Discipline MCP5836
Valvular Heart Disease: From Pathophysiologic Mechanisms to Critical Appraisal of Therapeutic Options

Concentration area: 5131

Creation: 12/09/2024

Activation: 28/10/2024

Credits: 2

Workload:

Theory (weekly)	Practice (weekly)	Study (weekly)	Duration	Total
12	4	14	1 weeks	30 hours

Professors:

Flavio Tarasoutchi

Roney Orismar Sampaio

Vitor Emer Egypto Rosa

Objectives:

To promote a comprehensive vision on essential aspects of the natural history of valvular heart disease, highlighting pathophysiological mechanisms related to ventricular remodeling and pulmonary hypertension, as well as factors that determine a new dimension of imaging procedures. Our objectives include: • Cellular, neurohumoral and muscular mechanisms that interact in the evolution of left ventricular remodeling in chronic valvular heart disease. • Mechanisms of progression to irreversible pulmonary hypertension linked to increased pulmonary vascular bed resistance and its effects on right ventricular function.

Rationale:

The subjects that will be discussed are the fundamental basis for critical thinking about knowledge, skills and attitudes in the care of valvular heart disease patients. This theoretical and practical knowledge may be beneficial in other areas of Cardiology.

Content:

• Critical analysis of the fundamentals of the guidelines recommendations in Valvular Heart Disease. • Cardiopulmonary interaction in Mitral Valve Disease. Influence of hemodynamic and humoral factors on prognosis and therapeutics. Are the pulmonary alterations in mitral valve disease reversible? • Triggers for ventricular hypertrophy. • Study of the compartments involved in the response to volume or pressure overload: muscular, cellular, vascular and neurohumoral. • Interaction of neurohumoral, muscular and cellular mechanisms in left ventricular remodeling of chronic valvular heart disease. • Mitral Regurgitation and practical approach of left ventricular remodeling. • Mechanical and hemodynamic factors associated with correction of valvular heart disease and left ventricular remodeling. • Practical aspects of the therapeutic approach of patients with ventricular dysfunction secondary to valvular heart disease. • Practical approach to postoperative ventricular remodeling. • Transcatheter treatment of Aortic Stenosis

Type of Assessment:

Attendance at classes and evaluation in seminars.

Notes/Remarks:

Minimum number of students: 04 Maximum number of students: 12

Bibliography:

1. Spina GS, Tarasoutchi F, Sampaio RO, Vieira ML, Strunz C, Laurindo FR, Grinberg M. Neurohormonal profile of rheumatic patients with significant chronic aortic regurgitation. Arq Bras Cardiol. 2009 Feb;92(2):143-56. 2. Elias N, Tarasoutchi F, Spina GS, Sampaio RO, Pomerantzeff PM, Laurindo FR, Grinberg M. Myocardial fibrosis and ventricular remodeling in severe chronic aortic regurgitation. Arq Bras Cardiol. 2009 Jan;92(1):63-7. 3. Nigri M, Azevedo CF, Rochitte CE, Schraibman V, Tarasoutchi F, Pommerantzeff PM, Brandão CM, Sampaio RO, Parga JR, Avila LF, Spina GS, Grinberg M. Contrast-enhanced magnetic resonance imaging identifies focal regions of intramyocardial fibrosis in patients with severe aortic valve disease: Correlation with quantitative histopathology. Am Heart J. 2009 Feb;157(2):361-8. 4. Sampaio RO, Jonke VM, Falcão JL, Falcão S, Spina GS, Tarasoutchi F, Grinberg M. Prevalence of coronary artery disease and preoperative assessment in patients with valvopathy. Arq Bras Cardiol. 2008 Sep;91(3):183-6, 200-4. 5. Ramasawmy R, Spina GS, Fae KC, Pereira AC, Nisihara R, Messias Reason IJ, Grinberg M, Tarasoutchi F, Kalil J, Guilherme L. Association of mannose-binding lectin gene polymorphism but not of mannose-binding serine protease 2 with chronic severe aortic regurgitation of rheumatic etiology. Clin Vaccine Immunol. 2008 Jun;15(6):932-6. 6. Sampaio RO, Fae KC, Demarchi LM, Pomerantzeff PM, Aiello VD, Spina GS, Tanaka AC, Oshiro SE, Grinberg M, Kalil J, Guilherme L. Rheumatic heart disease: 15 years of clinical and immunological follow-up. Vasc Health Risk Manag. 2007;3(6):1007-17. 7. Nigri M, Rochitte CE, Tarasoutchi F, Spina GS, Parga JR, Avila LF, Sampaio RO, Ramires JA, Grinberg M. Symptomatic severe chronic aortic valve disease: a comparative study of cardiac magnetic resonance imaging and echocardiography Arq Bras Cardiol. 2006 Feb;86(2):145-9. 8. Sampaio RO, Grinberg M, Leite JJ, Tarasoutchi F, Chalela WA, Izaki M, Spina GS, Rossi EG, Mady C. Effect of enalapril on left ventricular diameters and exercise capacity in asymptomatic or mildly symptomatic patients with regurgitation secondary to mitral valve prolapse or rheumatic heart disease. Am J Cardiol. 2005 Jul 1;96(1):117-21. 9. Dancini JL, Pomerantzeff PM, Spina GS, Pardi MM, Giorgi MC, Sampaio RO, Grinberg M, Oliveira SA. Valve replacement with chordal preservation and valvuloplasty for chronic mitral insufficiency. Arq Bras Cardiol. 2004 Mar;82(3):235-42. 10. Tarasoutchi F, Grinberg M, Spina GS, Sampaio RO, Cardoso LF, Rossi EG, Pomerantzeff P, Laurindo F, da Luz PL, Ramires JA. Ten-year clinical laboratory follow-up after application of a symptom-based therapeutic strategy to patients with severe chronic aortic regurgitation of predominant rheumatic etiology. J Am Coll Cardiol. 2003 Apr 16;41(8):1316-24. 11. Guilherme L, Faé KC, Higa F, Chaves L, Oshiro SE, Freschi de Barros S, Puschel C, Juliano MA, Tanaka AC, Spina G, Kalil J. Towards a vaccine against rheumatic fever. Clin Dev Immunol. 2006 Jun-Dec;13(2-4):125-32. 12. Alvarenga PG, Hounie AG, Mercadante MT, Diniz JB, Salem M, Spina G, Miguel EC. Obsessive-compulsive symptoms in heart disease patients with and without history of rheumatic fever. J Neuropsychiatry Clin Neurosci. 2006 Summer;18(3):405-8. 13. Tarasoutchi F, Montera MW, Ramos AIO, Sampaio RO, Rosa VEE, Accorsi TAD, Lopes ASSA, Fernandes JRC, Pires LJT, Spina GS, et al. Atualização das Diretrizes Brasileira de Valvopatias: Abordagem das lesões anatomicamente importantes. www.arquivosonline.com.br. Sociedade Brasileira de Cardiologia ISSN-0066-782X volume 109, nº 6, supl. 2, Dezembro 2017. 14.Tarasoutchi F, Montera MW, Ramos AIO, Sampaio RO, Rosa VEE, Accorsi TAD, Santis A, et al. Update of the Brazilian Guidelines for Valvular Heart Disease – 2020. Arq. Bras. Cardiol. 2020;115(4):720-75 15. Guimarães HP, Lopes RD, de Barros E Silva PGM, Liporace IL, Sampaio RO, Tarasoutchi F et al.. RIVER Trial Investigators. Rivaroxaban in Patients with Atrial Fibrillation and a Bioprosthetic Mitral Valve. N Engl J Med. 2020 Nov 26;383(22):2117-2126. doi: 10.1056/NEJMoa2029603. Epub 2020 Nov 14. PMID: 33196155. 16. Oliveira GMM, Brant LCC, Polanczyk CA, Biolo A, Nascimento BR, Malta DC, Souza MFM, Soares GP, Xavier Junior GF, Machline-Carrion MJ, Bittencourt MS, Pontes Neto OM, Silvestre OM, Teixeira RA, Sampaio RO, Gaziano TA, Roth GA, Ribeiro ALP. Cardiovascular Statistics - Brazil 2020. Arq Bras Cardiol. 2020 Sep;115(3):308-439. English, Portuguese. doi: 10.36660/abc.20200812. PMID: 33027364. 17. Guimarães HP, de Barros E Silva PGM, Liporace IL, Sampaio RO, Tarasoutchi F et al., RIVER (RIvaroxaban for Valvular Heart diseasE

and atRial Fibrillation Trial -RIVER Trial) Investigators. A randomized clinical trial to evaluate the efficacy and safety of rivaroxaban in patients with bioprosthetic mitral valve and atrial fibrillation or flutter: Rationale and design of the RIVER trial. Am Heart J. 2021 Jan;231:128-136. doi: 10.1016/j.ahj.2020.10.001. Epub 2020 Oct 10. PMID: 33045224. 18. Bastos Filho JBB, Sampaio RO, Cividanes FR, Rosa VEE, da Costa LPN, Vieira MLC, Jatene FB, Tarasoutchi F, Palma JH, Ribeiro HB. Double transcatheter balloon-expandable valve implantation for severe valve dysfunction in high-risk patients: initial experience. Interact Cardiovasc Thorac Surg. 2020 Oct 1;31(4):461-466. doi: 10.1093/icvts/ivaa142. PMID: 32901288. 19. Postol E, Sá-Rocha LC, Sampaio RO, Demarchi LMMF, Alencar RE, Abduch MCD, Kalil J, Guilherme L. Group A Streptococcus Adsorbed Vaccine: Repeated Intramuscular Dose Toxicity Test in Minipigs. Sci Rep. 2019 Jul 5;9(1):9733. doi: 10.1038/s41598-019-46244-2. PMID: 31278336; PMCID: PMC6611820. 20. Pardi MM, Pomerantzeff PMA, Sampaio RO, Abduch MC, Brandão CMA, Mathias W Jr, Grinberg M, Tarasoutchi F, Vieira MLC. Relation of mitral valve morphology to surgical repair results in patients with mitral valve prolapse: A three-dimensional transesophageal echocardiography study. Echocardiography. 2018 Sep;35(9):1342-1350. doi: 10.1111/echo.14048. Epub 2018 Jun 19. PMID: 29920772. 21. de Santis A, Tarasoutchi F, Araujo Filho JAB, Vieira MC, Nomura CH, Katz M, Spina GS, Sampaio RO, Accorsi TAD, Rosa VEE, Fernandes JRC, Brown J, Edelman ER, Lemos PA. Topographic Pattern of Valve Calcification: A New Determinant of Disease Severity in Aortic Valve Stenosis. JACC Cardiovasc Imaging. 2018 Jul;11(7):1032-1035. doi: 10.1016/j.jcmg.2017.10.006. Epub 2017 Dec 13. PMID: 29248658; PMCID: PMC5993630. 22. Siciliano RF, Randi BA, Gualandro DM, Sampaio RO, Bittencourt MS, da Silva Pelaes CE, Mansur AJ, Pomerantzeff PMA, Tarasoutchi F, Strabelli TMV. Early-onset prosthetic valve endocarditis definition revisited: Prospective study and literature review. Int J Infect Dis. 2018 Feb;67:3-6. doi: 10.1016/j.ijid.2017.09.004. Epub 2017 Sep 19. PMID: 28935245. 23. Rosa VEE, Ribeiro HB, Sampaio RO, Morais TC, Rosa MEE, Pires LJT, Vieira MLC, Mathias W Jr, Rochitte CE, de Santis ASAL, Fernandes JRC, Accorsi TAD, Pomerantzeff PMA, Rodés-Cabau J, Pibarot P, Tarasoutchi F. Myocardial Fibrosis in Classical Low-Flow, Low-Gradient Aortic Stenosis. Circ Cardiovasc Imaging. 2019 May;12(5):e008353. doi: 10.1161/CIRCIMAGING.118.008353. PMID: 31088148.

Class type:

Não-Presencial

Additional class type information:

- A porcentagem da disciplina que ocorrerá no sistema não presencial (1- 100%). R: 100% Não presencial.
- Detalhamento das atividades que serão presenciais e das que serão desenvolvidas via remota, com discriminação do tempo de atividade contínua online. R: A disciplina terá 13 aulas teóricas (30 a 45 minutos cada) e 07 seminários de 20 a 40 minutos cada.
- Especificação se as aulas, quando online, serão síncronas ou assíncronas. R: Aulas síncronas.
- Descrição do tipo de material e/ou conteúdo que será disponibilizado para o aluno e a a plataforma que será utilizada. R: Material na descrição do curso (referências bibliográficas) e será usado a plataforma Google Meets.
- Definição sobre a presença na Universidade e, quando necessária, discriminar quem deverá estar presente (professora/professor; aluna/aluno; ambos). R: Curso 100% online. Não será necessário a presença dos alunos na Universidade, aos docentes será facultativo.
- Descrição dos tipos e da frequência de interação entre aluna/aluno e professora/professor (somente durante as aulas; fora do período das aulas; horários; por chat/e-mail/fóruns ou outro). R: Interação durante as aulas será por email ou telefone (11)2661.5056 – Unidade Clínica de Valvopatias – HC FMUSP.
- A forma de controle da frequência nas aulas. R: Confirmação da presença no início, meio e final das aulas.
- Informação sobre a obrigatoriedade ou não de disponibilidade de câmera e áudio (microfone) por parte dos alunos. R: Obrigatório câmera e áudio a todos os participantes.
- A forma de avaliação da aprendizagem (presencial/remota). R: Remota, baseada na presença e participação nas atividades do Curso (aulas e apresentação de seminários).