

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES
AT VILNIUS UNIVERSITY**

Scientific Area/eas, Field/ds of Science	Medical and Health Sciences (M 000): Medicine (M 001)			
Faculty, Institute, Department/Clinic	Faculty of Medicine Institute of Clinical Medicine Clinic of Chest Diseases, Immunology, and Allergology			
Course unit title (ECTS credits, hours)	Drug Hypersensitivity 8 credits (216 hours)			
Study method	Lectures	Seminars	Consultations	Self-study
Number of ECTS credits	-	-	1	7
Method of the assessment (in 10 point system)	<p>Reporting: presentation. The report is presented on a specific topic after discussion with the consulting lecturer (the doctoral student must analyse, review and present the latest scientific publications related to the selected topic).</p> <p>Evaluation criteria (minimal credible score – 5 points):</p> <ol style="list-style-type: none"> Content of the presentation (8 points): <ul style="list-style-type: none"> compliance with the general technical guidelines for reporting (1 point); clarity of the message (1 point); completeness of the topic analysis, logic of the topic delivery, integrity and ethical presentation (2 points); applied scientific aspect (theoretical substantiation, scientific analysis, ability to single out and present essential subjects) (2 points); originality (independence, input from the speaker) (2 points). For message presentation and visualization (2 points): <ul style="list-style-type: none"> language style, pace, clarity, persuasiveness; use of visual material; ability to answer questions clearly; clear presentation of ideas; quality of argumentation; time management (or delivery time is used properly). 			
PURPOSE OF THE COURSE UNIT				
<p>The aim of the course is to get acquainted with and understand the adverse effects of drugs and hypersensitivity reactions caused by medications, their epidemiology, mechanisms of development, clinic, methods of diagnosis, treatment and prevention.</p>				
THE MAIN TOPICS OF COURSE UNIT				
<p>Classification of adverse drug reactions. Drug allergy and intolerance. Epidemiology of allergic drug reactions. Causes of hypersensitivity to drugs. Immunogenicity of drugs. Classification of drug-induced hypersensitivity reactions. Cross-reactions to hypersensitivity drugs. IgE-dependent reactions. Cytotoxic reactions. Immune complex-induced reactions. Delayed drug-induced hypersensitivity reactions. Mechanisms of drug-induced hypersensitivity reactions. Symptoms of drug-induced hypersensitivity reactions. Drug-induced generalized and organ-specific hypersensitivity reactions. Anaphylaxis. Serum sickness. Serum sickness syndrome. Drug-induced fever. Allergic vasculitis. Drug induced damage of the liver and kidneys. Drug-induced agranulocytosis, hemolytic anemia, thrombocytopenia. Allergic skin reactions to drugs. Urticaria and angioedema. Fixed erythema. Erythema multiforme. Stevens-Johnson syndrome. Layell syndrome. Allergic contact dermatitis. Photodermatitis. Allergic reactions to antibiotics. Significance of infection</p>				

in the development of drug sensitivity. Polyvalent drug allergy syndrome. Susceptibility to Sulphonamide induced hypersensitivity in patients with HIV infection. Perioperative drug hypersensitivity reactions. Hypersensitivity reactions caused by iodocontrast agents. Diagnosis of drug allergy. Importance of medical history in the diagnosis of hypersensitivity reactions. Clinical diagnostic criteria for drug allergy. Diagnosis of drug allergy in vivo. Skin allergy testing with medication. Drug provocation tests. In vitro diagnosis of drug allergy. Algorithm for diagnosis of drug allergy. Treatment of drug allergies. Treatment of anaphylaxis: emergency and intensive care. Desensitization and methods of desensitization. Prevention of drug allergy. Possibilities and selection of alternative treatments for drug-sensitive patients. Sensitivity to aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs). Types of reactions to aspirin and NSAIDs. Provocation tests with aspirin and NSAIDs: oral, inhalation. Desensitization to aspirin and NSAID. Allergic reactions to vaccines. Allergic reactions caused by chemotherapy.

RECOMMENDED LITERATURE SOURCES

1. Pichler WJ, Watkins S, Yerly D. Risk Assessment in Drug Hypersensitivity: Detecting Small Molecules Which Outsmart the Immune System. *Front Allergy*. 2022 Feb 22;3:827893. doi: 10.3389/falgy.2022.827893. PMID: 35386664; PMCID: PMC8974731.
2. Torres MJ, Trautmann A, Böhm I, Scherer K, Barbaud A, Bavbek S, Bonadonna P, Cernadas JR, Chiriac AM, Gaeta F, Gimenez-Arnau AM, Kang HR, Moreno E, Brockow K. Practice parameters for diagnosing and managing iodinated contrast media hypersensitivity. *Allergy*. 2021 May;76(5):1325-1339. doi: 10.1111/all.14656. PMID: 33170954.
3. Blanca-Lopez N, Atanaskovic-Markovic M, Gomes ER, Kidon M, Kuyucu S, Mori F, Soyer O, Caubet JC. An EAACI Task Force report on allergy to beta-lactams in children: Clinical entities and diagnostic procedures. *Pediatr Allergy Immunol*. 2021 Oct;32(7):1426-1436. doi: 10.1111/pai.13529. Epub 2021 Jun 4. PMID: 33931922.
4. Doña I, Pérez-Sánchez N, Eguiluz-Gracia I, Muñoz-Cano R, Bartra J, Torres MJ, Cornejo-García JA. Progress in understanding hypersensitivity reactions to nonsteroidal anti-inflammatory drugs. *Allergy*. 2020 Mar;75(3):561-575. doi: 10.1111/all.14032. Epub 2019 Oct 28. PMID: 31469167.
5. Garvey LH, Ebo DG, Mertes PM, Dewachter P, Garcez T, Kopac P, Laguna JJ, Chiriac AM, Terreehorst I, Voltolini S, Scherer K. An EAACI position paper on the investigation of perioperative immediate hypersensitivity reactions. *Allergy*. 2019 Oct;74(10):1872-1884. doi: 10.1111/all.13820. Epub 2019 Jun 18. PMID: 30964555.
6. Atanaskovic-Markovic M, Gomes E, Cernadas JR, du Toit G, Kidon M, Kuyucu S, Mori F, Ponvert C, Terreehorst I, Caubet JC. Diagnosis and management of drug-induced anaphylaxis in children: An EAACI position paper. *Pediatr Allergy Immunol*. 2019 May;30(3):269-276. doi: 10.1111/pai.13034. PMID: 30734362.
7. Kidon M, Blanca-Lopez N, Gomes E, Terreehorst I, Tanno L, Ponvert C, Chin CW, Caubet JC, Soyer O, Mori F, Blanca M, Atanaskovic-Markovic M. EAACI/ENDA Position Paper: Diagnosis and management of hypersensitivity reactions to non-steroidal anti-inflammatory drugs (NSAIDs) in children and adolescents. *Pediatr Allergy Immunol*. 2018 Aug;29(5):469-480. doi: 10.1111/pai.12915. Epub 2018 Jun 13. PMID: 29693290.
8. Demoly P, Adkinson NF, Brockow K, Castells M, Chiriac AM, Greenberger PA, Khan DA, Lang DM, Park HS, Pichler W, Sanchez-Borges M, Shiohara T, Thong BY. International Consensus on drug allergy. *Allergy*. 2014 Apr;69(4):420-37. doi: 10.1111/all.12350. PMID: 24697291.
9. Scherer K, Brockow K, Aberer W, Gooi JH, Demoly P, Romano A, Schnyder B, Whitaker P, Cernadas JS, Bircher AJ; ENDA, the European Network on Drug Allergy and the EAACI Drug Allergy Interest Group. Desensitization in delayed drug hypersensitivity reactions -- an EAACI position paper of the Drug Allergy Interest

Group. Allergy. 2013 Jul;68(7):844-52. doi: 10.1111/all.12161. Epub 2013 Jun 7. PMID: 23745779.

10. Bousquet PJ, Gaeta F, Bousquet-Rouanet L, Lefrant JY, Demoly P, Romano A. Provocation tests in diagnosing drug hypersensitivity. Curr Pharm Des. 2008;14(27):2792-802. doi: 10.2174/138161208786369731. PMID: 18991698.

CONSULTING LECTURERS

1. Coordinating lecturer: Laura Malinauskienė (Prof. Dr.).

2. Anželika Chomičienė (Assoc. Prof. Dr.).

APPROVED:

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:
29th of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė