renal damage in primary aldosteronism: outcomes after treatment. *Am J Hypertens*. 2010;23(12):1253-60. Whelton PK, Carey RM, Aronow WS, Casey DE Jr, Collins KJ, Dennison Himmelfarb C, DePalma SM, Gidding S, Jamerson KA, Jones DW, MacLaughlin EJ, Muntner P, Ovbigele B, Smith SC Jr, Spencer CC, Stafford RS, Taler SJ, Thomas RJ, Williams KA Sr, Williamson JD, Wright JT Jr. 2017ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Hypertension*. 2018;71(6):e13-e115. Bauer F, Seibert FS, Rohn B, Bauer KAR, Roishoven E, Babel N, Westhoff TH. Attended Versus Unattended Blood Pressure Measurement in a Real Life Setting. *Hypertension*. 2018;71(2):243-249. Herrmann SM, Saad A, Textor SC. Management of atherosclerotic renovascular disease after Cardiovascular Outcomes in Renal Atherosclerotic Lesions (CORAL). *Nephrol Dial Transplant*. 2015;30(3):366-75. Lopes HF, Martin KL, Nashar K, Morrow JD, Goodfriend TL, Egan BM. DASH diet lowers blood pressure and lipid-induced oxidative stress in obesity. *Hypertension*. 2003;41(3):422-30. Rahman F, McEvoy JW. Dangers of Overly Aggressive Blood Pressure Control. *Curr Cardiol Rep*. 2018;20(11):108.

Languages taught:

Portuguese