

**Discipline MCP5872**   
**Critical Analysis of Clinical Studies in Cardio-Oncology**

**Concentration area:** 5131

**Creation:** 20/02/2025

**Activation:** 20/02/2025

**Credits:** 2

**Workload:**

<b>Theory</b> (weekly)	<b>Practice</b> (weekly)	<b>Study</b> (weekly)	<b>Duration</b>	<b>Total</b>
5	10	15	1 weeks	30 hours

**Professors:**

Roberto Kalil Filho  
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Isabela Bispo Santos da Silva Costa  
Stephanie Itala Rizk

**Objectives:**

Discipline aimed at postdoctoral physicians and other health professionals with scientific interest in the area of Cardio-Oncology. The main objective is to enable students to apply the key fundamental Cardio-oncology concepts in research and clinical practice.

**Rationale:**

In the last decades, the cancer treatment has advanced significantly and improved patients' survival. As a result, cardiovascular complications related to chemotherapy have had a higher impact in their overall survival and quality of. Thus, understanding cardiotoxicity related to cancer treatment, the main medications involved, the potential for reversibility and the management of patients at risk of toxicity has become part of the daily practice of clinical cardiology. Additionally, the potential cardiotoxicity of newer cancer treatment drug is yet to be defined. The collaboration of the Cancer Institute of the State of São Paulo and the Heart Institute of the Hospital das Clínicas of the Medical School of the University of São Paulo, with extensive interaction between cardiologists and oncologists, provides a unique setting for the development of research in the field. The present course aims to bring the discussion on the development of the science related to the field to postgraduate students.

**Content:**

Topics to be addressed: 1. Critical analysis of the studies on cardiotoxicity by Anthracyclines, Trastuzumab and tyrosine kinase inhibitors; 2. Radiotherapy and cardiovascular system; 3. Effects of endocrine therapy for breast and prostate cancer and cardiovascular complications; 4. Peculiarities in the treatment of heart failure and coronary disease in cancer patients, evidence gaps and opportunities for research; 5. Pericardium diseases in cancer patients.

**Type of Assessment:**

- Frequency, performance and participation during lectures and discussions (the responsible teachers are present in all classes) - On-line questionnaires

**Notes/Remarks:**

Minimum number of students: 5 Maximum number of students: 40

## Bibliography:

1. Cancer and the Heart – 2nd Edition. Michael S Ewer, Edward Yeh.
2. Cancer Therapy-Related Cardiac Dysfunction and Heart Failure: Part 1: Definitions, Pathophysiology, Risk Factors, and Imaging *Circ Heart Fail*. 2016 Jan.
3. Cancer Therapy-Related Cardiac Dysfunction and Heart Failure: Part 2: Prevention, Treatment, Guidelines, and Future Directions. *Circ Heart Fail*. 2016 Feb.
4. Kalil Filho R, Hajjar LA, Bacal F, Hoff PM, Diz M del P, Galas FRBG, et al. I Diretriz Brasileira de Cardio-Oncologia da Sociedade Brasileira de Cardiologia. *Arq Bras Cardiol* 2011; 96(2 supl.1): 1-52
5. Albini A, Pene' is G, Donatelli F et al. Cardiotoxicity of anticancer drugs: the need for cardio-oncology and cardio-oncological prevention. *J Natl Cancer Inst* 2010; 102: 14–25.
6. Oeffinger KC, Mertens AC, Sklar CA et al. Chronic health condition in adult survivors of childhood cancer. *N Engl J Med* 2006; 355: 1572–1582.
7. Kerkela R, Grazette L, Yacobi R et al. Cardiotoxicity of the cancer therapeutic agent imatinib mesylate. *Nat Med* 2006; 12: 908–916.
8. Yeh ET, Bickford CL. Cardiovascular complications of cancer therapy: incidence, pathogenesis, diagnosis and management. *J Am Coll Cardiol* 2009; 53: 2231–2247.
9. Jones RL, Swanton C, Ewer MS. Anthracycline cardiotoxicity. *Expert Opin Drug Saf* 2006; 5: 791–809.
10. Ananthan K, Lyon AR. The Role of Biomarkers in Cardio-Oncology. *J Cardiovasc Transl Res*. 2020 Jun;13(3):431-450. doi: 10.1007/s12265-020-10042-3. Epub 2020 Jul 8. PMID: 32642841; PMCID: PMC7360533.
11. Koutsoukis A, Ntalianis A, Repasos E, Kastritis E, Dimopoulos MA, Paraskevaidis I. Cardio-oncology: A Focus on Cardiotoxicity. *Eur Cardiol*. 2018 Aug;13(1):64-69. doi: 10.15420/ecr.2017:17:2. PMID: 30310475; PMCID: PMC6159462.
12. Lyon AR, Dent S, Stanway S, Earl H, Brezden-Masley C, Cohen-Solal A, Tocchetti CG, Moslehi JJ, Groarke JD, Bergler-Klein J, Khoo V, Tan LL, Anker MS, von Haehling S, Maack C, Pudil R, Barac A, Thavendiranathan P, Ky B, Neilan TG, Belenkov Y, Rosen SD, Iakobishvili Z, Sverdlov AL, Hajjar LA, Macedo AVS, Manisty C, Ciardiello F, Farmakis D, de Boer RA, Skouri H, Suter TM, Cardinale D, Witteles RM, Fradley MG, Herrmann J, Cornell RF, Wechelaker A, Mauro MJ, Milojkovic D, de Lavallade H, Ruschitzka F, Coats AJS, Seferovic PM, Chioncel O, Thum T, Bauersachs J, Andres MS, Wright DJ, López-Fernández T, Plummer C, Lenihan D. Baseline cardiovascular risk assessment in cancer patients scheduled to receive cardiotoxic cancer therapies: a position statement and new risk assessment tools from the Cardio-Oncology Study Group of the Heart Failure Association of the European Society of Cardiology in collaboration with the International Cardio-Oncology Society. *Eur J Heart Fail*. 2020 Nov;22(11):1945-1960. doi: 10.1002/ejhf.1920. Epub 2020 Aug 6. PMID: 32463967; PMCID: PMC8019326.
13. Alvarez-Cardona JA, Ray J, Carver J, Zaha V, Cheng R, Yang E, Mitchell JD, Stockerl-Goldstein K, Kondapalli L, Dent S, Arnold A, Brown SA, Leja M, Barac A, Lenihan DJ, Herrmann J; Cardio-Oncology Leadership Council. Cardio-Oncology Education and Training: JACC Council Perspectives. *J Am Coll Cardiol*. 2020 Nov 10;76(19):2267-2281. doi: 10.1016/j.jacc.2020.08.079. PMID: 33153587; PMCID: PMC8174559.
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15. Bhagat A, Kleinerman ES. Anthracycline-Induced Cardiotoxicity: Causes, Mechanisms, and Prevention. *Adv Exp Med Biol*. 2020;1257:181-192. doi: 10.1007/978-3-030-43032-0\_15. PMID: 32483740.
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18. Cardinale D, Colombo A, Bacchiani G, Tedeschi I, Meroni CA, Veglia F, Civelli M, Lamantia G, Colombo N, Curigliano G, Fiorentini C, Cipolla CM. Early detection of anthracycline cardiotoxicity and improvement with heart failure therapy. *Circulation*. 2015 Jun 2;131(22):1981-8. doi: 10.1161/CIRCULATIONAHA.114.013777. Epub 2015 May 6. PMID: 25948538.
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Curr Treat Options Oncol. 2019 Aug 8;20(9):73. doi: 10.1007/s11864-019-0672-z. PMID: 31396720; PMCID: PMC6687672.

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**Class type:**

Online

**Additional class type information:**

- The percentage of the course that will be held remotely (1- 100%). 100%.
- Details of the activities that will be held in person and those that will be carried out remotely, with a breakdown of the time of continuous online activity. 100% non-face-to-face.
- Specification of whether classes, when online, will be synchronous or asynchronous. Synchronous.
- Description of the type of material and/or content that will be made available to the student and the platform that will be used. No material will be made available.
- Definition of attendance at the University and, when necessary, specify who must be present (professor; student; both). No obligation to be presente.
- Description of the types and frequency of interaction between student and professor (only during classes; outside of class time; schedules; by chat/email/forums or other). Only during classes.
- The form of monitoring attendance in classes. Roll call during classes.
- Information on whether or not students are required to have a camera and audio (microphone). Camera and audio are mandatory for students and teachers.
- The method of assessing learning (in person/remote). Remote assessment based on attendance, performance and participation during classes and discussions.