

## Literatura ACTA MEDICINAE 1/2020 Diabetologie

- 3 Kontinuální monitorování glykemie a okamžitý monitoring: pro a proti**  
MUDr. Michal Krčma, Ph.D. I. interní klinika FN Plzeň
- 3 Studie VERIFY – jak ideálně léčit hyperglykemii nekomplikovaného diabetika na začátku nemoci**  
prof. MUDr. Milan Kvapil, CSc., MBA Interní klinika 2. LF UK a FN v Motole, Praha
- 3 Glifloziny v léčbě diabetes mellitus 1. typu**  
MUDr. Markéta Paclíková | doc. MUDr. Alena Šmahelová, Ph.D. Subkatedra diabetologie, LF UK, Hradec Králové,  
III. interní gerontometabolická klinika, FN Hradec Králové
- 3 Semaglutid – zlom v léčbě obezity**  
prof. MUDr. Štěpán Svačina, DrSc., MBA III. interní klinika 1. LF UK a VFN, Praha
- 3 Jednou je efektivnější než dvakrát?**  
MUDr. Veronika Ambrožová Diabetologická ambulance, DIABETIN, s. r. o., Kostelec nad Orlicí
- 3 Canagliflozin 300 mg v současné paletě antidiabetik**  
MUDr. Jiří Slíva, Ph.D. Ústav farmakologie, 3. LF UK, Praha
- 4 Nová doporučení ESC/EAS pro diagnostiku a léčbu dyslipidemií z roku 2019 ve vztahu k léčbě pacientů  
s diabetem – aneb co je nového?**  
prof. MUDr. Milan Kvapil, CSc., MBA Interní klinika 2. LF UK a FN v Motole, Praha
- 4 Léčba a zkušenosti s dlouhodobě působícím analogem Tresiba**  
prof. MUDr. Zdeněk Rušavý, Ph.D. Diabetologické centrum, I. interní klinika FN a LF UK, Plzeň
- 4 Mezioborový konsenzus: Doporučení pro užití SGLT2 inhibitorů u pacientů s kardiovaskulárním  
a renálním rizikem**  
prof. MUDr. Jan Škrha, DrSc., MBA III. interní klinika endokrinologie a metabolismu VFN a 1. LF UK, Praha  
doc. MUDr. Martin Prázný, CSc., Ph.D. III. interní klinika endokrinologie a metabolismu 1. LF UK a VFN, Praha  
prof. MUDr. Martin Haluzík, DrSc. III. interní klinika 1. LF UK a VFN, Praha  
prof. MUDr. Aleš Linhart, DrSc., FESC, FCMA II. interní klinika kardiologie a angiologie VFN a 1. LF UK, Praha  
doc. MUDr. Jan Bělohlávek, Ph.D. II. interní klinika kardiologie a angiologie VFN a 1. LF UK, Praha  
prof. MUDr. Richard Češka, CSc., FACP, FEFIM Centrum preventivní kardiologie III. interní kliniky 1. LF UK a VFN, Praha  
prof. MUDr. Vladimír Tesař, DrSc., MBA, FERA, FASN Klinika nefrologie 1. LF UK a VFN, Praha  
prof. MUDr. Ondřej Viklický, CSc. Klinika neurologie Institutu klinické a experimentální medicíny, Praha  
prof. MUDr. Romana Ryšavá, CSc. Klinika nefrologie 1. LF UK a VFN, Praha
- 4 Proč aktivně vyhledávat infekci virem hepatitidy C u diabetiků 2. typu**  
prof. MUDr. Petr Urbánek, CSc. Interní klinika 1. LF UK a ÚVN, Praha
- 5 Glukózové senzory a první implantabilní systém pro kontinuální monitoraci glukózy**  
MUDr. Jan Šoupal, Ph.D. III. interní klinika VFN a 1. LF UK, Praha
- 5 Registrovaný léčivý přípravek a doplněk stravy – rozdíly a dopady na zdraví pacienta**  
PharmDr. Veronika Krajčová FN v Motole – nemocniční lékárna, Praha | prof. RNDr. Jiří Jarkovský, Ph.D.  
| prof. RNDr. Ladislav Dušek, Ph.D. Institut biostatistiky a analýz, Lékařská fakulta, Masarykova univerzita, Brno; Ústav  
zdravotnických informací a statistiky ČR, Praha

## Literatura ACTA MEDICINAE 2/2020 Kardiologie

- 6 **Perorální antidiabetika a srdeční selhání**  
prof. MUDr. Jindřich Špinar, CSc., FESC | prof. MUDr. Lenka Špinarová, Ph.D., FESC | prof. MUDr Jiří Vítověc, CSc., FESC  
1. interní kardioangiologická klinika FN u sv. Anny v Brně a LF MU, Brno
- 6 **Betablokátory v léčbě chronického srdečního selhání**  
prof. MUDr Jiří Vítověc, CSc., FESC | prof. MUDr. Jindřich Špinar, CSc., FESC | prof. MUDr. Lenka Špinarová, Ph.D., FESC  
1. interní kardioangiologická klinika FN u sv. Anny v Brně a LF MU, Brno
- 6 **Fixní kombinace u hypertenze ve světle současných doporučení**  
prof. MUDr. Jiří Widimský jr., CSc. III. interní klinika – Centrum pro hypertenzi VFN a 1. LF UK, Praha
- 6 **Kombinační léčba nekomplikované hypertenze**  
MUDr. Eva Tůmová, Ph.D. Centrum preventivní kardiologie, III. interní klinika 1. LF UK a VFN, Praha
- 7 **Základní změny v doporučených postupech léčby dyslipidemí z roku 2019**  
prof. MUDr. Hana Rosolová, DrSc. Centrum preventivní kardiologie, II. interní klinika LF UK a FN v Plzni
- 7 **Duální protidestičková léčba v primární a sekundární prevenci ischemické choroby srdeční**  
MUDr. Ivo Varvařovský, Ph.D. Kardiologické centrum Agel, Pardubice
- 7 **Současné poznatky o možnostech léčby srdečního selhání se zachovanou ejekční frakcí**  
doc. MUDr. Filip Málek, Ph.D., MBA Ambulance srdečního selhání a hypertenze, Kardiovaskulární centrum, Nemocnice Na Homolce, Praha
- 8 **Co přinesla studie MARINER**  
prof. MUDr. Lenka Špinarová, Ph.D., FESC | prof. MUDr. Jindřich Špinar, CSc., FESC | prof. MUDr Jiří Vítověc, CSc., FESC  
1. interní kardioangiologická klinika FN u sv. Anny v Brně a LF MU, Brno
- 8 **Mikronizovaný diosmin: další možnost léčby příznaků a projevů chronické žilní insuficience a léčby hemoroidálního onemocnění**  
MUDr. Jiří Slíva, Ph.D. Ústav farmakologie, 3. LF UK, Praha
- 8 **Význam kyseliny acetylsalicylové v enterosolventní lékové formě**  
MUDr. Jiří Slíva, Ph.D. Ústav farmakologie, 3. LF UK, Praha

# Kontinuální monitorování glykemie a okamžitý monitoring: pro a proti

MUDr. Michal Krčma, Ph.D. I. interní klinika FN Plzeň

- 1 Adolfsson, P. – Parkin, C. G. – Thomas, A. et al.: Selecting the appropriate continuous glucose monitoring system – a practical approach. *Eur Endocrinol*, 2018, 14, s. 24–29.
- 2 Danne, T. – Nimri, R. – Battelino, T., et al.: International consensus on use of continuous glucose monitoring. *Diabetes Care*, 2017, 40, s. 1631–1640, doi: 10.2337/dc17-1600.
- 3 Garber, A. J. – Abrahamson, M. J. – Barzilay, J. I., et al.: American Association of Clinical Endocrinologists (AACE); American College of Endocrinology (ACE): Consensus statement by the American Association of Clinical Endocrinologist and American College of Endocrinology on the comprehensive type 2 diabetes management algorithm – 2016 executive summary. *Endocr Pract*, 2016, 22, s. 84–113.
- 4 Gibb, F. W. – McKnight, J. A. – Clarke, C., et al.: Preserved C-peptide secretion is associated with fewer low-glucose events and lower glucose variability on flash glucose monitoring in adults with type 1 diabetes. *Diabetologia*, 7. 2. 2020, doi: 10.1007/s00125-020-05099-3.
- 5 Charleer, S. – De Block, C. – Van Huffel, L.: Quality of life and glucose control after 1 year of nation wide reimbursement of intermittently scanned continuous glucose monitoring in adults living with type 1 diabetes (FUTURE): a prospective observational real-world cohort study. *Diabetes Care*, 2020, 43, s. 389–397.
- 6 Lin, Y. K. – Groat, D. – Chan, O., et al.: Alarm settings of continuous glucose monitoring systems and associations to glucose outcomes in type 1 diabetes. *J Endocr Soc*, 2019, 4, bvz005, doi: 10.1210/jendso/bvz005.
- 7 Oskarsson, P. – Antuna, R. – Geelhoed-Duijvestijn, P., et al.: Impact of flash glucose monitoring on hypoglycaemia in adults with type 1 diabetes managed with multiple daily injection therapy: a pre-specified subgroup analysis of the IMPACT randomised controlled trial. *Diabetologia*, 2018, 61, s. 539–550.
- 8 Pickup, J. C. – Ford Holloway, M. – Samsi, K.: Real-time continuous glucose monitoring in type 1 diabetes: a qualitative framework analysis of patient narratives. *Diabetes Care*, 2015, 38, s. 544–550.
- 9 Schmelzleisen-Reeder, G. – Schoemekar, M. – Kirchsteiger, H., et al.: Time delay of CGM sensors: relevance causes, and counter measures. *J Diabetes Sci Technol*, 2015, 9, s. 1006–1015.

## Studie VERIFY – jak ideálně léčit hyperglykemii nekomplikovaného diabetika na začátku nemoci

prof. MUDr. Milan Kvapil, CSc., MBA Interní klinika 2. LF UK a FN v Motole, Praha

- 1 Matthews, D. R. – Paldánus, P. M. – Proot, P., et al.: VERIFY study group: Glycaemic durability of an early combination therapy with vildagliptin and metformin versus sequential metformin monotherapy in newly diagnosed type 2 diabetes (VERIFY): a 5-year, multicentre, randomised, double-blind trial. *Lancet*, 2019, 394, s. 1519–1529.
- 2 Matthews, D. R. – Paldánus, P. M. – Proot, P., et al.: Baseline characteristics in the VERIFY study: a randomized trial assessing the durability of glycaemic control with early vildagliptin-metformin combination in newly diagnosed Type 2 diabetes. *Diabet Med*, 2019, 36, s. 505–513.
- 3 Perreault, L. – Pan, Q. – Schroeder, E. B., et al.: Diabetes Prevention Program Research Group: Regression from prediabetes to normal glucose regulation and prevalence of microvascular disease in the Diabetes Prevention Program Outcomes Study (DPPOS). *Diabetes Care*, 2019, 42, s. 1809–1815.

## Glifloziny v léčbě diabetes mellitus 1. typu

MUDr. Markéta Paclíková | doc. MUDr. Alena Šmahelová, Ph.D. Subkatedra diabetologie, LF UK, Hradec Králové,  
III. interní gerontometabolická klinika, FN Hradec Králové

- 1 Vallon, V. – Thompson, S. C.: Targeting renal glucose reabsorption to treat hyperglycemia. *Diabetologia*, 2017, 60, s. 215–225.
- 2 Zinman, B. – Wanner, C. – Lachin, J. M., et al.: Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. *N Engl J Med*, 2015, 373, s. 2117–2128.
- 3 Neal, B. – Perkovic, V. – Mahaffey, K. W., et al.: Canagliflozin and cardiovascular and renal event in type 2 diabetes. *N Engl J Med*, 2017, 377, s. 644–657.
- 4 Fei, Y. – Tsai, M.-F. – Cheung, B. M. Y.: Cardiovascular outcomes in trial of new antidiabetic drug classes: a network meta-analysis. *Cardiovasc Diabetol*, 2019, 18, s. 112.
- 5 Verma, S. – McMurray, J. J. V.: SGLT2 inhibitors an mechanism of cardiovascular benefit: a state of the art review. *Diabetologia*, 2018, 61, s. 2108–2117.
- 6 Thomas, M. C. – Cherney, D. Z. I.: The action of SGLT2 inhibitors on metabolism, renal function and blood pressure. *Diabetologia*, 2018, 61, s. 2098–2107.
- 7 Davies, M. J. – D’Alessio, D. A. – Fradkin, J., et al.: Management of hyperglycemia in type 2 diabetes, 2018. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes Care*, 2018, 41, s. 2669–2701.
- 8 Karásek, D.: Inzulinová rezistence u pacientů s diabetem 1. typu. In: Kvapil, M. (ed): *Diabetologie 2018*. Praha, Triton, s. 89–105.
- 9 Mathieu, Ch. – Dandona, P.: Efficacy and safety of dapagliflozin in patients with inadequate controlled type 1 diabetes (The Depict-2): 24-week result from a randomized controlled trial. *Diabetes Care*, 2018, 41, s. 1938–1946.
- 10 Garg, S. K. – Henry, R. R., et al.: Effect of sotagliflozin added to insulin in patients with type 1 diabetes. *N Eng J Med*, 2017, 377, s. 2337–2348.
- 11 McMurray, J.: Dapagliflozin reduces cardiovascular events in HFREF, not just diabetes. ESC Congress News 2019 – Paříž, Francie.
- 12 McCrimmon, R. J. – Henry, R. R.: SGLT inhibitor adjunct therapy in type 1 diabetes. *Diabetologia*, 2018, 61, s. 2126–2133.
- 13 Rosenstock, J.: Empagliflozin as adjunctive to insulin therapy in type 1 diabetes: The EASE Trials. *Diabetes Care*, 2018, 41, s. 2560–2569.
- 14 Danne, T. – Garg, S., et al.: International consensus of risk management of diabetic ketoacidosis in patient with type 1 diabetes treated with sglt inhibitors. *Diabetes Care*, 2019, 42, s. 1147–1154.
- 15 Lupsa, B. – Inzucchi, S.: Use of SGLT2 inhibitors in type 2 diabetes: weighing the risk and benefits. *Diabetologia*, 2018, 61, s. 2118–2125.

## Semaglutid – zlom v léčbě obezity

prof. MUDr. Štěpán Svačina, DrSc., MBA III. interní klinika 1. LF UK a VFN, Praha

- 1 Svačina, Š.: *Antidiabetika, historie, současnost a budoucnost*. Axonite, Praha, 2018.
- 2 Svačina, Š.: *Léčba obézního diabetika*. Mladá Fronta, Praha, 2018.
- 3 Hunt, B., et al.: Evaluation of the Cost per patient achieving treatment targets with oral semaglutide: A short-term cost-effectiveness analysis in the United States. *Adv Ther*, 2019, 36, s. 3483–3493.
- 4 Anderson, S. L. – Beutel, T. R. – Trujillo, J. M.: Oral semaglutide in type 2 diabetes. *J Diabetes Complications*, 8. 1. 2020, 107520.
- 5 Husain, M. et al.: Semaglutide (SUSTAIN and PIONEER) reduces cardiovascular events in type 2 diabetes across varying cardiovascular risk. *Diabetes Obes Metab*, 5. 1. 2020.
- 6 Christou, G. A., et al.: Semaglutide as a promising antiobesity drug. *Obes Rev*, 2019, 20, s. 805–815.

## Jednou je efektivnější než dvakrát?

MUDr. Veronika Ambrožová Diabetologická ambulance, DIABETIN, s. r. o., Kostelec nad Orlicí

- 1 Pelikánová, T. – Bartoš, V., et al.: *Praktická diabetologie*. Praha, Maxdorf, 2018.
- 2 Kvapil, M. (ed): *Diabetologie 2018*. Triton, 2018 – Když bazální inzulin nestáčí.
- 3 Suliqua – Souhrnn údajů o přípravku.

## Canagliflozin 300 mg v současně paletě antidiabetik

MUDr. Jiří Slíva, Ph.D. Ústav farmakologie, 3. LF UK, Praha

- 1 Chasis, H. – Jolliffe, N. – Smith, H. W.: The action of phlorizin on the excretion of glucose, xylose, sucrose, creatinine and urea by man. *J Clin Invest*, 1933, 12, s. 1083–1090.
- 2 Dennis, V. W. – Bracy, P. C.: Phosphate and glucose transport in the proximal convoluted tubule: mutual dependency on sodium. *Adv Exp Med Biol*, 1978, 103, s. 79–80.
- 3 Cramer, S. C. – Pardridge, W. M. – Hirayama, B. A., et al.: Colocalization of GLUT2 glucose transporter, sodium/glucose cotransporter, and gamma-glutamyl transpeptidase in rat kidney with double-peroxidase immunocytochemistry. *Diabetes*, 1992, 41, s. 766–770.
- 4 Song, P. – Onishi, A. – Koepsell, H., et al.: Sodium glucose cotransporter SGLT1 as a therapeutic target in diabetes mellitus. *Expert Opin Ther Targets*, 2016, 20, s. 1109–1125.
- 5 Neal, B. – Perkovic, V. – Mahaffey, K. W., et al.: Canagliflozin and cardiovascular and renal events in type 2 diabetes. *N Engl J Med*, 2017, 377, s. 644–657.
- 6 Perkovic, V. – Jardine, M. J. – Neal, B., et al.: Canagliflozin and renal outcomes in type 2 diabetes and nephropathy. *N Engl J Med*, 2019, 380, s. 2295–2306.
- 7 Aneja, P. – Bhalla, G. – Parvesh, N., et al.: Efficacy and safety of canagliflozin 300 mg in overweight and obese type 2 diabetes mellitus patients in a real-world setting: COLOR study. *Indian J Endocrinol Metab*, 2019, 23, s. 307–311.
- 8 Cefalu, W. T. – Leiter, L. A. – Yoon, K. H., 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.
- 9 Prasanna Kumar, K. M. – Ghosh, S. – Canovatchel, W., et al.: A review of clinical efficacy and safety of canagliflozin 300 mg in the management of patients with type 2 diabetes mellitus. *Indian J Endocrinol Metab*, 2017, 21, s. 196–209.
- 10 Lavalle-Gonzalez, F. J. – Januszewicz, A. – Davidson, 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.
- 11 Neslusan, C. – Teschmacher, A. – Willis, M., et al.: Cost-effectiveness analysis of canagliflozin 300 mg versus dapagliflozin 10 mg added to metformin in patients with type 2 diabetes in the United States. *Diabetes Ther*, 2018, 9, s. 565–581.
- 12 Coleman, C. I. – Pandya, S. – Wang, L., et al.: Treatment patterns, glycemic control and bodyweight with canagliflozin 300 mg versus GLP-1RAs in type 2 diabetes patients. *J Comp Eff Res*, 2019, 8, s. 889–905.
- 13 Lupsa, B. C. – Inzucchi, S. E.: Use of SGLT2 inhibitors in type 2 diabetes: weighing the risks and benefits. *Diabetologia*, 2018, 61, s. 2118–2125.
- 14 Cosentino, F. – Grant, P. J. – Aboyans, V., et al.: 2019 ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD. *Eur Heart J*, 2020, 41, s. 255–323.
- 15 Davies, M. J. – D'Alessio, D. A. – Fradkin, J., et al.: Management of hyperglycaemia in type 2 diabetes, 2018. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetologia*, 2018, 61, s. 2461–2498.

## Nová doporučení ESC/EAS pro diagnostiku a léčbu dyslipidemií z roku 2019 ve vztahu k léčbě pacientů s diabetem – aneb co je nového?

prof. MUDr. Milan Kvapil, CSc., MBA Interní klinika 2. LF UK a FN v Motole, Praha

- 1 Mach, F. – Baigent, C. – Catapano, A. L., et al.: [ESC Scientific Document Group]. 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk. *Eur Heart J*, 2019, pii: ehz455.
- 2 Catapano, A. L. – Graham, I. – De Backer, J., et al.: 2016 ESC/EAS guidelines for the management of dyslipidaemias. *Eur Heart J*, 2016, 37, s. 2999–3058.
- 3 Vrablik, M. – Pitka, J. – Blaha, V., et al.: Stanovisko výboru ČSAT k doporučením ESC/EAS pro diagnostiku a léčbu dyslipidemií z roku 2016. *Athero Rev*, 2017, 2, s. 185–193.

## Léčba a zkušenosti s dlouhodobě působícím analogem Tresiba

prof. MUDr. Zdeněk Rušavý, Ph.D. Diabetologické centrum, I. interní klinika FN a LF UK, Plzeň

- 1 Gerstein, H. C. – Bosch, J., et al.: The ORIGIN Trial Investigators: Basal insulin and cardiovascular and other outcomes in dysglycemia. *N Engl J Med*, 2012, 367, s. 319–328.
- 2 Marso, S. P. – Darren, K. – Zinman, B., et al.: for the DEVOTE Study Group: Efficacy and safety of degludec versus glargine in type 2 diabetes. *N Engl J Med*, 2017, 377, s. 723–732.
- 3 Philis-Tsimikas, A. – Klonoff, D. C. – Khunti, K., et al.: CONCLUDE Study Group: Risk of hypoglycaemia with insulin degludec versus insulin glargine U300 in insulin-treated patients with type 2 diabetes: the randomised, head-to-head CONCLUDE trial. *Diabetologia*, 2016, 59, s. 370–378.
- 4 Heise, T. – Kaplan, K. – Haahr, H. L.: Day-to-day and within-day variability in glucose-lowering effect between insulin degludec and insulin glargine (100 U/mL and 300 U/mL): A comparison across studies. *J Diabet Sci Technol*, 2018, 12, s. 356–363.

## Mezioborový konsenzus: Doporučení pro užití SGLT2 inhibitorů u pacientů s kardiovaskulárním a renálním rizikem

prof. MUDr. Jan Škrha, DrSc., MBA III. interní klinika endokrinologie a metabolismu VFN a 1. LF UK, Praha

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

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

prof. MUDr. Aleš Linhart, DrSc., FESC, FCMA II. interní klinika kardiologie a angiologie VFN a 1. LF UK, Praha

doc. MUDr. Jan Bělohlávek, Ph.D. II. interní klinika kardiologie a angiologie VFN a 1. LF UK, Praha

prof. MUDr. Richard Češka, CSc., FACP, FEFIM Centrum preventivní kardiologie III. interní kliniky 1. LF UK a VFN, Praha

prof. MUDr. Vladimír Tesař, DrSc., MBA, FERA, FASN Klinika nefrologie 1. LF UK a VFN, Praha

prof. MUDr. Ondřej Viklický, CSc. Klinika neurologie Institutu klinické a experimentální medicíny, Praha

prof. MUDr. Romana Ryšavá, CSc. Klinika nefrologie 1. LF UK a VFN, Praha

- 1 Zdravotnictví ČR: Stručný přehled činnosti oboru diabetologie a endokrinologie za období 2007–2015 NZIS REPORT č. K/1 (09/2016).
- 2 Doležal, T. farmakoeconom z Institutu pro zdravotní ekonomiku (IHE-TA). Dostupné z: <https://zdravi.euro.cz/clanek/lecba-glifloziny-je-ucinni-i-usporne-479526>, vyhledáno 6. 3. 2020.
- 3 SPC Forxiga.
- 4 SPC Jardiance.
- 5 SPC Invokana.
- 6 Buse, J. B. – Wexler, D. J. – Tsapas, A., et al.: 2019 Update to: Management of hyperglycemia in type 2 diabetes, 2018. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes Care*, 2020, 43, s. 487–493.
- 7 Cosentino, F. – Grant, P. J. – Aboyans, V., et al.: 2019 ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD. *Eur Heart J*, 2020, 41, s. 255–323.
- 8 Sarafidis, P. – Ferro, Ch. J. – Morales, E., et al.: SGLT-2 inhibitors and GLP-1 receptor agonists for nephroprotection and cardioprotection in patients with diabetes mellitus and chronic kidney disease. A consensus statement by the EURECA-m and the DIABESITY working groups of the ERA-EDTA. *Nephrol Dial Transplant*, 2019, 34, s. 208–230.
- 9 Škrha, J. – Pelikánová, T. – Kvapil, M.: Doporučený postup péče o diabetes mellitus 2. typu. Dostupné z: [http://www.diab.cz/dokumenty/standard\\_lecba\\_dm\\_typ\\_II.pdf](http://www.diab.cz/dokumenty/standard_lecba_dm_typ_II.pdf), vyhledáno 6. 3. 2020.
- 10 SPC léčivých přípravků obsahujících účinnou látku metformini hydrochloridum.
- 11 Ponikowski, P. – Voors, A. A. – Anker, S. D., et al.: 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur Heart J*, 2016, 37, s. 2129–2200.

## Proč aktivně vyhledávat infekci virem hepatitidy C u diabetiků 2. typu

prof. MUDr. Petr Urbánek, CSc. Interní klinika 1. LF UK a ÚVN, Praha

- 1 Chlibek, R. – Smetana, J. – Sosovickova, R., et al.: Prevalence of hepatitis C virus in adult population in the Czech Republic – time for birth cohort screening. *PLoS One*, 2017, 12, e0175525.
- 2 Thein, H. H. – Yi, Q. – Dore, G. J. – Krahm, M. D.: Estimation of stage-specific fibrosis progression rates in chronic hepatitis C virus infection: a meta-analysis and meta-regression. *Hepatology*, 2008, 48, s. 418–431.
- 3 Pownard, T. – Bedossa, P. – Opolon, P.: Natural history of liver fibrosis progression in patients with chronic hepatitis C. The OBSVIRC, METAVIR, CLINIVIR, and DOSVIRC groups. *Lancet*, 1997, 349, s. 825–832.
- 4 Tong, M. J. – el-Farra, N. S. – Reikes, A. R. – Co, R. L.: Clinical outcomes after transfusion-associated hepatitis C. *N Engl J Med*, 1995, 332, s. 1463–1466.
- 5 Durand, F. – Valla, D.: Assessment of prognosis of cirrhosis. *Semin Liver Dis*, 2008, 28, s. 110–122.
- 6 El-Serag, H. B.: Epidemiology of viral hepatitis and hepatocellular carcinoma. *Gastroenterology*, 2012, 142, s. 1264–1273.
- 7 Sarin, S. K. – Kumar, M.: Natural history of HCV infection. *Hepatol Int*, 2012, 6, s. 684–695.
- 8 Cacoub, P. – Comarmond, C. – Domont, F., et al.: Extrahepatic manifestations of chronic hepatitis C virus infection. *Ther Adv Infect Dis*, 2016, 3, s. 3–14.
- 9 Younossi, Z. M. – Biererdinc, A. – Henry, L.: Hepatitis C infection: a multifaceted systemic disease with clinical, patient reported and economic consequences. *J Hepatol*, 2016, 65, suppl. 1, s. S109–S119.
- 10 Rutter, K. – Stattermayer, A. F. – Beinhard, S., et al.: Successful anti-viral treatment improves survival of patients with advanced liver disease due to chronic hepatitis C. *Aliment Pharmacol Ther*, 2015, 41, s. 521–531.
- 11 Antonelli, A. – Ferri, C. – Fallahi, P., et al.: Hepatitis C virus infection: evidence for an association with type 2 diabetes. *Diabetes Care*, 2005, 28, s. 2548–2550.
- 12 Antonelli, A. – Ferri, C. – Fallahi, P., et al.: Type 2 diabetes in hepatitis C related mixed cryoglobulinaemia patients. *Rheumatology*, 2004, 43, s. 238–240.
- 13 Chen, H. F. – Li, C. Y. – Chen, P., et al.: Seroprevalence of hepatitis B and C in type 2 diabetic patients. *J Chin Med Assoc*, 2006, 69, s. 146–152.
- 14 Imazeki, F. – Yokosuka, O. – Fukai, K., et al.: Prevalence of diabetes mellitus and insulin resistance in patients with chronic hepatitis C: comparison with hepatitis B virus-infected and hepatitis C virus-cleared patients. *Liver Int*, 2008, 28, s. 355–362.

- 15 Butt, A. A. – Khan, U. A. – McGinnis, K. A., et al.: Co-morbid medical and psychiatric illness and substance abuse in HCV-infected and uninfected veterans. *J Viral Hepat*, 2007, 14, s. 890–896.
- 16 Ruhl, C. E. – Menke, A. – Cowie, C. C. – Everhart, J. E.: Relationship of hepatitis C virus infection with diabetes in the U.S. population. *Hepatology*, 2014, 60, s. 1139–1149.
- 17 Meht, S. H. – Brancati, F. L. – Sulkowski, M. S., et al.: Prevalence of type 2 diabetes mellitus among persons with hepatitis C virus infection in the United States. *Ann Intern Med*, 2000, 133, s. 592–599.
- 18 Mehta, S. H. – Brancati, F. L. – Strathdee, S. A., et al.: Hepatitis C virus infection and incident type 2 diabetes. *Hepatology*, 2003, 38, s. 50–56.
- 19 White, D. L. – Ratziu, W. – El-Serag, H. B.: Hepatitis C infection and risk of diabetes: A systematic review and meta-analysis. *J Hepatol*, 2008, 49, s. 831–844.
- 20 Patel, S. – Jinjuvadia, R. – Patel, R., et al.: Insulin resistance is associated with significant liver fibrosis in chronic hepatitis C patients: A systemic review and meta-analysis. *J Clin Gastroenterol*, 2016, 50, s. 80–84.
- 21 Naing, C. – Mak, J. W. – Ahmed, S. I. – Maung, M.: Relationship between hepatitis C virus infection and type 2 diabetes mellitus: meta-analysis. *World J Gastroenterol*, 2012, 18, s. 1642–1651.
- 22 Fabiani, S. – Fallahi, P. – Ferrari, S. M., et al.: Hepatitis C virus infection and development of type 2 diabetes mellitus: Systematic review and meta-analysis of the literature. *Rev Endocr Metab Disord*, 2018, 19, s. 405–420.
- 23 Banerjee, S. – Saito, K. – Ait-Goughoulte, M., et al.: Hepatitis C virus core protein upregulates serine phosphorylation of insulin receptor substrate-1 and impairs the downstream akt/protein kinase B signaling pathway for insulin resistance. *J Virol*, 2008, 82, s. 2606–2612.
- 24 Coppins, K. D. – White, M. F.: Regulation of insulin sensitivity by serine/treonine phosphorylation of insulin receptor substrate proteins IRS1 and IRS2. *Diabetologia*, 2012, 55, s. 2565–2582.
- 25 Kawaguchi, T. – Yoshida, T. – Harada, M., et al.: Hepatitis C virus down regulates insulin receptor substrates 1 and 2 through up-regulation of suppressor of cytokine signaling 3. *Am J Pathol*, 2004, 165, s. 1499–1508.
- 26 Kawaguchi, T. – Yoshida, T. – Harada, M., et al.: Hepatitis C virus down regulates insulin receptor substrates 1 and 2 through up-regulation of suppressor of cytokine signaling 3. *Am J Pathol*, 2004, 165, s. 1499–1508.
- 27 Delgado-Borrego, A. – Jordan, S. H. – Negre, B., et al.: Reduction of insulin resistance with effective clearance of hepatitis C infection: results from the HALT-C trial. *Clin Gastroenterol Hepatol*, 2010, 8, s. 458–462.
- 28 Hum, J. – Jou, J. H. – Green, P. K., et al.: Improvement in glycemic control of type 2 diabetes after successful treatment of hepatitis C virus. *Diabetes Care*, 2017, 40, s. 1173–1180.

## Glukózové senzory a první implantabilní systém pro kontinuální monitoraci glukózy

MUDr. Jan Šoupal, Ph.D. III. interní klinika VFN a 1. LF UK, Praha

- 1 Inzucchi, S. E. – Bergenfelz, R. M. – Buse, J. B., et al.: Management of hyperglycemia in type 2 diabetes, 2015: A patient-centered approach: update to a position statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care*, 2015, 38, s. 140–149.
- 2 Miller, K. M. – Foster, N. C. – Beck, R. W., et al.: T1D Exchange Clinic Network. Current state of type 1 diabetes treatment in the U.S.: updated data from the T1D Exchange clinic registry. *Diabetes Care*, 2015, 38, s. 971–978.
- 3 Battelino, T. – Conget, I. – Olsen, B., et al.; SWITCH Study Group: The use and efficacy of continuous glucose monitoring in type 1 diabetes treated with insulin pump therapy: a randomised controlled trial. *Diabetologia*, 2012, 55, s. 3155–3162.
- 4 Lind, M. – Polonsky, W. – Hirsch, I. B., et al.: Continuous glucose monitoring vs conventional therapy for glycemic control in adults with type 1 diabetes treated with multiple daily insulin injections: The GOLD Randomized Clinical Trial. *JAMA*, 2017, 317, s. 379–387.
- 5 Beck, R. W. – Riddleworth, T. – Ruedy, K., et al.; DIAMOND Study Group: Effect of continuous glucose monitoring on glycemic control in adults with type 1 diabetes using insulin injections: The DIAMOND Randomized Clinical Trial. *JAMA*, 2017, 317, s. 371–378.
- 6 Juvenile Diabetes Research Foundation Continuous Glucose Monitoring Study Group: Effectiveness of continuous glucose monitoring in a clinical care environment: evidence from the Juvenile Diabetes Research Foundation continuous glucose monitoring (JDRF-CGM) trial. *Diabetes Care*, 2010, 33, s. 17–22.
- 7 Bergenfelz, R. M. – Tamborlane, W. V. – Ahmann, A., et al.; STAR 3 Study Group: Effectiveness of sensor-augmented insulin-pump therapy in type 1 diabetes. *N Engl J Med*, 2010, 363, s. 311–320.
- 8 van Beers, C. A. – DeVries, J. H. – Kleijer, S. J., et al.: Continuous glucose monitoring for patients with type 1 diabetes and impaired awareness of hypoglycaemia (IN CONTROL): a randomised, open-label, crossover trial. *Lancet Diabetes Endocrinol*, 2016, 4, s. 893–902.
- 9 El-Laboudi, A. H. – Godslan, I. F. – Johnston, D. G., et al.: Measures of glycemic variability in type 1 diabetes and the effect of real-time continuous glucose monitoring. *Diabetes Technol Ther*, 2016, 18, s. 806–812.
- 10 Garg, S. K. – Schwartz, S. – Edelman, S. V.: Improved glucose excursions using an implantable real-time continuous glucose sensor in adults with type 1 diabetes. *Diabetes Care*, 2004, 27, s. 734–738.
- 11 Nalysnyk, L. – Hernandez-Medina, M. – Krishnarajah, G.: Glycemic variability and complications in patients with diabetes mellitus: evidence from a systematic review of the literature. *Diabetes Obes Metab*, 2010, 12, s. 288–298.
- 12 Bragd, J. – Adamson, U. – Backlund, L. B., et al.: Can glycaemic variability, as calculated from blood glucose self-monitoring, predict the development of complications in type 1 diabetes over a decade? *Diabetes Metab*, 2008, 34, s. 612–616.
- 13 Šoupal, J. – Škrha, J. Jr. – Fajmon, M., et al.: Glycemic variability is higher in type 1 diabetes patients with microvascular complications irrespective of glycemic control. *Diabetes Technol Ther*, 2014, 16, s. 198–203.
- 14 Kropff, J. – Choudhary, P. – Neupane, S., et al.: Accuracy and longevity of an implantable continuous glucose sensor in the PRECISE Study: A 180-day, prospective, multicenter, pivotal trial. *Diabetes Care*, 2017, 40, s. 63–68.
- 15 Bolinder, J. – Antuna, R. – Geelhoed-Duijvestijn, P., et al.: Novel glucose-sensing technology and hypoglycaemia in type 1 diabetes: a multicentre, non-masked, randomised controlled trial. *Lancet*, 2016, 388, s. 2254–2263.
- 16 Miller, K. M. – Beck, R. W. – Bergenfelz, R. M., et al.; T1D Exchange Clinic Network: Evidence of a strong association between frequency of self-monitoring of blood glucose and hemoglobin A1c levels in T1D exchange clinic registry participants. *Diabetes Care*, 2013, 36, s. 2009–2014.
- 17 Rodbard, D.: Continuous glucose monitoring: a review of successes, challenges, and opportunities. *Diabetes Technol Ther*, 2016, suppl. 2, s. S23–S23.
- 18 Bailey, T. – Bode, B. W. – Christiansen, M. P., et al.: The performance and usability of a factory-calibrated flash glucose monitoring system. *Diabetes Technol Ther*, 2015, 17, s. 787–794.
- 19 Rodbard, D.: Continuous glucose monitoring: a review of recent studies demonstrating improved glycemic outcomes. *Diabetes Technol Ther*, 2017, 19, s. S25–S37.
- 20 Prázný, M.: Selfmonitoring glykemie a přesnost glukometrů. *Intern Med*, 2013, 15, s. 206–209.
- 21 Reddy, M. – Jugnee, N. – El Laboudi, A., et al.: A randomized controlled pilot study of continuous glucose monitoring and flash glucose monitoring in people with type 1 diabetes and impaired awareness of hypoglycaemia. *Diabet Med*, 2018, 35, s. 483–490.
- 22 Šoupal, J. – Petruželková, L. – Flekáč, M., et al.: Comparison of different treatment modalities for type 1 diabetes, including sensor-augmented insulin regimens, in 52 weeks of follow-up: A COMISAIR Study. *Diabetes Technol Ther*, 2016, 18, s. 532–538.
- 23 Billings, L. K. – Doshi, A. – Gouet, D., et al.: Efficacy and safety of insulin degludec/liraglutide (IDegLira) vs basal–bolus therapy in patients with type 2 diabetes (T2D): DUAL VII Trial (NCT02420262). Přednáška 136-OR, prezentováno na 77<sup>th</sup> Annual Scientific Sessions of the American Diabetes Association (ADA), San Diego, USA, 10. 6. 2017.
- 24 Rosenstock, J. – Guerci, B. – Hanefeld, M., et al.; Get Goal Duo-2 Trial Investigators: Prandial options to advance basal insulin glargin therapy: testing lisixenatide plus basal insulin versus insulin glulisine either as basal-plus or basal-bolus in type 2 diabetes: The Get Goal Duo-2 Trial. *Diabetes Care*, 2016, 39, s. 1318–1328.
- 25 Tansey, M. – Laffel, L. – Cheng, J., et al.; Juvenile Diabetes Research Foundation Continuous Glucose Monitoring Study Group: Satisfaction with continuous glucose monitoring in adults and youths with type 1 diabetes. *Diabet Med*, 2011, 28, s. 1118–1122.
- 26 Dunn, T. C. – Xu, Y. – Hayter, G., et al.: Real-world flash glucose monitoring patterns and associations between self-monitoring frequency and glycemic measures: A European analysis of over 60 million glucose tests. *Diabetes Res Clin Pract*, 2018, 137, s. 37–46.
- 27 Oskarsson, P. – Antuna, R. – Geelhoed-Duijvestijn, P., et al.: Impact of flash glucose monitoring on hypoglycaemia in adults with type 1 diabetes managed with multiple daily injection therapy: a pre-specified subgroup analysis of the IMPACT randomised controlled trial. *Diabetologia*, 2018, 61, s. 539–550.
- 28 Aronson, R. – Abitbol, A. – Twedeen, K. S.: First assessment of the performance of an implantable CGM system through 180 days in a primarily adolescent population with type 1 diabetes. *Diabetes Obes Metab*, 2019, DOI: 10.1111/dom.13726.
- 29 Herman, A. – Aerts, O. – Baek, M., et al.: Allergic contact dermatitis caused by isobornylacrylate in Freestyle (R) Libre, a newly introduced glucose sensor. *Contact Dermatitis*, 2017, 77, s. 367–373.
- 30 Kamann, S. – Aerts, O. – Heinemann, L.: Further evidence of severe allergic contact dermatitis from isobornylacrylate while using a continuous glucose monitoring system. *J Diabetes Sci Technol*, 2018, 12, s. 630–633.
- 31 Deiss, D. – Szadkowska, A. – Gordon, D., et al.: Clinical practice recommendations on the routine use of eversense, the first long-term implantable continuous glucose monitoring system. *Diabetes Technol Ther*, 2019, 21, s. 254–264.
- 32 Prázný, M. – Rušavý, Z. – Šumník, Z., et al.: Použití inzulínové pumpy a glukózových senzorů u pacientů s diabetem léčených inzulinem. 2019, dostupné z: [http://www.diab.cz/dokumenty/CDS\\_technologie.pdf](http://www.diab.cz/dokumenty/CDS_technologie.pdf), vyhledáno 11. 2. 2020.
- 33 Edelman, S. V. – Argento, N. B. – Pettus, J., et al.: Clinical implications of real-time and intermittently scanned continuous glucose monitoring. *Diabetes Care*, 2018, 41, s. 2265–2274.

## Registrovaný léčivý přípravek a doplněk stravy – rozdíly a dopady na zdraví pacienta

PharmDr. Veronika Krajčová FN v Motole – nemocniční lékárna, Praha Klára Benešová, MSc. | RNDr. Jiří Jarkovský, Ph.D. | prof.

RNDr. Ladislav Dušek, Ph.D. Institut biostatistiky a analýz, Lékařská fakulta, Masarykova univerzita, Brno; Ústav zdravotnických informací a statistiky ČR, Praha

- 1 Zákon o léčivech č. 378/2007 Sb. Zákony pro lidi – Sbírka zákonů ČR v aktuálním konsolidovaném znění [online]. Dostupné z: <https://eur-lex.europa.eu/legal-content/CS/ALL/?uri=celex:32002L0046>, vyhledáno 7. 1. 2020.
- 2 Zákon o potravinách a tabákových výrobcích č. 110/1997 Sb. Zákon pro lidi – Sbírka zákonů ČR v aktuálním konsolidovaném znění. Dostupné z: <https://www.zakonyprolidi.cz/cs/1997-110>, vyhledáno 20. 11. 2018.
- 3 EUR-Lex – 32002L0046 – EN – EUR-Lex. EUR-Lex – Access to European Union law – choose your language. Dostupné z: <https://eur-lex.europa.eu/legal-content/CS/ALL/?uri=celex:32002L0046>, vyhledáno 7. 1. 2020.
- 4 Hranicní přípravky, Státní ústav pro kontrolu léčiv, 2001. Dostupné z: <http://www.sukl.cz/lecia/hranicni-pripravky>, vyhledáno 20. 11. 2018.
- 5 Rozlišení doplnků stravy od léčivých přípravků, Státní ústav pro kontrolu léčiv, 2001. Dostupné z: <http://www.sukl.cz/lecia/rozliseni-doplneku-stravy-od-lecivych-pripravku>, vyhledáno 20. 11. 2018.
- 6 Libo lék, nebo potravinový doplněk? 302 Found, 2000, Medical Tribune.cz. Dostupné z: <https://www.tribune.cz/clanek/17384>, vyhledáno 20. 11. 2018.
- 7 Jaký je rozdíl mezi lékem a doplnkem stravy? O léčich.cz, 2001. Dostupné z: <http://www.olecich.cz/encyklopedie/jaky-je-rozdil-mezi-lekem-a-doplnkem-stravy>, vyhledáno 20. 11. 2018.

## Perorální antidiabetika a srdeční selhání

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

1. interní kardioangiologická klinika FN u sv. Anny v Brně a LF MU, Brno

- 1 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur Heart J*, 2016, 37, s. 2129–2200.
- 2 Hippisley-Cox, J. – Coupland, C.: Diabetes treatments and risk of heart failure, cardiovascular disease, and all cause mortality: cohort study in primary care. *BMJ*, 2016, 354, s. i3477.
- 3 Mudaliar, S. – Allojo, S. – Henry, R. R.: Can a shift in fuel energetics explain the beneficial cardiorenal outcomes in the EMPA-REG OUTCOME study? A unifying hypothesis. *Diabetes Care*, 2016, 39, s. 1115–1122.
- 4 McMurray, J. J. – DeMets, D. L. – Inzucchi, S. E., et al.: DAPA-HF Committees and Investigators: A trial to evaluate the effect of the sodium-glucose co-transporter 2 inhibitor dapagliflozin on morbidity and mortality in patients with heart failure and reduced left ventricular ejection fraction (DAPA-HF). *Eur J Heart Fail*, 2019, 21, s. 665–675.
- 5 Neal, B. – Perkovic, P. – Mahaffey, K. W., et al.: Canagliflozin and cardiovascular and renal events in type 2 diabetes. *NEJM*, 2017, 377, s. 644–657.
- 6 Niessner, A. – Tamargo, J. – Koller, L., et al.: Non-inulin antidiabetic pharmacotherapy in patients with established cardiovascular disease: a position paper of the European Society of Cardiology Working Group on Cardiovascular Pharmacotherapy. *Eur Heart J*, 2018, 39, s. 2274–2281.
- 7 Packer, M.: Higher mortality rate in patients with heart failure who are taking commonly prescribed antidiabetic medications and achieve recommended levels of glycaemic control. *Diabetes Obes Metab*, 2018, 20, s. 1766–1769.
- 8 Scirica, B. M. – Bhatt, D. L. – Braunwald, E., et al.: SAVOR-TIMI 53 Steering Committee and Investigators: Saxagliptin and cardiovascular outcomes in patients with type 2 diabetes mellitus. *N Engl J Med*, 2013, 369, s. 1317–1326.
- 9 Scirica, B. M. – Braunwald, E. – Raz, I., et al.: SAVOR-TIMI 53 Steering Committee and Investigators: Heart failure, saxagliptin, and diabetes mellitus: observations from the SAVOR-TIMI 53 randomized trial. *Circulation*, 2014, 130, s. 1579–1588.
- 10 Seferovic, P. E. – Petrie, M. C. – Filippatos, G. S., et al.: Type 2 diabetes mellitus and heart failure: a position paper of the European Society of Cardiology. *Eur J Heart Fail*, 2018, 20, s. 853–872.
- 11 Seferovic, P. M. – Coats, A. J. S. – Ponikowski, P.: European Society of Cardiology/Heart Failure Association position paper on the role and safety of new glucose-lowering drugs in patients with heart failure. *Eur J Heart Failure*, 2019, doi:10.1002/ejhf.1673.
- 12 Seferovic, P. M. – Ponikowski, P. – Anker, S. D., et al.: Clinical practice update on heart failure 2019: pharmacotherapy, procedures, devices and patient management. An expert consensus meeting report of The Heart Failure Association of the European Society of Cardiology. *Eur J Heart Failure*, 2019, 21, s. 1169–1186.
- 13 Špinar, J. – Hradec, J. – Špinarová, L. – Vítověc, J.: Summary of the 2016 ESC Guidelines on the diagnosis and treatment of acute and chronic heart failure. Prepared by the Czech Society of Cardiology. *Cor et Vasa*, 2016, 58, s. 530–568.
- 14 Špinar, J. – Špinarová, L. – Vítověc, J.: Studie DECLARE potvrdila příznivý efekt dapagliflozimu. *Kardiologická revue*, 2019, 21, s. 7–14.
- 15 Špinar, J. – Špinarová, L. – Vítověc, J.: Léčba diabetu mellitu u kardiovaskulárních onemocnění. *Acta Medicinae*, 2019, 12, s. 48–53.
- 16 Špinar, J. – Špinarová, L. – Vítověc, J.: Srdeční selhání – novinky 2019. *Medicina – Kardiologie*, 2019, s. 6–8.
- 17 Verma, S. – Juni, P. – Mazer, C. D.: Pump, pipes and filter: do SGLT2 inhibitors cover it all. *Lancet*, 2019, 393, s. 3–5.
- 18 Vítověc, J. – Špinar, J. – Špinarová, L.: Diabetus mellitus a kardiovaskulární onemocnění. *Kardiologická revue a Interní medicína*, 2018, 20, s. 118–125.
- 19 Vítověc, J. – Špinar, J. – Špinarová, L.: Glifloziny – naděje pro diabetiky s kardiovaskulárním onemocněním. *Acta Medicinae*, 2018, 2–3, s. 71–77.
- 20 Wanner, C. – Lachin, J. M. – Inzucchi, S. E., et al.: Empagliflozin and clinical outcomes in patients with type 2 diabetes mellitus, established cardiovascular disease, and chronic kidney disease. *Circulation*, 2018, 137, s. 119–129.
- 21 Wiviott, S. D. – Raz, M. – Bonaca, O., et al.: Dapagliflozin and cardiovascular outcomes in type 2 diabetes. *N Engl J Med*, 2019, 380, s. 347–357.
- 22 Zelniker, T. A. – Wiviott, S. D. – Raz, I., et al.: SGLT2 inhibitors for primary and secondary prevention of cardiovascular and renal outcomes in type 2 diabetes: a systematic review and meta-analysis of cardiovascular outcome trial. *Lancet*, 2019, 393, s. 31–39.

## Betablokátory v léčbě chronického srdečního selhání

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

1. interní kardioangiologická klinika FN u sv. Anny v Brně a LF MU, Brno

- 1 Opie, L. H.: Beta-blocking agents. In: Opie, L. H. – Gersh, B. J., et al.: *Drugs for the Heart*. Saunders Elsevier, 2013, s. 1–37.
- 2 Vítověc, J. – Špinar, J. – Špinarová, L. – Ludka, O.: *Léčba kardiovaskulárních onemocnění*. Grada, 2020, v tisku.
- 3 The BEST Investigators: A trial of the beta-blocker bucindolol in patients with advanced chronic heart failure. *N Engl J Med*, 2001, 344, s. 1659–1667.
- 4 Swedberg, K. – Komajda, M. – Bohm, M., et al.: Ivabradine and outcomes in chronic heart failure (SHIFT): a randomised placebo-controlled study. *Lancet*, 2010, 376, s. 875–885.
- 5 Littnerová, S.: Propensity Score. Rigorózní práce, MU 2011, Brno, s. 89.
- 6 Lund, L. H. – Benson, L. – Dahlstrom, U., et al.: Association between use of β-blockers and outcomes in patients with heart failure and preserved ejection fraction. *JAMA*, 2014, 312, s. 2008–2018.
- 7 Koteka, D. – Holmes, J. – Krum, H., et al.; on behalf of the Beta-Blockers in Heart Failure Collaborative Group: Efficacy of β blockers in patients with heart failure plus atrial fibrillation: an individual-patient data meta-analysis. *Lancet*, 2014, 384, s. 2235–2243.
- 8 Hradec, J.: Kontroverze kolem betablokátorů. *Vnitřní Lek*, 2015, 61, s. 410–416.

## Fixní kombinace u hypertenze ve světle současných doporučení

prof. MUDr. Jiří Widimský jr., CSc. III. interní klinika – Centrum pro hypertenzi VFN a 1. LF UK, Praha

- 1 Ceral, J. – Habrdová, V. – Voříšek, V., et al.: Difficult-to-control arterial hypertension or uncooperative patients? The assessment of serum antihypertensive drug levels to differentiate non-responsiveness from non-adherence to recommended therapy. *Hypertens Res*, 2011, 34, s. 87–90.
- 2 Strauch, B. – Petrák, O. – Zelinka, T., et al.: Precise assessment of noncompliance with the antihypertensive therapy in patients with resistant hypertension using toxicological serum analysis. *J Hypertens*, 2013, 31, s. 2455–2461.
- 3 Simons, L. A. – Ortiz, M. – Calcino, G.: Persistence with antihypertensive medication: Australia wide experience. *Med J Aust*, 2008, 188, s. 224–227.
- 4 Gupta, A. K. – Arshad, S. – Poultier, N. R.: Compliance, safety and effectiveness of fixed dose combinations of antihypertensive agents: a meta-analysis. *Hypertension*, 2010, 55, s. 399–407.
- 5 Hess, G. – Hill, J. – Lau, H., et al.: Medication utilization patterns and hypertension-related expenditures among patients who were switched from fixed-dose to free-combination antihypertensive therapy. *P and T*, 2008, 11, s. 652–665.
- 6 Widimský, J. – Filipovský, J. – Ceral, J., et al.: Diagnostická a léčebné postupy u arteriální hypertenze – verze 2017. Doporučení České společnosti pro hypertenci. *Hypertenze a kardiovaskulární prevence*, 2018, suppl, s. 1–19.
- 7 Lonn, E. M. – Bosch, J. – Lopez-Jaramillo, P., et al.: Blood-pressure lowering in intermediate-risk persons without cardiovascular disease. *New Eng J Med*, 2016, 374, s. 2009–2020.
- 8 Wald, D. S. – Law, M. – Morris, J. K., et al.: Combination therapy versus monotherapy in reducing blood pressure: meta-analysis on 11,000 participants from 42 trials. *Am J Medicine*, 2009, 122, s. 290–300.
- 9 Julius, S. – Kjeldsen, S. E. – Weber, M., et al., for the VALUE trial group: Outcomes in hypertensive patients at high cardiovascular risk treated with regimens based on valsartan or amlodipine: the VALUE randomised trial. *Lancet*, 2004, 363, s. 2022–2031.
- 10 Corrao, G. – Nicotra, F. – Parodi, A., et al.: Cardiovascular protection by initial and subsequent combination of antihypertensive drugs in daily life practice. *Hypertension*, 2011, 5, s. 566–572.
- 11 Gradman, A. H. – Parisé, H. – Lefebvre, P., et al.: Initial combination therapy reduces the risk of cardiovascular events in hypertensive patients: a matched cohort study. *Hypertension*, 2013, 61, s. 309–318.
- 12 Simons, L. A. – Chung, E. – Ortiz, M.: Long term persistence with single-pill, fixed-dosed combination therapy versus two pills of amlodipine and perindopril for hypertension: Australian experience. *Current Medical Research and Opinion*, 2017, 33, s. 1783–1787.
- 13 Poulter, N. R. – Wedel, H. – Dahlöf, B., et al.: Role of blood pressure and other variables in the differential cardiovascular event rates noted in the Anglo-Scandinavian Cardiac Outcomes Trial-Blood Pressure Lowering Arm (ASCOT-BPLA). *Lancet*, 2005, 366, s. 907–913.
- 14 Jamerson, K. – Weber, M. A. – Bakris, G. L., et al.: Benazepril plus amlodipine or hydrochlorothiazide for hypertension in high-risk patients. *N Engl J Med*, 2008, 359, s. 2417–2428.

## Kombinační léčba nekomplikované hypertenze

MUDr. Eva Tůmová, Ph.D. Centrum preventivní kardiologie, III. interní klinika 1. LF UK a VFN, Praha

- 1 Rapsomaniki, E. – Timmis, A. – George, J., et al.: Blood pressure and incidence of twelve cardiovascular diseases: lifetime risks, healthy life-years lost, and age-specific associations in 1,25 million people. *Lancet*, 2014, 383, s. 1899–1911.
- 2 Williams, B. – Mancia, G. – Spiering, W., et al.: ESC Scientific Document Group: 2018 ESC/ESH Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH). *Eur Heart J*, 2018, 39, s. 3021–3104.
- 3 Villeco, A. S. – Cocc, C. – Di Emidio, M.: Blood pressure control and weight loss in overweight or obese patients with previously treated or untreated mild to moderate hypertension given valsartan: An open-label study comparing pretreatment and posttreatment values. *Curr Ther Res Clin Exp*, 2004, 65, s. 172–184.
- 4 Hagendorff, A. – Kurz, I. – Müller, A., et al.: Evaluation of effectiveness and safety of amlodipine/valsartan/hydrochlorothiazide single-pill combination therapy in hypertensive patients: an observational study. *J Drug Assess*, 2014, 3, s. 1–9.
- 5 Messerli, F. H.: Vasodilatory edema: a common side effect of antihypertensive therapy. *Am J Hypertens*, 2001, 14, s. 978–979.
- 6 Calhoun, D. A. – Lacourcière, Y. – Chiang, Y. T., et al.: Triple antihypertensive therapy with amlodipine, valsartan, and hydrochlorothiazide: a randomized clinical trial. *Hypertension*, 2009, 54, s. 32–39.

# Základní změny v doporučených postupech léčby dyslipidemií z roku 2019

prof. MUDr. Hana Rosolová, DrSc. Centrum preventivní kardiologie, II. interní klinika LF UK a FN v Plzni

- 1 Mach, E. – Baigent, C. – Catapano, A. L., et al.; Task Force Members: 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk. The Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and European Atherosclerosis Society (EAS). *European Heart Journal*, 2019, s. 1–78, doi:10.1093/euroheartj/ehz455.
- 2 Vrablik, M. – Pitha, J. H. – Bláha, V., et al.: Stanovisko výboru České společnosti pro aterosklerózu k doporučením ESC/EAS pro diagnostiku a léčbu dyslipidemí z roku 2019. *Athero Rev*, 2019, 4, s. 19–30.
- 3 Catapano, A. L. – Graham, I. – De Backer, G., et al.; Task Force Members: 2016 ESC/EAS Guidelines for the Management of Dyslipidaemias. *European Heart Journal*, 2016, 37, s. 2999–3058.

## Duální protidestičková léčba v primární a sekundární prevenci ischemické choroby srdeční

MUDr. Ivo Varvařovský, Ph.D. Kardiologické centrum Agel, Pardubice

- 1 Zhao, S. – Zhong, Z. – Qi, G.: Effects of cilostazol-based triple antiplatelet therapy versus dual antiplatelet therapy after coronary drug-eluting stent implantation: an updated meta-analysis of the randomized controlled trials. *Clin Drug Investig*, 2019, 39, s. 1–13.
- 2 Leon, M. B. – Baim, D. S. – Popma, J. J.: A clinical trial comparing three antithrombotic-drug regimens after coronary artery stenting. *N Engl J Med*, 1998, 339, s. 1665–1671.
- 3 Bertrand, M. E. – Rupprecht, H. J. – Urban, P.: Double-blind study of the safety of clopidogrel with and without a loading dose in combination with aspirin compared with ticlopidine in combination with aspirin after coronary stenting. The clopidogrel aspirin stent international cooperative study (CLASSICS). *Circulation*, 2000, 102, s. 624–629.
- 4 CURE Investigators: Effects of clopidogrel in addition to aspirin in patients with acute coronary syndromes without ST-segment elevation. *N Engl J Med*, 2001, 345, s. 494–502.
- 5 Mehta, S. – Yusuf, S. – Peters, R. J. G.: Effects of pre-treatment with clopidogrel and aspirin followed by long-term therapy in patients undergoing percutaneous coronary intervention: the PCI-CURE study. *Lancet*, 2001, 358, s. 527–533.
- 6 Lewis, B. S. – Mehta, S. R. – Fox, K. A. A.: Benefit of clopidogrel according to timing of percutaneous coronary intervention in patients with acute coronary syndromes: further results from the CURE study. *Am Heart J*, 2005, 150, s. 1177–1184.
- 7 Steinhubl, S. R. – Berger, P. B. – Tift Mann, J. III: Early and sustained dual oral antiplatelet therapy following percutaneous coronary intervention: a randomized controlled trial. *JAMA*, 2002, 288, s. 2411–2420.
- 8 Sabatine, M. S. – Cannon, C. P. – Gibson, M. C.: Effect of clopidogrel pretreatment before percutaneous coronary intervention in patients with ST-elevation myocardial infarction treated with fibrinolytics. The PCI-CLARITY study. *JAMA*, 2005, 294, s. 1224–1232.
- 9 Moa, L. – Jian, C. – Changzhi, L.: Cytochrome CYP2C19 polymorphism and risk of adverse clinical events in clopidogrel-treated patients: a meta-analysis based on 23035 subjects. *Arch Cardiovasc Dis*, 2013, 106, s. 517–527.
- 10 Niitsu, Y. – Jakubowski, J. A. – Sugidachi, A.: Pharmacology of CS-747 (prasugrel, LY640315), a novel, potent antiplatelet agent with in vivo P2Y<sub>12</sub> receptor antagonist activity. *Semin Thromb Hemost*, 2005, 31, s. 184–194.
- 11 Husted, S. – Emanuelsson, H. – Heptinstall, S.: Pharmacodynamics, pharmacokinetics, and safety of the oral reversible P2Y<sub>12</sub> antagonist AZD6140 with aspirin in patients with atherosclerosis: a double-blind comparison to clopidogrel with aspirin. *Eur Heart J*, 2006, 27, s. 1038–1047.
- 12 Wiviott, S. D. – Braunwald, E. – McCabe, C. H.: Prasugrel versus clopidogrel in patients with acute coronary syndrome. *N Engl J Med*, 2007, 357, s. 2001–2015.
- 13 Wiviott, S. D. – Desai, N. – Murphy, S. A.: Efficacy and safety of intensive antiplatelet therapy with prasugrel from TRITON-TIMI 38 in a core clinical cohort defined by worldwide regulatory agencies. *Am J Cardiol*, 2011, 108, s. 905–911.
- 14 Montalescot, G. – Wiviott, S. D. – Braunwald, E.: Prasugrel compared with clopidogrel in patients undergoing percutaneous coronary intervention for ST-elevation myocardial infarction (TRITON-TIMI 38): double-blind, randomised controlled trial. *Lancet*, 2009, 373, s. 723–731.
- 15 Wilcox, R. – Iqbal, K. – Costigan, T.: An analysis of TRITON-TIMI 38, based on the 12 month recommended length of therapy in the European label for prasugrel. *Curr Med Res Opin*, 2014, 30, s. 2193–2205.
- 16 Montalescot, D. – Bolognese, L. – Dudek, D.: Pretreatment with prasugrel in non-ST-segment elevation acute coronary syndromes. *N Engl J Med*, 2013, 369, s. 999–1010.
- 17 Wallentin, L. – Becker, R. C. – Budaj, A.: Ticagrelor versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med*, 2009, 361, s. 1045–1057.
- 18 Steg, P. G. – James, S. – Harrington, R. A.: Ticagrelor versus clopidogrel in patients with ST-elevation acute coronary syndromes intended for reperfusion with primary percutaneous coronary intervention. *Circulation*, 2010, 122, s. 2131–2141.
- 19 Abtan, J. – Bhatt, D. L. – Elbez, Y.: Residual ischemic risk and its determinants in patients with previous myocardial infarction and without prior stroke or TIA: insights from the REACH registry. *Clin Cardiol*, 2016, 39, s. 670–677.
- 20 Roe, M. T. – Armstrong, P. W. – Fox, K. A.: Prasugrel versus clopidogrel for acute coronary syndromes without revascularization. *N Engl J Med*, 2012, 367, s. 1297–1309.
- 21 Bonaca, M. P. – Bhatt, D. L. – Cohen, M.: Long-term use of ticagrelor in patients with prior myocardial infarction. *N Engl J Med*, 2015, 372, s. 1791–1800.
- 22 Bonaca, M. P. – Bhatt, D. L. – Steg, P. G.: Ischaemic risk and efficacy of ticagrelor in relation to time from P2Y<sub>12</sub> inhibitor withdrawal in patients with prior myocardial infarction: insights from PEGASUS-TIMI 54. *Eur Heart J*, 2016, 37, s. 1133–1142.
- 23 Bonaca, M. P. – Bhatt, D. L. – Storey, R. F.: Ticagrelor in prevention of ischemic events after myocardial infarction in patients with peripheral artery disease. *J Am Coll Cardiol*, 2016, 67, s. 719–728.
- 24 Valgimigli, M. – Bueno, H. – Byrne, R. A.: 2017 ESC focused update on dual antiplatelet therapy in coronary artery disease developed in collaboration with EACTS. *Eur Heart J*, 2018, 39, s. 213–254.
- 25 Motovská, Z. – Hlinomaz, O. – Miklik, R.: Prasugrel versus ticagrelor in patients with acute myocardial infarction treated with primary percutaneous coronary intervention: multicenter randomized PRAGUE-18 Study. *Circulation*, 2016, 134, s. 1603–1612.
- 26 Motovská, Z. – Hlinomaz, O. – Kala, P.: 1-year outcomes of patients undergoing primary angioplasty for myocardial infarction treated with prasugrel versus ticagrelor. *J Am Coll Cardiol*, 2018, 71, s. 371–381.
- 27 Schupke, S. – Neumann, F. J. – Menichelli, M.: Ticagrelor or prasugrel in patients with acute coronary syndromes. *N Engl J Med*, 2019, 381, s. 1524–1534.
- 28 Sibbing, D. – Aradi, D. – Jacobshagen, C.: Guided de-escalation of antiplatelet treatment in patients with acute coronary syndrome undergoing percutaneous coronary intervention (TROPICAL-ACS): a randomised, open-label, multicentre trial. *Lancet*, 2017, 390, s. 1747–1757.
- 29 Sibbing, D. – Gross, L. – Trenk, D.: Age and outcomes following guided de-escalation of antiplatelet treatment in acute coronary syndrome patients undergoing percutaneous coronary intervention: results from the randomized TROPICAL-ACS trial. *Eur Heart J*, 2018, 39, s. 2749–2758.
- 30 Neumann, F. J. – Sousa-Uva, M. – Ahlsson, A.: 2018 ESC/EACTS guidelines on myocardial revascularization. *EuroIntervention*, 2019, 14, s. 1435–1534.
- 31 Vranckx, P. – Valgimigli, M. – Juni, P.: Ticagrelor plus aspirin for 1 month, followed by ticagrelor monotherapy for 23 months vs aspirin monotherapy for 12 months after implantation of a drug-eluting stent: a multicentre, open-label, randomised superiority trial. *Lancet*, 2018, 392, s. 940–949.
- 32 Kim, C. – Hong, S. J. – Shin, D. H.: Randomized evaluation of ticagrelor monotherapy after 3-month dual-antiplatelet therapy in patients with acute coronary syndrome treated with new-generation sirolimus-eluting stents: TICO trial rationale and design. *Am Heart J*, 2019, 212, s. 45–52.
- 33 The ASCEND Study Collaborative Group: Effects of aspirin for primary prevention in persons with diabetes mellitus. *N Engl J Med*, 2018, 379, s. 1529–1539.
- 34 Mc Neil, J. J. – Wolfe, R. – Woods, R. L.: Effect of aspirin on cardiovascular events and bleeding in the healthy elderly. *N Engl J Med*, 2018, 379, s. 1509–1518.
- 35 Gaziano, J. M. – Brotons, C. – Coppolecchia, R.: Use of aspirin to reduce risk of initial cardiovascular events in patients at moderate risk of cardiovascular disease (ARRIVE): a randomised, double-blind, placebo-controlled trial. *Lancet*, 2018, 392, s. 1036–1046.
- 36 Capodanno, D. – Ingala, S. – Calderone, D., et al.: Aspirin for the primary prevention of cardiovascular disease: latest evidence. *Expert Rev Cardiovasc Ther*, 2019, 17, s. 633–643.
- 37 Bhatt, D. L. – Fox, K. A. A. – Hacke, W.: Clopidogrel and aspirin versus aspirin alone for the prevention of atherosclerotic events. *N Engl J Med*, 2006, 354, s. 1706–1717.

## Současné poznatky o možnostech léčby srdečního selhání se zachovanou ejekční frakcí

doc. MUDr. Filip Málek, Ph.D., MBA Ambulance srdečního selhání a hypertenze, Kardiovaskulární centrum, Nemocnice Na Homolce, Praha

- 1 Pieske, B. – Tschöpe, C. – deBoer, R. A., et al.: How to diagnose heart failure with preserved ejection fraction: the HFA-PEFF diagnostic algorithm: a consensus recommendation from HFA of the ESC. *Eur Heart J*, 2019, 00, s. 1–21.
- 2 Steinberg, B. A. – Zhao, X. – Heidenreich, P. A., et al.: Trends in patients hospitalized with heart failure and preserved left ventricular ejection fraction: prevalence, therapies, and outcomes. *Circulation*, 2012, 126, s. 65–75.
- 3 Solomon, S. D. – Dobson, J. – Pocock, S., et al.: Influence of nonfatal hospitalization for heart failure on subsequent mortality in patients with chronic heart failure. *Circulation*, 2007, 116, s. 1482–1487.
- 4 Lam, C. S. – Donal, E. – Kraigher-Krainer, E., et al.: Epidemiology and clinical course of heart failure with preserved ejection fraction. *Eur J Heart Fail*, 2011, 13, s. 18–28.
- 5 Ponikowski, P. – Voors, A. A. – Anker, S. D., et al.: 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. The Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC). *Eur Heart J*, 2016, 37, s. 2129–2200.
- 6 Špinar, J. – Hradec, J. – Špinarová, L. – Vítová, J.: Souhrn Doporučených postupů ESC pro diagnostiku a léčbu akutního a chronického srdečního selhání z roku 2016. *Cor ret Vasa*, 2016, 58, s. e530–e568.
- 7 Massie, B. M. – Carson, P. E. – McMurray, J. J., et al.: Irbesartan in patients with heart failure and preserved ejection fraction. *N Engl J Med*, 2008, 359, s. 2456–2467.
- 8 Cleland, J. G. – Tendera, M. – Adamus, J., et al.: The Perindopril in Elderly People with Chronic Heart Failure (PEP-CHF) study. *Eur Heart J*, 2006, 27, s. 2338–2345.
- 9 Campbell, R. T. – Jhund, P. S. – Castagnoli, D., et al.: What have we learned about patients with heart failure and preserved ejection fraction from DIG-PEF, CHARM-Preserved, and I-PRESERVE? *J Am Coll Cardiol*, 2012, 60, s. 2349–2356.
- 10 Pitt, B. – Pfeffer, M. A. – Assman, S. F., et al., for the TOPCAT Investigators: Spironolactone for heart failure with preserved ejection fraction. *N Engl J Med*, 2014, 370, s. 1383–1392.
- 11 McKelvie, R. S. – Komajda, M. – McMurray, J., et al.: I-Preserve Investigators: Baseline plasma NT-proBNP and clinical characteristics: results from the irbesartan in heart failure with preserved ejection fraction

- trial. *J Card Fail*, 2010, 16, s. 128–134.
- 12 van Veldhuisen, D. J. – Linssen, G. C. – Jaarsma, T., et al.: B-type natriuretic peptide and prognosis in heart failure patients with preserved and reduced ejection fraction. *J Am Coll Cardiol*, 2013, 61, s. 1498–1506.
- 13 Yusuf, S. – Pfeffer, M. A. – Swedberg, K., et al., for the CHARM Investigators and Committees: Effects of candesartan in patients with chronic heart failure and preserved left-ventricular ejection fraction: the CHARM-Preserved Trial. *Lancet*, 2003, 362, s. 777–781.
- 14 Cleland, J. G. F. – Tendera, M. – Adamus, J., et al., for the PEP-CHF Investigators: The perindopril in elderly people with chronic heart failure (PEP-CHF) study. *Eur Heart J*, 2006, 27, s. 2338–2345.
- 15 Flather, M. D. – Shibata, M. C. – Coats, A. J. S., et al., for the SENIORS Investigators: Randomised trial to determine the effect of nebivolol on mortality and hospital admission in elderly patients with heart failure (SENIORS). *Eur Heart J*, 2005, 26, s. 215–225.
- 16 Ahmed, A. – Rich, M. W. – Fleg, J. L., et al., for the Ancillary Digitalis Investigation Group: Effect of digoxin on morbidity and mortality in diastolic heart failure Trial. *Circulation*, 2006, 114, s. 397–403.
- 17 Van Veldhuisen, D. J. – Cohen-Solal, A. – Bohm, M., et al., on behalf of the SENIORS Investigators: Beta-blockade with nebivolol in elderly heart failure patients with impaired and preserved left ventricular ejection fraction. *J Am Cardiol*, 2009, 53, s. 2150–2158.
- 18 Zamani, P. – Rawat, D. – Shiva-Kumar, P., et al.: Effect of inorganic nitrate on exercise capacity in heart failure with preserved ejection fraction. *Circulation*, 2015, 131, s. 371–380.
- 19 Bonderman, D. – Pretsch, I. – Steringer-Mascherbauer, R., et al.: Acute hemodynamic effects of roxiglitazone in patients with pulmonary hypertension associated with diastolic heart failure (DILATE-1): a randomized, double-blind, placebo-controlled, single-dose study. *Chest*, 2014, 146, s. 1274–1285.
- 20 Pieske, B. – Butler, J. – Filippatos, G., et al.: Rationale and design of the SOLuble guanylate Cyclase stimulatoR in heart Failure Studies (SOCRATES). *Eur J Heart Fail*, 2014, 16, s. 1026–1038.
- 21 Redfield, M. M. – Chen, H. H. – Borlaug, B. A., et al.: Effect of phosphodiesterase-5 inhibition on exercise capacity and clinical status in heart failure with preserved ejection fraction: a randomized clinical trial. *JAMA*, 2013, 309, s. 1268–1277.
- 22 Solomon, S. D. – McMurray, J. J. V. – Anand, I. S., et al., for the PARAGON-HF Investigators and Committees: Angiotensin-neprilysin inhibition in heart failure with preserved ejection fraction. *N Engl J Med*, 2019, 381, s. 1609–1620.
- 23 Zinman, B. – Wanner, C. – Lachin, J. M., et al.: Empagliflozin, cardiovascular outcomes and mortality in type 2 diabetes. *NEJM*, 2015, 373, s. 2177–2128.
- 24 McMurray, J. J. V. – Solomon, S. D. – Inzucchi, S. E., et al.: For the DAPA-HF Trial Investigators: Dapagliflozin in patients with heart failure and reduced ejection fraction. *N Engl J Med*, 2019, 381, s. 1995–2008.
- 25 EMPagliFllozin outcomeS Trial in Patients With chronic heart Failure With Preserved Ejection Fraction (EMPEROR-Preserved). Dostupné z: <https://clinicaltrials.gov/ct2/show/NCT03057951>, vyhledáno 21. 1. 2020.
- 26 Dapagliflozin Evaluation to Improve the Lives of Patients With Preserved Ejection Fraction Heart Failure (DELIVER). Dostupné z: <https://clinicaltrials.gov/ct2/show/NCT03619213>, vyhledáno 21. 1. 2020.
- 27 Andersen, M. J. – Ersbøll, M. – Bro-Jeppesen, J., et al.: Exercise hemodynamics in patients with and without diastolic dysfunction and preserved ejection fraction after myocardial infarction. *Circ Heart Fail*, 2012, 5, s. 444–451.
- 28 Maeder, M. T. – Thompson, B. R. – Htun, N., et al.: Hemodynamic determinants of the abnormal cardiopulmonary exercise response in heart failure with preserved left ventricular ejection fraction. *J Card Fail*, 2012, 18, s. 702–710.
- 29 Holland, D. J. – Prasad, S. B. – Marwick, T. H.: Prognostic implications of left ventricular filling pressure with exercise. *Circ Cardiovasc Imaging*, 2010, 3, s. 149–156.
- 30 Dorfs, S. – Zeh, W. – Hochholzer, W., et al.: Pulmonary capillary wedge pressure during exercise and long-term mortality in patients with suspected heart failure with preserved ejection fraction. *Eur J Heart Fail*, 2014, 16, s. 3103–3112.
- 31 Lutembacher, R.: De la stenose mitrale avec communication interauriculaire. *Arch Mal Coeur*, 1916, 9, s. 237–260.
- 32 Ewert, P. – Berger, F. – Nagdyman, N., et al.: Masked left ventricular restriction in elderly patients with atrial septal defects: a contraindication for closure? *Catheter Cardiovasc Interv*, 2001, 52, s. 177–180.
- 33 Søndergaard, L. – Reddy, V. – Kaye, D., et al.: Transcatheter treatment of heart failure with preserved or mildly reduced ejection fraction using a novel interatrial implant to limit left atrial pressure. *Eur J Heart Fail*, 2014, 16, s. 796–801.
- 34 Kaye, D. – Shah, S. J. – Borlaug, B. A., et al.: Effects of an interatrial shunt on rest and exercise hemodynamics: results of a computer simulation in heart failure. *J Card Fail*, 2014, 20, s. 212–221.
- 35 Malek, F. – Neuzil, P. – Gustafsson, F., et al.: Clinical outcome of transcatheter treatment of heart failure with preserved or mildly reduced ejection fraction using a novel implant. *Int J Cardiol*, 2015, 187, s. 227–228.
- 36 Hasenfuss, G. – Hayward, C. – Burkhoff, D., et al.: A transcatheter intracardiac shunt device for heart failure with preserved ejection fraction (REDUCE LAP-HF): A multicentre, open-label, single-arm, phase 1 trial. *Lancet*, 2016, 387, s. 1298–1304.
- 37 Feldman, T. – Mauri, L. – Kahwash, R., et al.: Transcatheter Interatrial Shunt Device for the Treatment of Heart Failure With Preserved Ejection Fraction (REDUCE LAP-HF) | Reduce Elevated Left Atrial Pressure in Patients With Heart Failure | A Phase 2, Randomized, Sham-Controlled Trial. *Circulation*, 2018, 137, s. 364–375.
- 38 Fudim, M. – Hernandez, A. F. – Felker, M.: Role of volume redistribution in the congestion of heart failure. *J Am Heart Assoc*, 2017, 6, pii: e006817.
- 39 Udelson, J. E. – Stevenson, L. W.: The future of heart failure, diagnosis, therapy and management. *Circulation*, 2016, 133, s. 2671–2686.
- 40 CCM in Heart Failure With Preserved Ejection Fraction (CCM-HF). Clinical Trials Gov, dostupné z: <https://clinicaltrials.gov/ct2/show/NCT03240237>, vyhledáno 21. 1. 2020.

## Co přinesla studie MARINER

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

1. interní kardioangiologická klinika FN u sv. Anny v Brně a LF MU, Brno

- 1 Spyropoulos, A. C. – Ageno, W. – Albert, G. W., et al.: Rivaroxaban for thrombo prophylaxis after hospitalization for medical illness. *N Engl J Med*, 2018, 379, s. 1118–1127.

## Mikronizovaný diosmin: další možnost léčby příznaků a projevů chronické žilní insuficience a léčby hemoroidálního onemocnění

MUDr. Jiří Slíva, Ph.D. Ústav farmakologie, 3. LF UK, Praha

- 1 European Pharmacopoeia. Diosmin. Dostupné z: [## Význam kyseliny acetylsalicylové v enterosolventní lékové formě](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjFejUjK_jAhVJSjAH-QctCK4QFjAAegQIARAC&url=http%3A%2F%2Fcdn.zhitiren.com%2Fuploads%2F1513840228%2FDiosmin_test_EP8.3.docx&usg=AOvWaw2HacGDz5zRMfZPZvSNicHm, 4297–4298, vyhledáno 22. 1. 2016.</p>
<p>2 Spanakis, M. – Kasmas, S. – Niopas, I.: Simultaneous determination of the flavonoid aglycones diosmetin and hesperetin in human plasma and urine by a validated GC/MS method: in vivo metabolic reduction of diosmetin to hesperetin. <i>Biomed Chromatogr</i>, 2009, 23, s. 124–131.</p>
<p>3 Chaumel, J. C.: Micronization: a method of improving the bioavailability of poorly soluble drugs. <i>Methods Find Exp Clin Pharmacol</i>, 1998, 20, s. 211–215.</p>
<p>4 Garner, R. C. – Garner, J. V. – Gregory, S., et al.: Comparison of the absorption of micronized (Daflon 500 mg) and nonmicronized 14C-diosmin tablets after oral administration to healthy volunteers by accelerator mass spectrometry and liquid scintillation counting. <i>J Pharm Sci</i>, 2002, 91, s. 32–40.</p>
<p>5 Coleridge-Smith, P. – Lok, C. – Ramelet, A. A.: Venous leg ulcer: a meta-analysis of adjunctive therapy with micronized purified flavonoid fraction. <i>Eur J Vasc Endovasc Surg</i>, 2005, 30, s. 198–208.</p>
<p>6 Cospite, M. – Dominici, A.: Double blind study of the pharmacodynamic and clinical activities of 5682 SE in venous insufficiency. Advantages of the new micronized form. <i>International Angiology</i>, 1988, 8, s. 61–65.</p>
<p>7 Amato, C.: Advantage of a micronized flavonoid fraction (Daflon 500 mg) in comparison with a nonmicronized diosmin. <i>Angiology</i>, 1994, 45, s. 531–536.</p>
<p>8 Allaert, F. A.: Meta-analysis of the impact of the principal venoactive drugs agents on malleolar venous edema. <i>Int Angiol</i>, 2012, 31, s. 310–315.</p>
<p>9 Lyseng-Williamson, K. A. – Perry, C. M.: Micronised purified flavonoid fraction: a review of its use in chronic venous insufficiency, venous ulcers and haemorrhoids. <i>Drugs</i>, 2003, 63, s. 71–100.</p>
<p>10 Bush, R. – Comerota, A. – Meissner, M., et al.: Recommendations for the medical management of chronic venous disease: The role of Micronized Purified Flavonoid Fraction (MPFF). <i>Phlebology</i>, 2017, 32, s. 3–19.</p>
</div>
<div data-bbox=)

MUDr. Jiří Slíva, Ph.D. Ústav farmakologie, 3. LF UK, Praha

- 1 Cole, A. T. – Hudson, N. – Liew, L. C., et al.: Protection of human gastric mucosa against aspirin-enteric coating or dose reduction? *Aliment Pharmacol Ther*, 1999, 13, s. 187–193.
- 2 Dammann, H. G. – Burkhardt, F. – Wolff, N.: Enteric coating of aspirin significantly decreases gastroduodenal mucosal lesions. *Aliment Pharmacol Ther*, 1999, 13, s. 1109–1114.