

ACTA MEDICINAE 3/2015 Kompletní literatura

Kardiologie Diabetologie

- 2 Studie PEGASUS: dlouhodobá duální antiagregace po infarktu myokardu – ticagrelor + ASA**
prof. MUDr. Jindřich Špinar, CSc., FESC | prof. MUDr. Lenka Špinarová, Ph.D., FESC | prof. MUDr. Jiří Vítovec, CSc., FESC | doc. MUDr. Ondřej Ludka, Ph.D. Interní kardiologická klinika, FN Brno, LF MU a ICRC, I. interní kardioangiologická klinika, FN u svaté Anny, LF MU, Brno
- 2 Faktory ovlivňující tepovou frekvenci – pohled fyziologa**
prof. MUDr. Marie Nováková, Ph.D. Fyziologický ústav LF MU, Brně
- 2 Vyšetření pulzu**
MUDr. Jiří Hlásenský Interní kardiologická klinika LF MU a FN Brno MUDr. Zuzana Mihalová | prof. MUDr. Jindřich Špinar, CSc. | doc. MUDr. Ondřej Ludka, Ph.D. Interní kardiologická klinika LF MU a FN Brno, Mezinárodní centrum klinického výzkumu, FN u sv. Anny v Brně
- 3 Jaká je optimální srdeční frekvence u nemocných se sinusovým rytmem?**
prof. MUDr. Jaromír Hradec, CSc., FESC III. interní klinika 1. LF UK a VFN, Praha
- 3 Optimální tepová frekvence u nemocných s fibrilací síní**
doc. MUDr. Martin Fiala, Ph.D. Interní kardiologická klinika, FN Brno, Oddělení kardiologie, Nemocnice Podlesí, a. s., Třinec
- 4 Kontrola rytmu/frekvence u nemocných s fibrilací síní**
MUDr. Ondřej Toman, Ph.D. Interní kardiologická klinika FN Brno a LF MU, Brno
- 4 Indikace klasické kardiostimulace**
doc. MUDr. Miroslav Novák, CSc. I. interní kardioangiologická klinika, FN u sv. Anny a LF MU, Brno
- 4 Indikace resynchronizační terapie**
MUDr. Jitka Vlašínová Ph.D. Interní kardiologická klinika, FN Brno
- 5 Moderní trendy v léčbě hypertenze**
prof. MUDr. Hana Rosolová, DrSc. Centrum preventivní kardiologie, II. interní klinika LF a FN, Plzeň, UK, Praha
- 5 Digital 5 – lékový profil**
MUDr. Jiří Slíva, MD., Ph.D. Ústavy farmakologie 2. a 3. LF UK, Praha
- 5 Diureтика v léčbě hypertenze**
doc. MUDr. Jiří Špáč, CSc. II. Interní klinika, MU, FN u sv. Anny v Brně
- 5 Kdy a jak určovat kardiovaskulární riziko? Lépe dříve nežli později...**
doc. MUDr. Michal Vrablík, Ph.D. | PharmDr. Zdeněk Chmelík III. interní klinika – klinika endokrinologie a metabolismu, LF UK a VFN, Praha RNDr. Věra Lánská, CSc. Institut klinické a experimentální medicíny
- 6 Glukagon a efektivita inkretinové terapie**
MUDr. Marek Honka Lestela Hlučín, s. r. o.
- 6 Fenomén hyperglykemie nalačno a možnosti jejího ovlivnění novými bazálními inzuliny**
prof. MUDr. Martin Haluzík, DrSc. III. interní klinika 1. LF UK a VFN, Praha
- 7 Klinický význam postprandiální glykemie a současné možnosti intervence**
MUDr. Martin Prázný, Ph.D., CSc. III. interní klinika 1. LF UK a VFN, Praha
- 7 Praktické aspekty terapie inhibitory SGLT2**
MUDr. Martina Lášticová III. interní gerontometabolická klinika, LF UK a FN, Hradec Králové
- 8 Duální inhibice: výsledky studie IMPROVE-IT – jaký má význam u pacientů s diabetem**
prof. MUDr. Richard Češka, CSc., FACP, FEFIM Centrum preventivní kardiologie, III. interní klinika 1. LF UK a VFN, Praha
- 8 Studie LIBRA: liraglutid a zachování funkce β -buněk pankreatu**
MUDr. Eva Račická Diabetologická a interní ambulance, Ostrava
- 8 Látky s potenciálem ovlivnit progresi DM ve volném prodeji a volba optimálního analgetika**
MUDr. Jiří Slíva, MD., Ph.D. Ústavy farmakologie 2. a 3. LF UK, Praha
- 9 Kdy a jak užívat dia-sipping?**
doc. MUDr. Pavel Kohout, Ph.D. Centrum výživy a interní oddělení, Thomayerova nemocnice, Praha
- 9 Kanagliflozin – nový lék pro léčbu diabetes mellitus 2. typu**
MUDr. Eva Račická Diabetologická a interní ambulance, Ostrava

Studie PEGASUS: dlouhodobá duální antiagregace po infarktu myokardu – ticagrelor + ASA

prof. MUDr. Jindřich Špinar, CSc., FESC | prof. MUDr. Lenka Špinarová, Ph.D., FESC |

prof. MUDr. Jiří Vítověc, CSc., FESC | doc. MUDr. Ondřej Ludka, Ph.D.

Interní kardiologická klinika, FN Brno, LF MU a ICRC

I. interní kardioangiologická klinika, FN u svaté Anny, LF MU, Brno

- 1 Penka, M.: Antikoagulační a antiagregační léčba – základní principy. *Kardiol Rev*, 2012, 14, s. 63–67.
- 2 Penka, M.: Máme dnes lepší antitrombotika? *Kardiol Rev*, 2012, 14, s. 62.
- 3 Bultas, J.: Ticagrelor. *Remedia*, 2011, 21, s. 116–125.
- 4 Scirica, B. M. – Vannon, Ch. P. – Emanuelsson, H., et al.: The incidence of arrhythmias and clinical arrhythmias events in patients with acute coronary syndromes treated with ticagrelor or clopidogrel in the PLATO trial. *JACC*, 2010, 55, s. 1100–1274.
- 5 Špinar, J. – Vítověc, J.: Ticagrelor a studie PLATO. *Kardiologická revue*, 2012, 13, s. 254–257.
- 6 Wallentin, L. – Becker, R. C. – Budaj, A., et al.: Ticagrelor versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med*, 2009, 361, s. 1045–1057.
- 7 Amsterdam, E. A. – Wenger, N. K. – Brindis, R. G., et al.: 2014 AHA/ACC Guideline for the management of patients with non-ST-elevation acute coronary syndromes: Executive summary: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation*, 2014, 130, s. 2354–2394.
- 8 Hamm, C. W. – Bassand, J. P. – Agewall, S., et al.: ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation: The Task Force for the management of acute coronary syndromes (ACS) in patients presenting without persistent ST-segment elevation of the European Society of Cardiology (ESC). *Eur Heart J*, 2011, 32, s. 2999–3054.
- 9 O’Gara, P. T. – Kushner, F. G. – Ascheim, D. D., et al.: 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation*, 2013, 127, s. e362–425.
- 10 Task Force on the management of ST-segment elevation acute myocardial infarction of the European Society of Cardiology (ESC). Steg, P. G. – James, S. K., et al.: ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. *Eur Heart J*, 2012, 33, s. 2569–2619.
- 11 Bonaca, M. P. – Bhatt, D. L. – Cohen, M.: for the PEGASUS investigators: Ticagrelor for long-term secondary prevention of atherosclerotic events in patients with prior myocardial infarction. *NEJM*, 2015.
- 12 Bonaca, M. P. – Bhatt, D. L. – Braunwald, E., et al.: Design and rationale for the prevention of cardiovascular events in patients with prior heart attack using ticagrelor compared to placebo on a background of aspirin—thrombolysis in myocardial infarction 54 (PEGASUS-TIMI 54) trial. *Am Heart J*, 2014, 167, 437,444.e5.
- 13 Mehran, R. – Rao, S. V. – Bhatt, D. L., et al.: Standardized bleeding definitions for cardiovascular clinical trials: A consensus report from the Bleeding Academic Research Consortium. *Circulation*, 2011, 123, s. 2736–2747.
- 14 Bhatt, D. L. – Fox, K. A. – Hacke, W., et al.: Clopidogrel and aspirin versus aspirin alone for the prevention of atherothrombotic events. *N Engl J Med*, 2006, 354, s. 1706–1717.
- 15 Bhatt, D. L. – Flather, M. D. – Hacke, W., et al.: Patients with prior myocardial infarction, stroke, or symptomatic peripheral arterial disease in the CHARISMA trial. *J Am Coll Cardiol*, 2007, 49, s. 1982–1988.
- 16 Mauri, L. – Kereiakes, D. J. – Yeh, R. W., et al.: Twelve or 30 months of dual antiplatelet therapy after drug-eluting stents. *N Engl J Med*, 2014, 371, s. 2155–2166.
- 17 Fihn, S. D. – Gardin, J. M. – Abrams, J., et al.: 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS guideline for the diagnosis and management of patients with stable ischemic heart disease: a report of the American College of Cardiology Foundation/American Heart Association task force on practice guidelines, and the American College of Physicians, American Association for Thoracic Surgery, Preventive Cardiovascular Nurses Association, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. *Circulation*, 2012, 126, s. e354–471.
- 18 Task Force Members, Montalescot, G. – Sechtem, U., et al.: 2013 ESC guidelines on the management of stable coronary artery disease: The Task Force on the management of stable coronary artery disease of the European Society of Cardiology. *Eur Heart J*, 2013, 34, s. 2949–3003.

Faktory ovlivňující tepovou frekvenci – pohled fyziologa

prof. MUDr. Marie Nováková, Ph.D. Fyziologický ústav LF MU, Brně

- 1 Høystad, O. M.: *Historie srdečne*. Nakladatelství Kniha Zlín, Zlín, 2011.
- 2 Hall, I. W. – Menzies, J. A.: *Golden Rules of Physiology*. J. Wright and co. Printers, Stone Bridge, Bristol, 1900.
- 3 Guyton and Hall textbook of medical physiology. 2011, Saunders Elsevier, Philadelphia, USA, 2011.

Vyšetření pulzu

MUDr. Jiří Hlásenský Interní kardiologická klinika LF MU a FN Brno MUDr. Zuzana Mihalová |
prof. MUDr. Jindřich Špinar, CSc. | doc. MUDr. Ondřej Ludka, Ph.D. Interní kardiologická klinika
LF MU a FN Brno, Mezinárodní centrum klinického výzkumu, FN u sv. Anny v Brně

- 1 Špinar, J. – Vítověc, J. – Souček, M., et al.: *Propedeutika a vyšetřování metod vnitřních nemocí*. Praha, Grada, 2008, s. 65–66.
- 2 William, F., et al.: *Přehled lékařské fysiologie*. Czech edition, Praha, Galén, 2008, s. 587–588.
- 3 Tomášková, I. – Souček, R.: Pletysmografie, využití v cévní diagnostice. *Lékařské listy*, 2010, 54, s. 29–31.
- 4 Rajzer, M. W. – Wojciechowska, W. – Klocek, M. – Palka, I., et al.: Comparison of aortic pulse wave velocity measured by three techniques: Complior, SphygmoCor and Arteriograph. *J Hypertens*, 2008, 26, s. 2001–2007.
- 5 Baguet, J. P. – Kingwell, B. A. – Dart, A. L., et al.: Analysis of the regional pulse wave velocity by Doppler: methodology and reproducibility. *J Hum Hypertens*, 2003, 17, s. 407–412.
- 6 Pannier, B. M. – Avolio, A. P. – Hoeks, A., et al.: Methods and devices for measuring arterial compliance in humans. *Am J Hypertens*, 2002, 15, s. 743–753.
- 7 Koen, M. – Verdonck, P.: Development and modelling of arterial applanation tonometry: A review. *Technol Health Care*, 2002, 10, s. 65–76.
- 8 O'Rourke, M. F. – Gallagher, D. E.: Pulse wave analysis. *J Hypertens Suppl*, 1996, 14, s. S147–S157.
- 9 Schnabel, T. G. JR. – Fitzpatrick, H. F. – Peterson, L. H., et al.: A technic of vascular catheterization with small plastic catheters its utilization to measure the arterial pulse wave velocity in man. *Circulation*, 1952, 5, s. 257–262.

Jaká je optimální srdeční frekvence u nemocných se sinusovým rytmem?

prof. MUDr. Jaromír Hradec, CSc., FESC III. interní klinika 1. LF UK a VFN, Praha

- 1 Gillman, M. W. – Kandel, W. B. – Belanger, A. – D'Agostino, R. B.: Influence of heart rate on mortality among persons with hypertension: the Framingham Study. *Am Heart J*, 1993, 125, s. 1148–1154.
- 2 Singh, B. N.: Morbidity and mortality in cardiovascular disorders: Impact of reduced heart rate. *J Cardiovasc Pharmacol Therapeut*, 2001, 6, s. 313–331.
- 3 Diaz, A. – Bourassa, M. G. – Guertin, M. C. – Tardiff, J. C.: Long-term prognostic value of resting heart rate in patients with suspected or proven coronary artery disease. *Eur Heart J*, 2005, 26, s. 967–974.
- 4 Levine, H. J.: Rest heart rate and life expectancy. *J Am Coll Cardiol*, 1997, 30, s. 1104–1106.
- 5 Cook, S. – Togni, M. – Schaub, M. C. – Wenaweser, P. – Hess, O. M.: High heart rate: a cardiovascular risk factor? *Eur Heart J*, 2006, 27, s. 2387–2393.
- 6 Boraso, A.: Why is reduced heart rate beneficial? *Dialogues in Cardiovascular Medicine*, 2001, 6, s. 19–24.
- 7 Fox, K.: Future perspectives of If inhibition in various cardiac conditions. *Eur Heart J*, 2005, 7 (dopl. H), s. H33–H36.
- 8 Palatinis, P. – Benetos, A. – Grossi, G., et al.: Identification and management of the hypertensive patient with elevated heart rate: statement of a European Society of Hypertension Consensus Meeting. *J Hyper*, 2006, 24, s. 603–610.
- 9 Copie, X. – Hnatkova, K. – Stouton, A., et al.: Predictive power of increased heart rate versus depressed left ventricular ejection fraction and heart rate variability for risk stratification after myocardial infarction. *J Am Coll Cardiol*, 1996, 27, s. 270–276.
- 10 Jouven, X. – Empona, J. P. – Schwartz, P. J., et al.: Heart rate profile during exercise as a predictor of sudden death. *N Engl J Med*, 2005, 352, s. 1951–1958.
- 11 Kandel, W. B. – Kandel, C. – Paffenbarger, R. S. Jr. – Cupples, L. A.: Heart rate and cardiovascular mortality: the Framingham Study. *Am Heart J*, 1987, 113, s. 1489–1494.
- 12 Conroy, R. M. – Pyorala, K. – Fitzgerald, A. P., et al.: Estimation of ten-year risk of fatal cardiovascular disease in Europe: the SCORE project. *Eur Heart J*, 2003, 24, s. 987–1003.
- 13 Kjekshus, J. K.: Importance of heart rate in determining beta-blocker efficacy in acute and long-term acute myocardial infarction intervention trials. *Am J Cardiol*, 1986, 57, s. 43F–49F.
- 14 Hjalmarson, A.: Significance of reduction in heart rate in cardiovascular disease. *Clin Cardiol*, 1998, 21, s. II3–II7.
- 15 Tarif, J. C. – Ford, I. – Tendera, M., et al.: Efficacy of ivabradine, a new selective (If) inhibitor, compared with atenolol in patients with chronic stable angina. *Eur Heart J*, 2005, 26, s. 2529–2536.
- 16 Fox, K. – Ford, I. – Steg, P. G., et al.: Ivabradine in patients with stable coronary artery disease and left ventricular dysfunction (BEAUTIFUL): a randomized, double-blind, placebo-controlled trial. *Lancet*, 2008, 372, s. 807–816.
- 17 Fox, K. – Ford, I. – Steg, P. G., et al.: Relationship between ivabradine treatment and cardiovascular outcomes in patients with stable coronary artery disease and left ventricular systolic dysfunction with limiting angina: a subgroup analysis of the randomized, controlled BEAUTIFUL trial. *Eur Heart J*, 2009, 30, s. 2337–2345.
- 18 Fox, K. – Ford, I. – Steg, P. G., et al.: Ivabradine in stable coronary artery disease without clinical heart failure. *N Engl J Med*, 2014, 371, s. 1091–1099.
- 19 Swedberg, K. – Komajda, M. – Böhm, M., et al.: Ivabradine and outcomes in chronic heart failure (SHIFT): a randomised placebo-controlled trial. *Lancet*, 2010, 376, s. 875–885.
- 20 Böhm, M. – Swedberg, K. – Komajda, M., et al.: on behalf of the SHIFT Investigators: Heart rate as a risk factor in chronic heart failure (SHIFT): the association between heart rate and outcomes in a randomized placebo-controlled trial. *Lancet*, 2010, 376, s. 886–894.
- 21 Böhm, M. – Borer, J. – Ford, I., et al.: Heart rate at baseline influences the effect of ivabradine on cardiovascular outcomes in chronic heart failure: analysis from the SHIFT study. *Clin Res Cardiol*, 2013, 102, s. 11–22.

Optimální tepová frekvence u nemocných s fibrilací síní

doc. MUDr. Martin Fiala, Ph.D.

Interní kardiologická klinika, FN Brno, Oddělení kardiologie, Nemocnice Podlesí, a. s., Třinec

- 1 Wyse, D. G. – Waldo, A. L. – DiMarco, J. P., et al.: A comparison of rate control and rhythm control in patients with atrial fibrillation. *N Engl J Med*, 2002, 347, s. 1825–1833.
- 2 Van Gelder, I. C. – Hagens, V. E. – Bosker, H. A., et al.: A comparison of rate control and rhythm control in patients with recurrent persistent atrial fibrillation. *N Engl J Med*, 2002, 347, s. 1834–1840.
- 3 Hohnloser, S. H. – Kuck, K. H. – Lilienthal, J., et al.: Rhythm or rate control in atrial fibrillation – Pharmacological Intervention in Atrial Fibrillation (PIAF): a randomized trial. *Lancet*, 2000, 356, s. 1789–1794.
- 4 Carlsson, J. – Miketic, S. – Windeler, J. J., et al.: Randomized trial of rate versus rhythm-control in persistent atrial fibrillation. The Strategies of Treatment of Atrial Fibrillation (STAF) study. *J Am Coll Cardiol*, 2003, 24, s. 1430–1436.
- 5 Grönfeld, G. C. – Lilienthal, J. – Kuck, K. H., et al.: Impact of rate versus rhythm control on quality of life in patients with persistent atrial fibrillation: results from a prospective randomized study. *Eur Heart J*, 2003, 24, s. 1430–1436.
- 6 The AFFIRM Investigators: Relationships between sinus rhythm, treatment, and survival in the Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) study. *Circulation*, 2004, 109, s. 1509–1513.
- 7 Grönfeld, G. C. – Lilienthal, J. – Kuck, K. H., et al. for the Pharmacological Intervention in Atrial Fibrillation (PIAF) Study Investigators: Impact of rate versus rhythm control on quality of life in patients with persistent atrial fibrillation. Results from a prospective randomized study. *Eur Heart J*, 2003, 24, s. 1430–1436.
- 8 Hagens, V. E. – Ranchor, A. V. – Sonderen, E. V., et al. for the RACE Study Group: Effect of rate or rhythm control on quality of life in persistent AF. *J Am Coll Cardiol*, 2004, 43, s. 241–247.
- 9 Singh, S. N. – Tang, X. C. – Singh, B. N., et al. for SAFE-T Investigators: Quality of life and exercise performance in patients in sinus rhythm versus persistent atrial fibrillation: a Veterans Affairs Cooperative Studies Program Substudy. *J Am Coll Cardiol*, 2006, 48, s. 721–730.
- 10 Lip, G. Y. H. – Laroche, C. – Ioachim, P. M., et al.: Prognosis and treatment of atrial fibrillation patients by European cardiologists: One Year Follow-up of the EURObservational Research Programme-Atrial Fibrillation General Registry Pilot Phase (EORP-AF Pilot registry). *Eur Heart*, 2014, doi:10.1093/eurheartj/ehu415.
- 11 Levy, S. – Maarek, M. – Coumel, P., et al.: Characterization of different subsets of atrial fibrillation in general practice in France. The ALFA Study. *Circulation*, 1999, 99, s. 3028–3035.
- 12 Le Heuzey, J. Y. – Paziaud, O. – Piot, O., et al.: Cost of care distribution in atrial fibrillation patients: The COCAF Study. *Am Heart J*, 2004, 147, s. 121–126.
- 13 Oral, H. – Chugh, A. – Özaydin, M., et al.: Risk of thromboembolic events after percutaneous left atrial radiofrequency ablation of atrial fibrillation. *Circulation*, 2006, 114, s. 759–765.
- 14 Nademanee, K. – Schwab, M. C. – Kosar, E. M., et al.: Clinical outcomes of catheter ablation for high-risk patients with atrial fibrillation. *J Am Coll Cardiol*, 2008, 51, s. 843–849.
- 15 Themistoklakis, S. – Corrado, A. – Marchlinski, F. E., et al.: The risk of thromboembolism and need for oral anticoagulation after successful atrial fibrillation ablation. *J Am Coll Cardiol*, 2010, 55, s. 735–743.
- 16 Saad, E. B. – d'Avila, A. – Costa, I. P., et al.: Very low risk of thromboembolic events in patients undergoing successful catheter ablation of atrial fibrillation with CHADS2 score ≤ 3: a long-term outcome study. *Circ Arrhythm Electrophysiol*, 2011, 5, s. 615–621.
- 17 Yagishita, A. – Takahashi, Y. – Takahashi, A., et al.: Incidence of late thromboembolic events after catheter ablation of atrial fibrillation. *Circ J*, 2011, 75, s. 2343–2349.
- 18 Hunter, R. J. – McCready, J. – Diab, I., et al.: Maintenance of sinus rhythm with an ablation strategy in patients with atrial fibrillation is associated with a lower risk of stroke and death. *Heart*, 2012, 98, s. 48–53.
- 19 Lin, Y. J. – Chao, T. F. – Tsao, H. M., et al.: Successful catheter ablation reduces the risk of cardiovascular events in atrial fibrillation patients with CHA2DS2-VASc risk score of 1 and higher. *Europace*, 2013, 15, s. 676–684.
- 20 Winkle, R. A. – Mead, R. H. – Engel, G., et al.: Discontinuing anticoagulation following successful atrial fibrillation ablation in patients with prior strokes. *J Interv Card Electrophysiol*, 2013, 38, s. 147–153.
- 21 Bunch, T. J. – May, H. T. – Bair, T. L., et al.: Atrial fibrillation ablation patients have long-term stroke rates similar to patients without atrial fibrillation regardless of CHADS2 score. *Heart Rhythm*, 2013, 10, s. 1272–1277.
- 22 Fiala, M. – Wichterle, D. – Bulková, V., et al.: A prospective evaluation of hemodynamics, functional status, and quality of life after radiofrequency catheter ablation of long-standing persistent atrial fibrillation. *Europace*, 2014, 16, s. 15–25.
- 23 Mohanty, S. – Santangeli, P. – Mohanty, P., et al.: Catheter ablation of asymptomatic longstanding persistent atrial fibrillation: impact on quality of life, exercise performance, arrhythmia perception, and arrhythmia-free survival. *J Cardiovasc Electrophysiol*, 2014, 25, s. 1057–1064.
- 24 Bulková, V. – Fiala, M. – Havránek, S., et al.: Improvement in quality of life after catheter ablation for paroxysmal versus long-standing persistent atrial fibrillation: A prospective study with 3-year follow-up. *J Am Heart Assoc*, 2014; 3:e000881.
- 25 Sacher, F. – Corcuff, J. B. – Schraub, P., et al.: Chronic atrial fibrillation ablation impact on endocrine and mechanical cardiac functions. *Eur Heart J*, 2008, 29, s. 1290–1295.
- 26 Jones, D. J. – Haldar, S. K. – Hussain, W., et al.: A randomized trial to assess catheter ablation versus rate control in the management of persistent atrial fibrillation in heart failure. *J Am Coll Cardiol*, 2013, 61, s. 1894–1903.
- 27 Hunter, R. J. – Berriman, T. J. – Diab, I., et al.: A randomized controlled trial of catheter ablation versus medical treatment of atrial fibrillation in heart failure (the CAMTAF Trial). *Circ Arrhythm Electrophysiol*, 2014, 7, s. 31–38.
- 28 Hsu, L. F. – Jaïs, P. – Sanders, P., et al.: Catheter ablation for atrial fibrillation in congestive heart failure. *N Engl J Med*, 2004, 351, s. 2373–2383.
- 29 Van Gelder, I. C. – Groenveld, H. F. – Crijns, H. J., et al.: Lenient versus strict rate control in patients with atrial fibrillation. *N Engl J Med*, 2010, 362, s. 1363–1373.
- 30 Smit, M. D. – Crijns, H. J. – Tijssen, J. G., et al. for RACE II Investigators: Effect of lenient versus strict rate control on cardiac remodeling in patients with atrial fibrillation: data of the RACE II (Rate Control Efficacy permanent atrial fibrillation II) study. *J Am Coll Cardiol*, 2011, 58, s. 942–949.
- 31 Mulder, B. A. – Van Veldhuisen, D. J. – Crijns, H. J., et al. for RACE II Investigators: Lenient vs. strict rate control in patients with atrial fibrillation and heart failure: a post-hoc analysis of the RACE II study. *Eur J Heart Fail*, 2013, 15, s. 1311–1318.

Kontrola rytmu/frekvence u nemocných s fibrilací síní

MUDr. Ondřej Toman, Ph.D. Interní kardiologická klinika FN Brno a LF MU, Brno

- 1 Go, A. S. – Hylek, E. M. – Philips, K. A., et al.: Prevalence of diagnosed atrial fibrillation in adults: national implications for rhythm management and stroke prevention: the Anticoagulation and Risk Factors in Atrial Fibrillation (ATRIA) Study. *JAMA*, 2001, 285, s. 2370–2375.
- 2 Čihák, R. – Heinc, P. – Haman, L., et al.: Fibrilace síní, Guidelines ČKS. *Cor et Vasa*, 2011, 53, s. 27–52.
- 3 Camm, A. J. – Lip, G. Y. H. – De Caterina, R., et al.: 2012 focused update of the ESC guidelines for the management of atrial fibrillation. *Eur Heart J*, 2012, 33, s. 2719–2747.
- 4 January, C. T. – Wann, L. S. – Alpert, J. S., et al.: 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. *Circulation*, 2014, 130, s. e199–e267.
- 5 Van Gelder, I. C. – Groenveld, H. F. – Crijns, H. J., et al.: Lenient versus strict rate control in patients with atrial fibrillation. *N Engl J Med*, 2010, 362, s. 1363–1373.
- 6 Morillo, C. – Verma, A. – Kuck, K., et al.: Radiofrequency ablation vs antiarrhythmic drugs as first-line treatment of paroxysmal atrial fibrillation (RAAFT 2): a randomized trial. *JAMA*, 2014, 311, s. 692–700.
- 7 Covedis, N. J. – Johannessen, A. – Raatikainen, P., et al.: Radiofrequency ablation as initial therapy in paroxysmal atrial fibrillation. *N Engl J Med*, 2012, 367, s. 1587–1595.
- 8 Wyse, D. G. – Waldo, A. L. – DiMarco, J. P., et al.: A comparison of rate control and rhythm control in patients with atrial fibrillation. *N Engl J Med*, 2002, 347, s. 1825–1833.
- 9 Van Gelder, I. C. – Hagens, V. E. – Bosker, H. A., et al.: A comparison of rate control and rhythm control in patients with recurrent persistent atrial fibrillation. *N Engl J Med*, 2002, 347, s. 1834–1840.
- 10 Hohnloser, S. H. – Kuck, K. H. – Lillenthal, J., et al.: Rhythm or rate control in atrial fibrillation—Pharmacological Intervention in Atrial Fibrillation (PIAF): a randomized trial. *Lancet*, 2000, 356, s. 1789–1794.
- 11 Carlsson, J. – Miketic, S. – Windeler, J. J., et al.: Randomized trial of rate versus rhythm-control in persistent atrial fibrillation. The Strategies of Treatment of Atrial Fibrillation (STAF) study. *J Am Coll Cardiol*, 2003, 42, s. 1430–1436.
- 12 Ogawa, S. – Yamashita, T. – Yamazaki, T., et al.: Optimal treatment strategy for patients with paroxysmal atrial fibrillation: JRHYTHM study. *Circ J*, 2009, 73, s. 242–248.
- 13 The AFFIRM Investigators: Relationships between sinus rhythm, treatment, and survival in the Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) study. *Circulation*, 2004, 109, s. 1509–1513.
- 14 Roy, D. – Talajic, M. – Nattel, S., et al.: Rhythm control versus rate control for atrial fibrillation and heart failure. *N Engl J Med*, 2008, 358, s. 2667–2677.
- 15 Caldeira, D. – David, C. – Sampaio, C.: Rate vs rhythm control in patients with atrial fibrillation and heart failure: a systematic review and meta-analysis of randomised controlled trials. *Eur J Intern Med*, 2011, 22, s. 448–455.
- 16 Chen, S. – Dong, Y. – Fan, J. – Yin, Y.: Rate vs. rhythm control in patients with atrial fibrillation—an updated meta-analysis of 10 randomized controlled trials. *Int J Cardiol*, 2011, 153, s. 96–98.
- 17 Camm, A. J. – Breithardt, G. – Crijns, H., et al.: Real-life observations of clinical outcomes with rhythm- and rate-control therapies for atrial fibrillation RECORDAF (Registry on Cardiac Rhythm Disorders Assessing the Control of Atrial Fibrillation). *J Am Coll Cardiol*, 2011, 58, s. 493–501.
- 18 Steinberg, B. A. – Holme, D. N. – Ezekowitz, M. D., et al.: Rate versus rhythm control for management of atrial fibrillation in clinical practice: results from the Outcomes Registry for Better Informed Treatment of Atrial Fibrillation (ORBIT-AF) registry. *Am Heart J*, 2013, 165, s. 622–629.
- 19 Ionescu-Ittu, R. – Abrahamowicz, M. – Jackevicius, C. A., et al.: Comparative effectiveness of rhythm control vs rate control drug treatment effect on mortality in patients with atrial fibrillation. *Arch Intern Med*, 2012, 172, s. 997–1004.
- 20 Connolly, S. J. – Camm, A. J. – Halperin, J. L., et al.: Dronedarone in high-risk permanent atrial fibrillation. *N Engl J Med*, 2011, 365, s. 2268–2276.
- 21 Stabile, G. – Bertaglia, E. – Senatore, G., et al.: Catheter ablation treatment in patients with drug-refractory atrial fibrillation: a prospective, multi-centre, randomized, controlled study (Catheter Ablation for the Cure of Atrial Fibrillation Study). *Eur Heart J*, 2006, 27, s. 216–221.
- 22 Jais, P. – Cauchemez, B. – Macle, L., et al.: Catheter ablation versus antiarrhythmic drugs for atrial fibrillation: the A4 study. *Circulation*, 2008, 118, s. 2498–2505.
- 23 Pappone, C. – Augello, S. – Gugliotta, F., et al.: A randomized trial of circumferential pulmonary vein ablation versus antiarrhythmic drug therapy on paroxysmal atrial fibrillation: the APAF Study. *J Am Coll Cardiol*, 2006, 48, s. 2340–2347.
- 24 Hsu, L. F. – Jais, P. – Sanders, P., et al.: Catheter ablation for atrial fibrillation in congestive heart failure. *N Engl J Med*, 2004, 351, s. 2373–2383.
- 25 Fiala, M. – Wichterle, D. – Bulková, V., et al.: A prospective evaluation of hemodynamics, functional status, and quality of life after radiofrequency catheter ablation of long-standing persistent atrial fibrillation. *Europace*, 2014, 16, s. 15–25.
- 26 Mohanty, S. – Santangeli, P. – Mohanty, P., et al.: Catheter ablation of asymptomatic longstanding persistent atrial fibrillation: impact on quality of life, exercise performance, arrhythmia perception, and arrhythmia-free survival. *J Cardiovasc Electrophysiol*, 2014, 25, s. 1057–1064.
- 27 Bulková, V. – Fiala, M. – Havránek, S., et al.: Improvement in quality of life after catheter ablation for paroxysmal versus long-standing persistent atrial fibrillation: A prospective study with 3-year follow-up. *J Am Heart Assoc*, 2014, 3, s. e000881.
- 28 Jones, D. J. – Haldar, S. K. – Hussain, W., et al.: A randomized trial to assess catheter ablation versus rate control in the management of persistent atrial fibrillation in heart failure. *J Am Coll Cardiol*, 2013, 61, s. 1894–1903.
- 29 Hunter, R. J. – Berriman, T. J. – Diab, I., et al.: A randomized controlled trial of catheter ablation versus medical treatment of atrial fibrillation in heart failure (the CAMTAF Trial). *Circ Arrhythm Electrophysiol*, 2014, 7, s. 31–38.
- 30 Bunch, T. J. – Crandall, B. G. – Weiss, J. P., et al.: Patients treated with catheter ablation for atrial fibrillation have long-term rates of death, stroke, and dementia similar to patients without atrial fibrillation. *J Cardiovasc Electrophysiol*, 2011, 22, s. 839–845.

Indikace klasické kardiostimulace

doc. MUDr. Miroslav Novák, CSc. I. interní kardioangiologická klinika, FN u sv. Anny a LF MU, Brno

- 1 2013 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy. *Eur Heart J*, 2013, 34, s. 2281–2329.*
- 2 Táborský, M. – Kautzner, J.: Summary of the 2013 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy: Prepared by the Czech Society of Cardiology. *Cor et Vasa*, 2013, 55, s. e57–e74.
- * Další literatura, z níž guidelines a tato práce vycházejí, je uvedena v originálním dokumentu ESC v plném znění.

Indikace resynchronizační terapie

MUDr. Jitka Vlašínová Ph.D. Interní kardiologická klinika, FN Brno

- 1 Gottipati, V. – Krelis, S. – Lu, F., et al.: Vesnarinone Study (VEST study analysis). *JACC*, 1999, 33, s. 145, abstrakt 847–854.
- 2 Gras, D. – Böcker, D. – Lunati, M., et al.: On behalf of The CARE-HF Study Steering Committee and Investigators. Implantation of cardiac resynchronization therapy systems in the CARE-HF trial: procedural success rate and safety. *Europace*, 2007, 9, s. 516–522.
- 3 Bristow, M. R. – Saxon, L. A. – Boehmer, J., et al.: Comparison of Medical Therapy, Pacing, and Defibrillation in Heart Failure (COMPANION) Investigators. Cardiac-resynchronization therapy with or without an implantable defi brillator in advanced chronic heart failure. *N Engl J Med*, 2004, 350, s. 2140–2150.
- 4 Daubert, C. – Gold, M. R. – Abraham, W. T., et al.: Prevention of disease progression by cardiac resynchronization therapy in patients with asymptomatic or mildly symptomatic left ventricular dysfunction: insights from the European cohort of the REVERSE (Resynchronization Reverses Remodeling in Systolic Left Ventricular Dysfunction) trial. *J Am Coll Cardiol*, 2009, 54, s. 1837–1846.
- 5 Tang, A. S. – Wells, G. A. – Talajic, M., et al.: Resynchronization-Defibrillation for Ambulatory Heart Failure Trial (RAFT) Investigators. Cardiac-resynchronization therapy for mild-to-moderate heart failure. *N Engl J Med*, 2010, 363, s. 2385–2395.
- 6 Thibault, B. – Harel, F. – Ducharme, A., et al.: Cardiac resynchronization therapy in patients with heart failure and a QRS complex < 120 milliseconds: the evaluation of resynchronization therapy for heart failure (LESSER-EARTH) trial. *Circulation*, 2013, 127, s. 873–881.
- 7 Zareba, W. – Klein, H. – Cygankiewicz, I., et al.: Effectiveness of cardiac resynchronization therapy by morphology in the multicenter automatic defibrillator implantation trial—cardiac resynchronization therapy (MADIT-CRT). *Circulation*, 2011, 123, s. 1061–1072.
- 8 Sedláček, K. – Kautzner, J.: Indikace srdeční resynchronizační terapie ve světle nedávných velkých studií a analýz specifických podskupin pacientů. *Interv Akut Kardiol*, 2012, 11, s. 22–27.
- 9 Varma, N. – Manne, M. – Nguyen, D. – He, J. – Niebauer, M. – Tchou, P.: Probability and magnitude of response to cardiac resynchronization therapy according to QRS duration and gender in nonischemic cardiomyopathy and LBBB. *Heart Rhythm*, 2014, 11, s. 1139–1147.
- 10 Táborský, M. – Kautzner, J. – Bytešník, J., et al.: Zásady pro implantaci kardiostimulátorů, implantabilních kardioverteřer-defibrilátorů a srdceční resynchronizační léčbu. *Cor Vasa*, 2005, 47 (dopl. 9), s. 59–68.
- 11 Táborský, M. – Kautzner, J. – Bytešník, J., et al.: Zásady pro implantaci kardiostimulátorů, implantabilních kardioverteřer-defibrilátorů a systémů pro srdeční resynchronizační léčbu 2009. *Cor Vasa*, 2009, 51, s. 602–618.
- 12 Hradec, J. – Vítovcov, J. – Špinar, J.: Summary of the ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012. Prepared by the Czech Society of Cardiology. *Cor et Vasa*, 2013, 55, s. e25–e40.
- 13 Táborský, M. – Kautzner, J.: Summary of the 2013 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy: Prepared by the Czech Society of Cardiology. *Cor et Vasa*, 2013, 55, s. e57–e7414.
- 14 Hayes, D. – Boehmer, J. – Day, J., et al.: Cardiac resynchronization therapy and the relationship of percent biventricular pacing to symptoms and surfoval. *Heart Rhythm*, 2011, 8, s. 1469–1475.

Moderní trendy v léčbě hypertenze

prof. MUDr. Hana Rosolová, DrSc.

Centrum preventivní kardiologie, II. interní klinika LF a FN, Plzeň, UK, Praha

- 1 Rosolová, H. – Šimor, J. – Šetrná, F.: Insulin resistance and hypertension in the Czech population. *Europ Hear J*, 1996, 17, s. 344 (P1897).
- 2 Dahlhof, B. – Sever, P. S. – Poulter, N. R., et al.: Prevention of cardiovascular events with an antihypertensive regimen of amlodipine adding perindopril as required versus atenolol adding bendroflumethiazide as required, in the Anglo-Scandinavian Cardiac Outcomes Trial – Blood Pressure Lowering Arm (ASCOT – BPLA): a multicenter randomized controlled trial. *Lancet*, 2005, 366, s. 895–906.
- 3 Filipovský, J. – Widimský, J. jun. – Ceral, J., et al.: Diagnostická a léčebné postupy u arteriální hypertenze – verze 2012. Doporučení České společnosti pro hypertenze. *Vnitř Lék*, 2012, 58, s. 785–801.
- 4 Wald, D. S. – Law, M. – Morfia, J. K., et al.: Combination therapy versus monotherapy in reducing blood pressure: meta-analysis on 11,000 participants from 42 trials. *Am J Med*, 2009, 122, s. 290–300.
- 5 Bangalore, S. – Kamalakkannan, G. – Parkar, S. – Nessel, F. H.: Fixed-dose combinations improve medication compliance: a meta-analysis. *Am J Med*, 2007, 120, s. 713–719.
- 6 ADVANCE Collaborative Group: Effects of a fixed combination of perindopril and indapamide on macrovascular and microvascular outcomes in patients with type 2 diabetes mellitus (the ADVANCE trial): a randomised controlled trial. *Lancet*, 2007, 370, s. 829–840.
- 7 Chalmers, J. – Arima, H. – Woodward, M., et al.: Effects of combination of perindopril, indapamide, and calcium channel blockers in patients with type 2 diabetes mellitus. Results from the ADVANCE Trial. *Hypertension*, 2014, 63, s. 259–264.
- 8 Toth, K.: Antihypertensive efficacy of triple-combination perindopril-indapamide plus amlodipine in high risk hypertensive patients (PIANIST study). *Am J Cardiovasc Drugs*, 2014, 14, s. 137–145.

Bigital 5 – lékový profil

MUDr. Jiří Slíva, MD., Ph.D. Ústavy farmakologie 2. a 3. LF UK, Praha

- 1 Mancia, G. – De, B. G. – Dominicak, A., et al.: 2007 Guidelines for the management of arterial hypertension: The Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *Eur Heart J*, 2007, 28, s. 1462–1536.
- 2 Mancia, G. – Laurent, S. – Agabiti-Rosei, E., et al.: Reappraisal of European guidelines on hypertension management: a European Society of Hypertension Task Force document. *J Hypertens*, 2009, 27, s. 2121–2158.
- 3 Murdoch, D. – Heel, R. C.: Amlodipine. A review of its pharmacodynamic and pharmacokinetic properties, and therapeutic use in cardiovascular disease. *Drugs*, 1991, 41, s. 478–505.
- 4 Rana, R. – Patil, A.: Efficacy and safety of bisoprolol plus amlodipine fixed-dose combination in essential hypertension. *The Ind Pract*, 2008, 61, s. 225–234.

Diureтика v léčbě hypertenze

doc. MUDr. Jiří Špáč, CSc. II. Interní klinika, MU, FN u sv. Anny v Brně

- 1 Schini, V. B. – De Mey, J. – Vanhoutte, P. M.: Effect of indapamide on endothelium-dependent relaxations in isolated canine femoral arteries. *Am J Cardiol*, 1990, 65, s. 7H–10H.
- 2 Seidlerová, J.: Fixní kombinace perindopril/indapamid u nemocných s renální insuficíencí. *Med Praxi*, 2014, 115, 282–283.
- 3 Ernst, M. E. – Carter, B. L. – Goerd, C. J. – Steffensmeier, J. J. G. – Philips, B. B. – Zimmermann, M. B. – Bergus, G. R.: Comparative antihypertensive effects of hydrochlorothiazide and chlorthalidone on ambulatory and office blood pressure. *Hypertension*, 2006, 47, s. 352–358.
- 4 Carter, B. L. – Ernst, M. E. – Cohen, J. D.: Hydrochlorothiazide versus chlorthalidone. Evidence supporting their interchangeability. *Hypertension*, 2004, 43, s. 4–9.
- 5 Messerli, F. H. – Makani, H. – Benjo, A., et al.: Antihypertensive efficacy of hydrochlorothiazide as evaluated by ambulatory blood pressure monitoring: a meta-analysis of randomized trials. *JACC*, 2011, 57, s. 590–600.
- 6 London, G., et al.: Indapamide SR versus candesartan and amlodipine in hypertension: the X-CELLENT Study. *Am J Hypertens*, 2006, 19, s. 113–121.
- 7 Baguet, J.-P. – Robitail, S. – Boyer, L., et al.: A meta-analytical approach to the efficacy of antihypertensive drugs in reducing blood pressure. *Am J Cardiovasc Drugs*, 2006, 5, s. 131–140.
- 8 Gambardella, S. – Frontoni, S. – Lala, A. – Felici, M. G. – Spallone, V., et al.: Regression of microalbuminuria in type II diabetic, hypertensive patients after long-term indapamide treatment. *Am Heart J*, 1991, 122, s. 1232–1238.
- 9 Donnelly, R. – Molyneaux, L. M. – Willey, K. A. – Yue, D. K.: Comparative effects of indapamide and captopril on blood pressure and albumin excretion rate in diabetic microalbuminuria. *Am J Cardiol*, 1996, 77, s. 26B–30B.
- 10 PATS Collaborating Group. Post-stroke Antihypertensive Treatment Study. A preliminary result. *Chin Med J*, 1995, 108, s. 710–717.
- 11 Patel, A.: ADVANCE Collaborative Group, et al.: Effects of a fixed combination of perindopril and indapamide on macrovascular and microvascular outcomes in patients with type 2 diabetes mellitus (the ADVANCE trial): a randomised controlled trial. *Lancet*, 2007, 370, s. 829–840.
- 12 Lancia, G. – Parodi, A. – Merlini, L. – Corrao, G.: Heterogeneity in antihypertensive treatment discontinuation between drugs belonging to the same class. *J Hypertens*, 2011, 29, s. 1012–1018.

Kdy a jak určovat kardiovaskulární riziko? Lépe dříve nežli později...

doc. MUDr. Michal Vrablík, Ph.D. | PharmDr. Zdeněk Chmelík

III. interní klinika – klinika endokrinologie a metabolismu, LF UK a VFN, Praha

RNDr. Věra Lánská, CSc. Institut klinické a experimentální medicíny

- 1 Černý, J. – Hradec, J. – Roztočil, K.: Národní kardiovaskulární program, 2000, dostupné z: <http://www.kardio.cz/cz>, vyhledáno 12. 11. 2014.
- 2 Hopkins, P. N. – Williams, R. R.: Identification and relative weight of cardiovascular risk factors. *Cardiol Clin*, 1986, 4, s. 3–31.
- 3 Fait, T. – Vrablík, M. – Češka, R., et al.: Preventivní medicína. Praha, Maxdorf Jesenius, 2011, s. 162.
- 4 Zethelius, B. – Berglund, L. – Sundström, J., et al.: Use of multiple biomarkers to improve the prediction of death from cardiovascular causes. *N Engl J Med*, 2008, 358, s. 2107–2116.
- 5 Yusuf, S. – Hawken, S. – Ounpuu, S.: INTERHEART Study Investigators. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. *Lancet*, 2004, 364, s. 937–952.
- 6 Fruchart, J. C. – Sacks, F. M. – Hermans, M. P., et al.: The residual risk initiative: a call to action to reduce residual vascular risk in dyslipidaemic patients. *Diabetes Vasc Dis Res*, 2008, 5, s. 319–335.
- 7 Perk, J. – De Backer, G. – Gohlke, H., et al.: European Guidelines on cardiovascular disease prevention in clinical practice (version 2012); The Fifth Joint Task Force of the ESC and other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of nine societies and by invited experts). *Eur Heart J*, 2012, doi:10.1093/eurheartj/ehs092.
- 8 Catapano, A. L. – Reiner, Z. – Backer, G. D., et al.: ESC/EAS Guidelines for the management of dyslipidaemias The Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS). *Atherosclerosis*, 2011, 217, s. 3–46.
- 9 Čípková, R. – Škodová, Z. – Bruthans, J., et al.: Longitudinal trends in cardiovascular risk factors in the Czech population between 1985 and 2007/8. Czech MONICA and Czech post-MONICA. *Atherosclerosis*, 2011 (2010), s. 676–681.
- 10 Mayer, O. Jr. – Bruthans, J. – Timoracká, K.: On behalf of Czech EUROASPIRE I–IV Investigators, The changes in cardiovascular prevention practice between 1995 and 2012 in the Czech Republic. A comparison of EUROASPIRE I, II, III and IV study. *Cor et Vaso*, 2014, 56, s. e91–e97.

- 11 Péče o nemocné cukrovkou 2012. ÚZIS 2013, dostupné z: www.uzis.cz.
- 12 Filipovský, J. – Widimský, J. Jr. – Ceral, J. – Cífková, R. – Horký, K. – Linhart, A., et al.: Diagnostické a léčebné postupy u arteriální hypertenze – verze 2012. Doporučení České společnosti pro hypertenzi. *Vnitř Lék*, 2012, 58, s. 785–801.
- 13 Cífková, R. – Horký, K. – Widimský, J. Sen.: Doporučení diagnostických a léčebných postupů u arteriální hypertenze – verze 2014. Doporučení České společnosti pro hypertenzi. *Vnitř Lék*, 2014, 50, s. 709–722.
- 14 Bruthans, J. – Cífková, R. – Lánská, V., et al.: Explaining the decline in coronary heart disease mortality in the Czech Republic between 1985 and 2007. *Eur J Prev Cardiol*, 2012, 21, s. 829–839.
- 15 Vrabík, M., et al.: Otazníky kardiovaskulární prevence 2009. FAMA, Brno, 2009, s. 189.
- 16 Cífková, R., et al.: Prevence kardiovaskulárních onemocnění v dospělém věku. *Supplementum Cor Vasa*, 2005, 47, s. 3–14.
- 17 ÚZIS Evropské výběrové šetření o zdravotním stavu v ČR – EHIS CR Index tělesné hmotnosti, fyzická aktivity, spotřeba ovoce a zeleniny. Aktuální informace 70, 2010, vyhledáno 12. 11. 2014, dostupné z: www.uzis.cz/rychle-informace/evropske-vyberova-setreni-zdravotnim-stavu-cr-ehis-cr-index-telesne-hmotnosti-fyzic.
- 18 Rosa, J. – Zelinka, T. – Petrak, O., et al.: Importance of thorough investigation of resistant hypertension before renal denervation: should compliance to treatment be evaluated systematically? *Journal of Human Hypertension*, 2014, 28, s. 684–688.
- 19 Vrabík, M.: Adherence a jak ji ovlivnit. *Med Prax*, 2013, 10, s. 364–366.
- 20 Soška, V. – Váverková, H. – Vrabík, M., et al.: stanovisko výboru ČSAT k doporučením ESC/EAS pro diagnostiku a léčbu dyslipidemií z roku 2011. *DMEV*, 2013, 16, s. 24–29.
- 21 Pitka, J., et al.: Vliv pozitivní rodinné anamnézy na věk manifestace akutního koronárního syndromu a na kardiovaskulární rizikové faktory u žen. 17. výroční sjezd ČKS, 10.–13. 5. 2009, Brno. *Cor et Vasa* (dopl. 1), 2009.

Glukagon a efektivita inkretinové terapie

MUDr. Marek Honka Lestela Hlučín, s. r. o.

- 1 Unger, R. H. – Orci, L.: The essential role of glucagon in pathogenesis of diabetes mellitus. *Lancet*, 1975, 1, s. 14–16.
- 2 Miller, W. A. – Falkony, G. R. – Unger, R. H.: Hyperglucagonemia in diabetic ketoacidosis. Its prevalence and significance. *Am J Med*, 1973, 54, s. 52–57.
- 3 Mitraou, A. – Ryan, C. – Veneman, T., et al.: Hierarchy of glycemic thresholds for counterregulatory hormone secretion, symptoms, and cerebral dysfunction. *Am J Physiol*, 1991, 260, s. E67–E74.
- 4 Larsson, H. – Ahrén, B.: Islet dysfunction in insulin resistance involves impaired insulin secretion and increased glucagon secretion in postmenopausal women with impaired glucose tolerance. *Diabetes Care*, 2000, 23, s. 650–657.
- 5 Ahrén, B. – Veith, R. C. – Taborsky, G. J. Jr.: Sympathetic nerve stimulation versus pancreatic norepinephrine infusion in the dog: Effects on basal release of insulin and glucagon. *Endocrinology*, 1987, 121, s. 323–331.
- 6 Ahrén, B. – Taborsky, G. J. Jr.: The mechanism of vagal nerve stimulation of glucagon and insulin secretion in the dog. *Endocrinology*, 1986, 118, s. 1551–1557.
- 7 McCulloch, D. K. – Raghu, P. K. – Koerker, D. J., et al.: Responses of the pancreatic A cell during hypoglycemia and hyperglycemia are dependent on the B cell. *Metabolism*, 1989, 38, s. 702–707.
- 8 Miller, N. – Beckwith, R. – Butler, P. C., et al.: Metabolic and hormonal responses to exogenous hyperthermia in man. *Clin Endocrinol (Oxf)*, 1989, 80, s. 651–660.
- 9 Dobbins, R. L. – Davis, S. N. – Neal, D. W.: Compartmental modeling of glucagon kinetics in the conscious dog. *Metabolism*, 1995, 44, s. 452–459.
- 10 Felig, P. – Wahren, J. – Hendler, R.: Influence of physiologic hyperglucagonemia on basal and insulin-inhibited splanchnic glucose output in normal man. *J Clin Invest*, 1976, 58, s. 761–768.
- 11 Del Prato, S. – Castellino, P. – Simonson, D. C. – DeFronzo, R. A.: Hyperglucagonemia and insulin-mediated glucose metabolism. *J Clin Invest*, 1987, 79, s. 547–555.
- 12 Baron, A. D. – Schaeffer, L. – Shragg, P., et al.: Role of hyperglucagonemia in maintenance of increased rates of hepatic glucose output in type II diabetics. *Diabetes*, 1987, 36, s. 274–283.
- 13 Unger, R. H. – Eisentraut, A. M. – McCall, C. M., et al.: Measurements of endogenous glucagon in plasma and the influence of blood glucose concentration upon its secretion. *J Clin Invest*, 1962, 41, s. 682–689.
- 14 Aronoff, S. L. – Benett, P. H. – Unger, R. H.: Immunoreactive glucagon (IRG) responses to intravenous glucose in prediabetes and diabetes among Pima Indians and normal Caucasians. *J Clin Endocrinol Metab*, 1977, 44, s. 968–972.
- 15 Holste, L. C. – Connolly, C. C. – Moore, M. C., et al.: Physiological changes in circulating glucagon alter hepatic glucose disposition during portal glucose delivery. *Am J Physiol*, 1997, 277, s. E283–E290.
- 16 Rizza, R. A.: Pathogenesis of fasting and postprandial hyperglycemia in type 2 diabetes: Implications for therapy. *Diabetes*, 2010, 59, s. 2697–2707.
- 17 Fargren, J. – Perrson, M. – Schweizer, A., et al.: Glucagon dynamics during hypoglycaemia and food-re-challenge following treatment with vildagliptin in insulin-treated patients with type 2 diabetes. *Diab Obes Metab*, 2014, 16, s. 812–818.
- 18 Petersen, K. F. – Sullivan, J. T.: Effects of a novel glucagon receptor antagonist (Bay27-9955) on glucagon-stimulated glucose production in humans. *Diabetologia*, 2001, 44, s. 2018–2024.
- 19 Landstedt-Halin, L. – Adamson, U. – Lins, P. E.: Oral glibenclamide suppresses glucagon secretion during insulin-induced hypoglycemia in patients with type 2 diabetes. *J Clin Endocrinol Metab*, 1999, 84, s. 3140–3146.
- 20 Drucker, D. J.: The biology of incretin hormones. *Cell Metab*, 2006, 3, s. 153–165.
- 21 Kreymann, B. – Williams, G. – Ghatei, M. A., et al.: Glucagon-like peptide-1 (7–36): a physiological incretin in man. *Lancet*, 1987, 2, s. 1300–1304.
- 22 Keller, R. S. – Aponte, G. W.: Intra-islet regulation of hormone secretion by glucagon-like peptide-1(7–36) amide. *Am J Physiol*, 1995, 269, s. G852–860.
- 23 Hare, K. J. – Vilksboll, T. – Asmar, M., et al.: The glucagonostatic and insulinotropic effects of glucagon-like peptide-1 contribute equally to its glucose-lowering action. *Diabetes*, 2010, 59, s. 1765–1770.
- 24 Richards, P. – Parker, H. E. – Adrienssens, A. E., et al.: Identification and characterization of GLP-1 receptor-expressing cells using a new transgenic mouse model. *Diabetes*, 2014, 63, s. 1224–1233.
- 25 de Heer, J. – Rasmussen, C. – Coy, D. H. – Holst, J. J.: Glucagon-like peptide-1, but not glucose-dependent insulinotropic peptide, inhibits glucagon secretion via somatostatin (receptor subtype 2) in the peritoneal rat pancreas. *Diabetologia*, 2008, 51, s. 2263–2270.
- 26 Vilksboll, T. – Kralup, T. – Madsbad, S. – Holst, J. J.: Both GLP-1 and GIP are insulinotropic at basal and postprandial glucose levels and contribute nearly equally to the incretin effect of a meal in healthy subjects. *Regulatory Pept*, 2003, 114, s. 115–121.
- 27 Den, K. B. – Brock, B. – Juhl, C. B., et al.: Effect of intravenous infusion of exenatide (synthetic exendin-4) on glucose-dependent insulin secretion and counterregulation during hypoglycemia. *Diabetes*, 2004, 53, s. 2397–2403.
- 28 Nauck, M. A. – Heimesaat, M. M. – Behle, K., et al.: Effects of glucagon-like peptide 1 on counterregulatory hormone responses, cognitive functions, and insulin secretion during hyperinsulinemic, stepped hypoglycemic clamp experiments in healthy volunteers. *J Clin Endocrinol Metab*, 2002, 87, s. 1239–1246.
- 29 Christensen, M. – Vedtofte, L. – Holst, J. J., et al.: Glucose dependent insulinotropic polypeptide: a bifunctional glucose-dependent regulator of glucagon and insulin secretion in humans. *Diabetes*, 2011, 60, s. 103–109.
- 30 Koruny, W. – Foley, J. – Kozlovski, P., et al.: Improved glycaemic control with vildagliptin added to insulin, with or without metformin, in patients with type 2 diabetes mellitus. *Diab Obes Metab*, 2013, 15, s. 252–257.
- 31 Barnett, A. H. – Charbonnel, B. – Donovan, M., et al.: Effect of saagliptin as add-on therapy in patients with poorly controlled type 2 diabetes on insulin alone or insulin combined with metformin. *Curr Med Res Opinion*, 2012, 28, s. 513–523.
- 32 Vilsboll, T. – Rosenstock, J. – Yki-Jarvinen, H., et al.: Efficacy and safety of sitagliptin when added to insulin therapy in patients with type 2 diabetes. *Diab Obes Metab*, 2010, 12, s. 167–177.
- 33 Omar, B. – Ahrén, B.: Pleiotropic mechanisms for the glucose-lowering action of DPP-4 inhibitors. *Diabetes*, 2014, 63, s. 2196–2202.
- 34 Waget, A. – Cabou, C. – Masseboeuf, M.: Physiological and pharmacological mechanisms through which the DPP-4 inhibitor sitagliptin regulates glycemia in mice. *Endocrinology*, 2011, 152, s. 3018–3029.
- 35 Balas, B. – Baig, M. R. – Watson, C., et al.: The dipeptidyl peptidase IV inhibitor vildagliptin suppresses endogenous glucose production and enhances islet function after single-dose administration in type 2 diabetic patients. *J Clin Endocrinol Metab*, 2007, 92, s. 1249–1255.
- 36 D'Alessio, D.: The role of dysregulated glucagon secretion in type 2 diabetes. *Diab Obes Metab*, 2011, 13 (dopl. 1), s. 126–132.
- 37 Nauck, M. A. – Heimesaat, M. M. – Behle, K., et al.: Effects of glucagon-like peptide 1 on counterregulatory hormone responses, cognitive functions, and insulin secretion during hyperinsulinemic, stepped hypoglycemic clamp experiments in healthy volunteers. *J Clin Endocrinol Metab*, 2002, 87, s. 1239–1246.
- 38 Koruny, W. – Foley, J. – Kozlovski, P., et al.: Improved glycaemic control with vildagliptin added to insulin, with or without metformin, in patients with type 2 diabetes mellitus. *Diab Obes Metab*, 2013, 15, s. 252–257.
- 39 Christensen, M. – Vedtofte, L. – Holst, J. J., et al.: Glucose dependent insulinotropic polypeptide: a bifunctional glucose-dependent regulator of glucagon and insulin secretion in humans. *Diabetes*, 2011, 60, s. 103–109.
- 40 Koruny, W. – Foley, J. – Kozlovski, P., et al.: Improved glycaemic control with vildagliptin added to insulin, with or without metformin, in patients with type 2 diabetes mellitus. *Diab Obes Metab*, 2013, 15, s. 252–257.
- 41 Vilsboll, T. – Rosenstock, J. – Yki-Jarvinen, H., et al.: Efficacy and safety of sitagliptin when added to insulin therapy in patients with type 2 diabetes. *Diab Obes Metab*, 2010, 12, s. 167–177.
- 42 Waget, A. – Cabou, C. – Masseboeuf, M.: Physiological and pharmacological mechanisms through which the DPP-4 inhibitor sitagliptin regulates glycemia in mice. *Endocrinology*, 2011, 152, s. 3018–3029.
- 43 Balas, B. – Baig, M. R. – Watson, C., et al.: The dipeptidyl peptidase IV inhibitor vildagliptin suppresses endogenous glucose production and enhances islet function after single-dose administration in type 2 diabetic patients. *J Clin Endocrinol Metab*, 2007, 92, s. 1249–1255.
- 44 D'Alessio, D.: The role of dysregulated glucagon secretion in type 2 diabetes. *Diab Obes Metab*, 2011, 13 (dopl. 1), s. 126–132.

Fenomén hyperglykemie nalačno a možnosti jeho ovlivnění novými bazálními inzuliny

prof. MUDr. Martin Haluzík, DrSc. III. interní klinika 1. LF UK a VFN, Praha

- 1 Haffner, S. M. – Lehto, S. – Ronnemaa, T., et al.: Mortality from coronary heart disease in subjects with type 2 diabetes and in nondiabetic subjects with and without prior myocardial infarction. *The New England Journal of Medicine*, 1998, 339, s. 229–234.
- 2 Lawes, C. M. – Parag, V. – Bennett, D. A., et al.: Blood glucose and risk of cardiovascular disease in the Asia Pacific region. *Diabetes Care*, 2004, 27, s. 2836–2842.
- 3 Inzucchi, S. E. – Bergenfelz, R. M. – Buse, J. B., et al.: Management of hyperglycemia in type 2 diabetes: A patient-centered approach: position statement of the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes Care*, 2012, 35, s. 1364–1379.

- 4 Weng, J. – Li, Y. – Xu, W., et al.: Effect of intensive insulin therapy on beta-cell function and glycaemic control in patients with newly diagnosed type 2 diabetes: a multicentre randomised parallel-group trial. *Lancet*, 2008, 371, s. 1753–1760.
- 5 ORIGIN Trial Investigators, Gerstein, H. C. – Bosch, J. – Dagenais, G. R., et al.: Basal insulin and cardiovascular and other outcomes in dysglycemia. *N Engl J Med*, 2012, 367, s. 319–328.
- 6 Holman, R. R. – Paul, S. K. – Bethel, M. A., et al.: 10-year follow-up of intensive glucose control in type 2 diabetes. *The New England Journal of Medicine*, 2008, 359, s. 1577–1589.
- 7 Calvert, M. J. – McManus, R. J. – Freemantle, N.: Management of type 2 diabetes with multiple oral hypoglycaemic agents or insulin in primary care: retrospective cohort study. *Br J Gen Pract*, 2007, 57, s. 455–460.
- 8 Simons, W. R. – Vinod, H. D. – Gerber, R. A. – Bolinder, B.: Does rapid transition to insulin therapy in subjects with newly diagnosed type 2 diabetes mellitus benefit glycaemic control and diabetes-related complications? A German population-based study. *Exp Clin Endocrinol Diabetes*, 2006, 114, s. 520–526.
- 9 Baldeuweg, S. E. – Yudkin, J. S.: Implications of the United Kingdom prospective diabetes study. *Primary Care*, 1999, 26, s. 809–827.
- 10 Haak, T. – Tiengo, A. – Draeger, E., et al.: Lower within-subject variability of fasting blood glucose and reduced weight gain with insulin detemir compared to NPH insulin in patients with type 2 diabetes. *Diabetes, Obesity & Metabolism*, 2005, 7, s. 56–64.
- 11 Yki-Jarvinen, H. – Dressler, A. – Ziemer, M.: Less nocturnal hypoglycemia and better post-dinner glucose control with bedtime insulin glargine compared with bedtime NPH insulin during insulin combination therapy in type 2 diabetes. HOE 901/3002 Study Group. *Diabetes Care*, 2000, 23, s. 1130–1136.
- 12 Evans, M. – Schumm-Draeger, P. M. – Vora, J. – King, A. B.: A review of modern insulin analogue pharmacokinetic and pharmacodynamic profiles in type 2 diabetes: improvements and limitations. *Diabetes*, 2008, 57, s. 112–124.
- 13 Leiberman, M. – Laffel, L. M. – Steiner, J. F., et al.: Insulin degludec: a new basal insulin. *Diabetes, Obesity & Metabolism*, 2011, 13, s. 677–684.
- 14 Zachariah, S. – Sheldon, B. – Shojaae-Moradie, F., et al.: Insulin detemir reduces weight gain as a result of reduced food intake in patients with type 1 diabetes. *Diabetes Care*, 2011, 34, s. 1487–1491.
- 15 Shiramoto, M. – Eto, T. – Irie, S., et al.: Single-dose new insulin glargine 300 U.ml⁻¹ provides prolonged, stable glycaemic control in Japanese and European people with type 1 diabetes. *Diabetes, Obesity & Metabolism*, 26, 11. 2014, doi: 10.1111/dom.12415, Epub před tiskem.
- 16 Becker, R. H. – Dahmen, R. – Bergmann, K., et al.: New insulin glargine 300 units.ml⁻¹ provides a more even activity profile and prolonged glycemic control at steady state compared with insulin glargine 100 units.ml⁻¹. *Diabetes Care*, 22, 5. 2014, pii: DC_140006, Epub před tiskem.
- 17 Riddle, M. C. – Bolli, G. B. – Ziemen, M., et al.: New insulin glargine 300 units/ml versus glargine 100 units/ml in people with type 2 diabetes using basal and mealtime insulin: glucose control and hypoglycemia in a 6-month randomized controlled trial (EDITION 1). *Diabetes Care*, 2014, 37, s. 2755–2762.
- 18 Yki-Jarvinen, H. – Bergenstal, R. – Ziemen, M., et al.: New insulin glargine 300 units/ml versus glargine 100 units/ml in people with type 2 diabetes using oral agents and basal insulin: glucose control and hypoglycemia in a 6-month randomized controlled trial (EDITION 2). *Diabetes Care*, 2014, 37, s. 3235–3243.
- 19 Jonassen, I. – Havelund, S. – Hoeg-Jensen, T., et al.: Design of the novel protraction mechanism of insulin degludec, an ultra-long-acting basal insulin. *Pharmaceutical Research*, 2012, 29, s. 2104–2114.
- 20 Jonassen, I. – Havelund, S. – Ribe, U., et al.: Insulin degludec: multi-hexamer formation is the underlying basis for this new generation ultra-long acting basal insulin. *Diabetes*, 2010, 53, dopl. 1, s. 388–389.
- 21 Heise, T. – Hermanski, L. – Nosek, L., et al.: Insulin degludec: four times lower pharmacodynamic variability than insulin glargin under steady-state conditions in type 1 diabetes. *Diabetes, Obesity & Metabolism*, 2012, 14, s. 859–864.
- 22 Garber, A. J. – King, A. B. – Del Prato, S., et al.: Insulin degludec, an ultra-longacting basal insulin, versus insulin glargin in basal-bolus treatment with mealtime insulin aspart in type 2 diabetes (BEGIN Basal-Bolus Type 2): a phase 3, randomised, open-label, treat-to-target non-inferiority trial. *Lancet*, 2012, 379, s. 1498–1507.
- 23 Zinman, B. – Philis-Tsimikas, A. – Cariou, B., et al.: Insulin degludec versus insulin glargin in insulin-naïve patients with type 2 diabetes: a 1-year, randomized, treat-to-target trial (BEGIN Once Long). *Diabetes Care*, 2012, 35, s. 2464–2471.
- 24 Bergenstal, R. – Bhargava, A. – Jain, R. – Unger, J. – Rasmussen, S. – Mersebach, H. – Gough, S.: 200 U/ml insulin degludec improves glycemic control similar to insulin glargin with a low risk of hypoglycemia in insulin-naïve people with type 2 diabetes. Abstract presented at American Association of Clinical Endocrinologists 21st Annual Scientific Meeting and Clinical Congress 2012.
- 25 Birkeland, K. I. – Raz, I. – Gough, S., et al.: Insulin degludec in a flexible daily dosing regimen provides similar glycaemic control without increasing rates of hypoglycaemia compared to dosing the same time daily in type 2 diabetes. *Diabetologia*, 2011, 54, dopl. 1A, s. L10-LB1.
- 26 Atkin, S. L. – Bain, S. – Gough, S., et al.: Insulin degludec does not compromise efficacy or safety when given in a flexible once-daily dosing regimen compared to insulin glargin once daily at the same time each day in type 2 diabetes. *Diabetologia*, 2011, 54, dopl. 1, s. S55.
- 27 Bergenstal, R. M. – Rosenstock, J. – Arakaki, R. F., et al.: A randomized, controlled study of once-daily LY2605541, a novel long-acting basal insulin, versus insulin glargin in basal insulin-treated patients with type 2 diabetes. *Diabetes Care*, 2012, 35, s. 2140–2147.

Klinický význam postprandiální glykemie a současné možnosti intervence

MUDr. Martin Prázný, Ph.D., CSc. III. interní klinika 1. LF UK a VFN, Praha

- 1 Lefèuvre, A. J. – Scheen, P. J.: The postprandial state and risk of cardiovascular disease. *Diabet Med*, 1998, 15, dopl. 4, s. S63–S68.
- 2 Neri, S. – Calvagno, S. – Mauceri, B., et al.: Effects of antioxidants on postprandial oxidative stress and endothelial dysfunction in subjects with impaired glucose tolerance and type 2 diabetes. *Eur J Nutr*, 2010, 49, s. 409–416.
- 3 Su, Y. – Liu, X. M. – Sun, Y. M., et al.: The relationship between endothelial dysfunction and oxidative stress in diabetes and prediabetes. *Int J Clin Pract*, 2008, 62, s. 877–882.
- 4 Bell, D. S. – O’Keefe, J. H. – Jellinger, P.: Postprandial dysmetabolism: the missing link between diabetes and cardiovascular events? *Endocr Pract*, 2008, 14, s. 112–124.
- 5 Bashe, B. – Samuel, S. M. – Triggle, C. R. – Ding, H.: Endothelial dysfunction in diabetes mellitus: possible involvement of endoplasmic reticulum stress? *Exp Diabetes Res*, 2012, 2012:481840, doi: 10.1155/2012/481840, Epub 28. 2. 2012.
- 6 Triggle, C. R.: The early effects of elevated glucose on endothelial function as a target in the treatment of type 2 diabetes. *Timely Top Med Cardiovasc Dis*, 2008, 12, s. E3.
- 7 Wright, E. – Scism-Bacon, J. L. – Glass, L. C.: Oxidative stress in type 2 diabetes: the role of fasting and postprandial glycaemia. *Int J Clin Pract*, 2006, 60, s. 308–314.
- 8 Lautt, W. W.: Postprandial insulin resistance as an early predictor of cardiovascular risk. *Ther Clin Risk Manag*, 2007, 3, s. 761–770.
- 9 Ceriello, A. – Esposito, K. – Piconi, L., et al.: Oscillating glucose is more deleterious to endothelial function and oxidative stress than mean glucose in normal and type 2 diabetic patients. *Diabetes*, 2008, 57, s. 1349–1354.
- 10 O’Keefe, J. H. – Bell, D. S.: Postprandial hyperglycemia/hyperlipidemia (postprandial dysmetabolism) is a cardiovascular risk factor. *Am J Cardiol*, 2007, 100, s. 899–904.
- 11 Basu, R. – Barosa, C. – Jones, J. – Dube, S. – Carter, R. – Basu, A. – Rizza, R. A.: Pathogenesis of prediabetes: role of the liver in isolated fasting hyperglycemia and combined fasting and postprandial hyperglycemia. *J Clin Endocrinol Metab*, 2013, 98, s. E409–E417.
- 12 Schulman, I. – Zhou, M. S.: Vascular insulin resistance: a potential link between cardiovascular and metabolic diseases. *Curr Hypertens Rep*, 2009, 11, s. 48–55.
- 13 Beisswenger, P. J. – Brown, W. V. – Ceriello, A., et al.: Meal-induced increases in C-reactive protein, interleukin-6 and tumour necrosis factor α are attenuated by prandial + basal insulin in patients with Type 2 diabetes. *Diabet Med*, 2011, 28, s. 1088–1095.
- 14 Anderson, R. A. – Evans, M. L. – Ellis, G. R., et al.: The relationships between post-prandial lipaemia, endothelial function and oxidative stress in healthy individuals and patients with type 2 diabetes. *Atherosclerosis*, 2001, 154, s. 475–483.
- 15 Fonseca, V. A.: The effects of insulin on the endothelium. *Endocrinol Metab Clin North Am*, 2001, 36, dopl. 2, s. 20–26.

Praktické aspekty terapie inhibitory SGLT2

MUDr. Martina Lášticová III. interní gerontometabolická klinika, LF UK a FN, Hradec Králové

- 1 Barnett, A. H., et al.: Efficacy and safety of empagliflozin added to existing antidiabetes treatment in patients with type 2 diabetes and chronic kidney disease: a randomised, double-blind, placebo-controlled trial. *Lancet Diabetes Endocrinol*, 2014, 2, s. 369–384.
- 2 Bolinder, J., et al.: Dapagliflozin maintains glycemic control while reducing weight and body fat mass over 2 years in patients with type 2 diabetes mellitus inadequately controlled on metformin. *Diabetes Obes Metab*, 2014, 16, s. 124–136.
- 3 Bolinder, J., et al.: Effects of dapagliflozin on body weight, total fat mass, and regional adipose tissue distribution in patients with type 2 diabetes mellitus with inadequate glycemic control on metformin. *J Clin Endocrinol Metab*, 2012, 97, s. 1020–1031.
- 4 Cefalu, W. T., et al.: Dapagliflozin treatment for type 2 diabetes mellitus patients with comorbid cardiovascular disease and hypertension. *Diabetes*, 2012, 61 (dopl. 1), s. A271.
- 5 Cefalu, W. T., et al.: Efficacy and safety of canagliflozin versus glimepiride in patients with type 2 diabetes inadequately controlled with metformin (CANADA-SU): 52 week results from a randomized, double-blind, phase 3 non-inferiority trial. *Lancet*, 2013, 382, s. 941–950.
- 6 Chow, E., et al.: Risk of cardiac arrhythmias during hypoglycemia in patients with type 2 diabetes and cardiovascular risk. *Diabetes*, 2014, 63, s. 1738–1747.
- 7 SPC Forxiga.
- 8 Gallo, L. A., et al.: Probing SGLT2 as a therapeutic target for diabetes: Basic physiology and consequences. *Diab Vasc Dis Res*. Publikováno online, 23. 1. 2015.
- 9 Gerich, J. E.: Role of the kidney in normal glucose homeostasis and in the hyperglycemia of diabetes mellitus: therapeutic implications. *Diabet Med*, 2010, 27, s. 136–142.
- 10 Hasan, F. M., et al.: SGLT2 inhibitors in the treatment of type 2 diabetes. *Diabetes Res Clin Pract*, 2014, 104, s. 297–322.
- 11 Häring, H.-U., et al.: Empagliflozin as an add-on to metformin plus sulfonylurea in patients with type 2 diabetes: a 24-week, randomized, double-blind, placebo-controlled trial. *Diabetes Care*, 2013, 36, s. 3396–3404.
- 12 Invokana® (canagliflozin). Full prescribing information. Jannsen Pharmaceuticals, Titusville, NJ, 2013.
- 13 SPC Jardiance. Dostupné z http://www.ema.europa.eu/docs/en_GB/document_library/EPAR_-_Product_Information/human/002677/WC500168592.pdf, vyhledáno 30. 3. 2015.
- 14 Johnsson, K. M., et al.: Urinary tract infections in patients with diabetes treated with dapagliflozin. *J Diabetes Complications*, 2013, 27, s. 473–478.
- 15 Johnsson, K. M., et al.: Vulvovaginitis and balanitis in patients with diabetes treated with dapagliflozin. *J Diabetes Complications*, 2013, 27, s. 479–484.
- 16 Kasichayanula, S., et al.: The influence of kidney function on dapagliflozin exposure, metabolism and pharmacodynamics in healthy subjects and in patients with type 2 diabetes mellitus. *Br J Clin Pharmacol*, 2013, 76, s. 432–444.
- 17 Kohan, D. E., et al.: Long-term study of patients with type 2 diabetes and moderate renal impairment shows that dapagliflozin reduces weight and blood pressure but does not improve glycemic control. *Kidney Int*, 2014, 85, s. 962–971.

- 18 Komoroski, B., et al.: Dapagliflozin, a novel SGLT2 inhibitor, induces dose-dependent glucosuria in healthy subjects. *Clin Pharmacol Ther*, 2009, 85, s. 520–526.
- 19 List, J. F., et al.: Glucose dynamics and mechanistic implications of SGLT2 inhibitors in animals and humans. *Kidney Int*, 2011, 79 (dopl. 120), s. 520–527.
- 20 Nauck, M. A., et al.: Dapagliflozin versus glipizide as add-on therapy in patients with type 2 diabetes who have inadequate glycemic control with metformin: a randomized, 52 week, double-blind, active-controlled noninferiority trial. *Diabetes Care*, 2011, 34, s. 2015–2022.
- 21 Polidori, D., et al.: Canagliflozin lowers postprandial glucose and insulin by delaying intestinal glucose absorption in addition to increasing urinary glucose excretion: results of a randomised, placebo-controlled study. *Diabetes Care*, 2013, 36, s. 2154–2161.
- 22 Riedeराले, M., et al.: Comparison of empagliflozin and glimepiride as add-on to metformin in patients with type 2 diabetes: a 104-week randomised, active-controlled, double-blind, phase 3 trial. *Lancet Diabetes Endocrinol*, 2014, 2, s. 691–700.
- 23 Rieg, T., et al.: Increase in SGLT1-mediated transport explains renal glucose reabsorption during genetic and pharmacological SGLT2 inhibition in euglycemia. *Am J Physiol Renal Physiol*, 2014, 306, s. F188–F193.
- 24 Roden, M., et al.: Empagliflozin monotherapy with sitagliptin as an active comparator in patients with type 2 diabetes: a randomised, double-blind, placebo controlled, phase 3 trial. *Lancet Diabetes Endocrinol*, 2013, 1, s. 208–219.
- 25 Vallon, V.: The proximal tubule in the pathophysiology of the diabetic kidney. *Am J Physiol Regul Integr Comp Physiol*, 2011, 300, s. R1009–R1022.
- 26 Weber, M. A., et al.: Effects of dapagliflozin on blood pressure in diabetic patients with hypertension inadequately controlled by a renin-angiotensin system blocker. *Circulation*, 2013, 128 (dopl. 22), s. A13144.

Duální inhibice: výsledky studie IMPROVE-IT – jaký má význam u pacientů s diabetem

prof. MUDr. Richard Češka, CSc., FACP, FEFIM

Centrum preventivní kardiologie, III. interní klinika 1. LF UK a VFN, Praha

- 1 Perk, J. – De, B. G. – Gohlke, H., et al.: European Guidelines on Cardiovascular Disease Prevention in Clinical Practice (Version 2012) : The Fifth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (Constituted by Representatives of Nine Societies and by Invited Experts). *Int J Behav Med*, 2012, 19, s. 403–488.
- 2 Reiner, Z. – Catapano, A. L. – De, B. G., et al.: ESC/EAS Guidelines for the management of dyslipidaemias: The Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS). *Eur Heart J*, 2011, 32, s. 1769–1818.
- 3 Ryden, L. – Grant, P. J. – Anker, S. D., et al.: ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD: The Task Force on diabetes, pre-diabetes, and cardiovascular diseases of the European Society of Cardiology (ESC) and developed in collaboration with the European Association for the Study of Diabetes (EASD). *Eur Heart J*, 2013, 34, s. 3035–3087.
- 4 Nichols, M. – Townsend, N. – Scarborough, P., et al.: Trends in age-specific coronary heart disease mortality in the European Union over three decades: 1980–2009. *Public Health Reviews*, 2, s. 416–435.
- 5 Baigent, C. – Blackwell, L. – Emberson, J., et al.: Efficacy and safety of more intensive lowering of LDL cholesterol: a meta-analysis of data from 170,000 participants in 26 randomised trials. *Lancet*, 2010, 376, s. 1670–1681.
- 6 Kearney, P. M. – Blackwell, L. – Collins, R., et al.: Efficacy of cholesterol-lowering therapy in 18,686 people with diabetes in 14 randomised trials: a meta-analysis. *Lancet*, 2008, 371, s. 117–125.
- 7 Mihaylova, B. – Emberson, J. – Blackwell, L., et al.: The effects of lowering LDL cholesterol with statin therapy in people at low risk of vascular disease: meta-analysis of individual data from 27 randomised trials. *Lancet*, 2012, 380, s. 581–590.
- 8 Ginsberg, H. N. – Elam, M. B. – Lovato, L. C., et al.: Effects of combination lipid therapy in type 2 diabetes mellitus. *N Engl J Med*, 2010, 362, s. 1563–1574.
- 9 SHARP Collaborative Group: Study of Heart and Renal Protection (SHARP): randomized trial to assess the effects of lowering low-density lipoprotein cholesterol among 9,438 patients with chronic kidney disease. *Am Heart J*, 2010, 160, s. 785–794.
- 10 Rossebo, A. B. – Pedersen, T. R. – Boman, K., et al.: For the SEAS Investigators: Intensive lipid lowering with simvastatin and ezetimibe in aortic stenosis. *N Engl J Med*, 2008, 359, s. 1343–1356.

Studie LIBRA: liraglutid a zachování funkce β-buněk pankreatu

MUDr. Eva Račická Diabetologická a interní ambulance, Ostrava

- 1 Kahn, S. E. – Zraika, S. – Utzschneider, K. M.: The β-cell lesion in type 2 diabetes: there has to be a primary functional abnormality. *Diabetologia*, 2009, 52, s. 1003–1012.
- 2 Turner, R. C. – Cull, C. A. – Frighi, V. – Holman, R. R.: UK Prospective Diabetes Study (UKPDS) Group, Glycemic control with diet, sulfonylurea, metformin, or insulin in patients with type 2 diabetes mellitus: progressive requirement for multiple therapies (UKPDS49). *JAMA*, 1999, 281, s. 2005–2012.
- 3 Leahy, J. L. – Hirsch, I. B. – Peterson, K. A. – Schneider, D.: Targeting β-cell function early in the course of therapy for type 2 diabetes mellitus. *J Clin Endocrinol Metab*, 2010, 95, s. 42–16.
- 4 Anděl, M. – Němcová, V. – Pavliková, N. – Urbanová, J. – Čecháková, M., et al.: Faktory vedoucí k poškození a destrukci β-buněk Langerhansových ostrůvků pankreatu. *Vnitřní lékařství*, 2014, 60, s. 684–690.
- 5 DeFronzo, R. A.: From the triumvirate to the ominous octet: A new paradigm to the treatment of type 2 diabetes mellitus. *Diabetes*, 2009, 58, s. 773–795.
- 6 Garber, A. J.: Incretin effects on β-cell function, replication, and mass. *Diabetes Care*, 2011, 34, dopl. 2.
- 7 Victoza, SPC.
- 8 Garber, A. – Henry, R. R. – Ratner, R. – Hale, P. – Chány, C. T., et al.: Liraglutid, a once-daily human glucagon-like peptide 1 analogue, provides sustained improvements in glycaemic control and weight for 2 years as monotherapy, compared with glimepiride in patients with type 2 diabetes. *Diabetes Obes Metab*, 2011, 13, s. 348–356.
- 9 Yimin, S. – Genehg, Y. – Yan, F. – Junqiu, Z. – Yaohui, G.: Early liraglutide treatment is better in glucose control, β-cell function improvement and mass preservation in db/db mice. *Peptides*, 2014, 52, s. 134–142.
- 10 Retnakaran, R. – Kramer, C. K. – Choi, H. – Swaminathan, B. – Zinman, B.: Liraglutide and the preservation of pancreatic β-cell function in early type 2 diabetes: The LIBRA Trial. *Diabetes Care*, 2014, 37, s. 3270–3278.
- 11 Retnakaran, R. – Shen, S. – Hanley, A. J. – Vuksan, V. – Hamilton, J. K. – Zinam, B.: Hyperbolic relationship between insulin secretion and sensitivity on oral glucose tolerance test. *Obesity (Silver Spring)*, 2008, 16, s. 1901–1907.
- 12 Matsuda, M. – DeFronzo, R. A.: Insulin sensitivity indices obtained from oral glucose tolerance testing: Comparison with the euglycemic insulin clamp. *Diabetes Care*, 1999, 22, s. 1462–1470.
- 13 Matthes, D. R. – Hosker, J. P. – Rudenski, A. S. – Naylor, B. A. – Trachet, D. F. – Turner, R. C.: Homeostasis model assessment: Insulin resistance and β-cell function from fasting plasma glucose and insulin concentrations in man. *Diabetologia*, 1985, 28, s. 412–419.
- 14 Retnakaran, R. – Qi, Y. – Opsteen, C. – Vivero, E. – Zinam, B.: Initial short-term intensive insulin therapy as a strategy for evaluating the preservation of β-cell function with oral antidiabetic medications: A pilot study with sitagliptin. *Diabetes Obes Metab*, 2010, 12, s. 909–915.
- 15 Garber, A. J., et al.: The impact of diabetes stage, indicated by number of previous oral antidiabetic agents, on the clinical benefits of liraglutide in the treatment of type 2 diabetes mellitus. *Diabetes*, 2011, 60, s. 907–P.
- 16 Bunck, M. C. – Diamant, M. – Conner, A., et al.: One year treatment with exenatide improves β-cell function, compared with insulin glargin, in metformin-treated type 2 diabetic patients: a randomized, controlled trial. *Diabetes Care*, 2009, 32, s. 762–768.

Látky s potenciálem ovlivnit progresi DM ve volném prodeji a volba optimálního analgetika

MUDr. Jiří Slíva, MD., Ph.D. Ústavy farmakologie 2. a 3. LF UK, Praha

- 1 Shertzer, H. G. – Schneider, S. N. – Kendig, E. L. – Clegg, D. J. – D’Alessio, D. A. – Genter, M. B.: Acetaminophen normalizes glucose homeostasis in mouse models for diabetes. *Biochem Pharmacol*, 2008, 75, s. 1402–1410.
- 2 Wu, M. – Desai, D. H. – Kakarla, S. K., et al.: Acetaminophen prevents aging-associated hyperglycemia in aged rats: effect of aging-associated hyperactivation of p38-MAPK and ERK1/2. *Diabetes Metab Res Rev*, 2009, 25, s. 279–286.
- 3 Kohli, P. – Steg, P. G. – Cannon, C. P., et al.: NSAID use and association with cardiovascular outcomes in outpatients with stable atherothrombotic disease. *Am J Med*, 2014, 127, s. 53–60.
- 4 Curiel, R. V. – Katz, J. D.: Mitigating the cardiovascular and renal effects of NSAIDs. *Pain Med*, 2013, 14, dopl. 1, s. S23–S28.

Kdy a jak užívat dia-sipping?

doc. MUDr. Pavel Kohout, Ph.D.

Centrum výživy a interní oddělení, Thomayerova nemocnice, Praha

- 1 Kohout, P. – Kotrlíková, E.: *Základy klinické výživy*. Praha, Forsapi, 2009.
2 Kohout, P. – Rušavý, Z. – Šerclová, Z.: *Vybrané kapitoly z klinické výživy*. Praha, Forsapi, 2010.
3 Magnoni, D. – Rouws, C. H. F. C. – Lansink, M., et al.: Long-term use of a diabetes-specific oral nutritional supplement results in a low-postprandial glucoseresponse in diabetes patients. *Diabetes Research and Clinical Practice*, 2008, 80, s. 75–82.
4 Rušavý, Z.: Enterální výživa u diabetiků. *Vnitřní lékařství*, 2006, 52, s. 979–982.
5 Sobotka, L.: *Basics in clinical nutrition*. 4. vydání, Praha, Galén, 2012.

Kanagliflozin – nový lék pro léčbu diabetes mellitus 2. typu

MUDr. Eva Račická Diabetologická a interní ambulance, Ostrava

- 1 Abdul-Ghani, M. A., et al.: Role of sodium glucose co-transporter 2 (SGLT2) inhibitors in the treatment of type 2 diabetes. *Endocrin Rev*, 2011, 32, s. 2515–2531.
2 Bailey, C. J.: Renal glucose reabsorption inhibitors to treat diabetes. *Trends Pharmacol Sci*, 2011, 32, s. 63–71.
3 Campbell, R. K. – Cobble, M. E., et al.: Distinguishing among incretin – based therapies. Pathophysiology of diabetes mellitus: potential role of incretin – based therapies. *J Fam Pract*, 2010, 59 (dopl. 1), s. S5–9.
4 Cefalu, W. T., et al.: Efficacy and safety of canagliflozin versus glimepiride in patients with type 2 diabetes inadequately controlled with metformin (CANTATA-SU) 52 week results from a randomised double blind phase 3 non-inferiority trial. *Lancet*, 2013, 382, s. 941–950.
5 Cefalu, W. T., et al.: Canagliflozin demonstrates durable improvements over 104 weeks versus glimepiride in subjects with type 2 diabetes mellitus on metformin. Prezentováno na 73rd Scientific Sessions of the ADA Annual Meeting, 21.–25. června 2013, Chicago, Illinois.
6 DeFronzo, R. A.: From the triumvirate to the Omnipotent Octet: A new paradigm to the treatment of type 2 diabetes mellitus. *Diabetes*, 2009, 58.
7 DeFronzo, R. A. – Davidson, J. A., et al.: The role of the kidneys in glucose homeostasis: A new path towards normalizing glycaemia. *Diabetes, obesity and metabolism*, 2012, 14, s. 5–14.
8 Devineni, D., et al.: Pharmacokinetics and pharmacodynamics of canagliflozin-asodium glucose co-transporter 2 inhibitor in subjects with type 2 diabetes mellitus. *J Clin Pharmacol*, 2013, 53, s. 601–610.
9 Gerich, J. E.: Role for the kidney in normal glucose homeostasis and in the hyperglycaemia of diabetes mellitus: therapeutic implications. *Diabet Med*, 2010, 27, s. 138–142.
10 Haluzík, M.: Canagliflozin. *Farmakoterapie*, 2014, 10 (dopl. 2), s. 22–26.
11 Lavalle-Gonzales, F. J., et al.: Efficacy and safety of canagliflozin compared with placebo and sitagliptin in patients with type 2 diabetes on background metformin monotherapy: a randomised trial. *Diabetologia*, 2013, 56, s. 2582–2592.
12 Liang, Y., et al.: Effect of canagliflozin on renal threshold for glucose, glycemia, and body weight in normal diabetic animal models. *PLoS One*, 2012, 7, s. e30555.
13 Matthews, J., et al.: Efficacy and safety of canagliflozin, an inhibitor of sodium glucose co-transporter 2 added on to insulin therapy with or without oral agents in type 2 diabetes. SEASD Annual Meeting Berlin, Německo. *Diabetologia*, 2012 (dopl. 1), abstrakt 764 (poster).
14 Polidori, D., et al.: Canagliflozin lowers postprandial glucose and insulin by delaying intestinal glucose absorption in addition to increasing urinary glucose extraction: World Diabetes Congress of IDF, 2011, Dubaj, SAE, poster.
15 Polidori, E., et al.: Canagliflozin lowers postprandial glucose and insulin by delaying intestinal glucose absorption in addition to increasing urinary glucose excretion. *Diabetes Care*, 2013, 36, s. 2154–2161.
16 Salvatore, T. – Carbonara, O., et al.: Kidney in diabetes: from organ damage target to therapeutic target. *Curr Drug Metab*, 2011, 12, s. 658–666.
17 SPC canagliflozin, 2013.
18 Stenlof, K., et al.: Efficacy and safety of canagliflozin monotherapy in subjects with type 2 diabetes inadequately controlled with diet and exercise. *Diabetes Obes Metab*, 2013, 15, s. 372–382.
19 Woo, V., et al.: Canagliflozin is effective and generally well tolerated in subjects with type 2 diabetes mellitus and stage 3 chronic kidney disease. EASD Annual Meeting Barcelona, Španělsko. *Diabetologia*, 2013 (dopl. 1), poster.
20 Wright, E. M. – Hirayama, B. A., et al.: Active sugar transport in health and disease. *J Intern Med*, 2007, 261, s. 23–43.