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- 6 **Očkování proti pneumokokům, rizikové skupiny**
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- 7 Endotypově specifická léčba omalizumabem**
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- 8 Nová směrnice WHO léčby multirezistentní tuberkulózy**
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Screening plicní rakoviny – už se nemůžeme vymlouvat

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- Humphrey, L. L. – Deffebach, M.: Screening for lung cancer with low-dose computed tomography: a systematic review to update the US Preventive services task force recommendation. *Ann Intern Med*, 2013, 159, s. 411–420.
- Bach, P. B.: Is our natural history model of lung cancer wrong? *Lancet Oncol*, 2008, 9, s. 693.
- Bach, P. B.: Overdiagnosis in lung cancer: different perspectives, definitions, implications. *Thorax*, 2008, 63, s. 298–300.
- Wasswa-Kintu, S., et al.: Relationship between reduced forced expiratory volume in one second and the risk of lung cancer: a systematic review and meta-analysis. *Thorax*, 2005, 60, s. 570–575, review.
- Salaün, M., et al.: Molecular predictive factors for progression of high-grade preinvasive bronchial lesions. *Am J Respir Crit Care Med*, 2008, 177, s. 880–886.
- Keane, J., et al.: Airway epithelial gene expression in the diagnostic evaluation of smokers with suspect lung cancer. *Nat Med*, 2007, 13, s. 361–366.
- Kurie, J. M. – Lee, J. S. – Morice, R. C., et al.: Autofluorescence bronchoscopy in the detection of squamous metaplasia and dysplasia in current and former smokers. *J Natl Cancer Inst*, 1998, 90, s. 991–995.
- Khorana, A. A. – Tullio, K. – Elson, P., et al.: Time to initial cancer treatment in the United States and association with survival overtime: An observational study. *PLoS One*, 2019, 14, e0213209.
- Pham, D. – Bhandrai, S., et al.: Lung cancer screening rates: Data from the lung cancer screening registry. 2018 ASCO Annual Meeting. *J Clin Oncol*, 2018, 36, suppl., abstrakt 6504.
- De Koning, H. J. – Erasmus, M. C.: Přednáška na International Association for the Study of Lung Cancer's (IASLC's) 19th World Conference on Lung Cancer (WSLC), Toronto, Kanada. 25. 9. 2108.
- Oudkerk, M. – Devaraj, A. – Vliegenthart, R., et al.: European position statement on lung cancer screening. *Lancet Oncol*, 2017, 18, s. e754–e766.
- Dostupné z: <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/CT-LungCaScr.pdf>, vyhledáno 21. 3. 2019.

Novinky v imunoterapii karcinomu plic

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- Howlander, N., et al., editors: SEER Cancer Statistics Review, 1975–2008. Bethesda (MD): National Cancer Institute; 2010. Dostupné z: http://seer.cancer.gov/csr/1975_2008/, vyhledáno 23. 4. 2019.
- www.svod.cz
- Skříčková, J. – Kadlec, B. – Vencíček, O.: Nematobuněčný karcinom plic. *Vnitřní lékařství*, 2017, 63, 11.
- Koubková, L.: Imunoterapie karcinomu plic. *Postgraduální medicína*, 2015, 17, příloha 1, s. 51–54.
- Socinski, M. – Creelan, B. – Horn, L., et al.: NSCLC, metastatic CheckMate 026: a phase 3 trial of nivolumab vs investigator's choice of platinum-based doublet chemotherapy as first-line therapy for stage IV recurrent programmed death ligand 1 (PD-L1)-positive NSCLC. *Ann Oncol*, 2016, 27.
- Borghaei, H. – Hellman, M. D. – Paz-Ares, L. G., et al.: Nivolumab (Nivo) + platinum-doublet chemotherapy (Chemo) vs chemo as first-line (1L) treatment (Tx) for advanced non-small cell lung cancer (NSCLC) with <1% tumor PD-L1 expression: Results from CheckMate 227. *J Clin Oncol*, 2018, 36, suppl., abstrakt 9001.
- Hellmann, M. D. – Ciuleanu, T. E. – Pluzanski, A., et al.: Nivolumab plus ipilimumab in lung cancer with a high tumor mutational burden. *N Engl J Med*, 2018, 378, s. 2093–2104.
- Herbst, R. S. – Baas, P. – Kim, D. W., et al.: Pembrolizumab versus docetaxel for previously treated, PD-L1-positive, advanced non-small-cell lung cancer (KEYNOTE-010): A randomised controlled trial. *Lancet*, 2016, 387, s. 1540–1550.
- Brahmer, J. R. – Rodriguez-Abreu, D. – Robinson, A. G., et al.: Progression after the next line of therapy (PFS2) and updated OS among patients (pts) with advanced NSCLC and PD-L1 tumor proportion score (TPS) ≥ 50% enrolled in KEYNOTE-024. *J Clin Oncol*, 2017, 35, suppl., abstrakt 9000.
- Roach, C. – Zhang, N. – Corigliano, E., et al.: Development of a companion diagnostic PD-L1 immunohistochemistry assay for pembrolizumab therapy in non-small-cell lung cancer. *Appl Immunohistochem Mol Morphol*, 2016, 24, s. 392–397.
- Reck, M. – Rodriguez-Abreu, D. – Robinson, A. G., et al.: Pembrolizumab versus chemotherapy for PD-L1-positive non-small-cell lung cancer. *N Engl J Med*, 2016, 375, s. 1823–1833.
- Lopes, G. – Wu, Y.-L. – Kudaba, I., et al.: Pembrolizumab (pembro) versus platinum-based chemotherapy (chemo) as first-line therapy for advanced/metastatic NSCLC with a PD-L1 tumor proportion score (TPS) ≥ 1%: Open-label, phase 3 KEYNOTE-042 study. *J Clin Oncol*, 2018, 36, suppl., abstrakt LBA4.
- Langer, C. J. – Gadgeel, S. M. – Borghaei, H., et al.: Carboplatin and pemetrexed with or without pembrolizumab for advanced, non-squamous non-small-cell lung cancer: A randomised, phase 2 cohort of the open-label KEYNOTE-021 study. *Lancet Oncol*, 2016, 17, s. 1497–1508.
- Gandhi, L. – Rodriguez-Abreu, D. – Gadgeel, S., et al.: Pembrolizumab plus chemotherapy in metastatic non-small-cell lung cancer. *N Engl J Med*, 2018, 378, s. 2078–2092.
- Paz-Ares, L. – Luft, A. – Vicente, D., et al.: Pembrolizumab plus chemotherapy for squamous non-small-cell lung cancer. *N Engl J Med*, 2018, 379, s. 2040–2051.
- Socinski, M. A. – Jotte, R. M. – Cappuzzo, F., et al.: Atezolizumab for first-line treatment of metastatic nonsquamous NSCLC. *N Engl J Med*, 2018, 378, s. 2288–2301.
- Jotte, R. M. – Cappuzzo, F. – Vynnychenko, I., et al.: IMpower131: Primary PFS and safety analysis of a randomized phase III study of atezolizumab + carboplatin + paclitaxel or nab-paclitaxel vs carboplatin + nab-paclitaxel as 1L therapy in advanced squamous NSCLC. *J Clin Oncol*, 2018, 36, suppl., abstrakt LBA9000.
- Socinski, M. A. – Jotte, R. M. – Cappuzzo, F., et al.: Overall survival (OS) analysis of IMpower150, a randomized Phase 3 study of atezolizumab (atezo) + chemotherapy (chemo) ± bevacizumab (bev) vs chemo + bev in 1L nonsquamous (NSQ) NSCLC. *J Clin Oncol*, 2018, 36, suppl., abstrakt 9002.
- Horn, L., et al.: First-Line atezolizumab plus chemotherapy in extensive-stage small-cell lung cancer. *N Engl J Med*, 2018, 379, s. 2220–2229.
- Antonia, S. J., et al.: Durvalumab after chemoradiotherapy in stage III non-small cell lung cancer. *N Engl J Med*, 2017, 377, s. 1919–1929.
- Antonia, S. J., et al.: Overall survival with durvalumab after chemoradiotherapy in stage III NSCLC. Article and Supplementary Appendix; *N Engl J Med*, 2018, 379, s. 2342–2350.
- Data FDA-US. Food and Drug Administration. FDA expands approval of Imfinzi to reduce the risk of non-small cell lung cancer progressing. Dostupné z: <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm597217.htm>, vyhledáno 20. 2. 2019.
- Spigel, D. – McLeod, M. – Hussein, M., et al.: Randomized results of fixed-duration (1-yr) vs continuous nivolumab in patients (pts) with advanced non-small cell lung cancer (NSCLC). ESMO 2017, 12970.
- Herbst, R. S. – Garon, E. B. – Kim, D., et al.: LBA63 Long-term survival in patients (pts) with advanced NSCLC in the KEYNOTE-010 study overall and in pts who completed 2 years of pembrolizumab (pembro). *Ann Oncol*, 2018, 29S, 8.

Lorlatinib – zařazení do aktuální léčebné praxe

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- Pešek, M., et al.: Správné postupy v léčbě ALK a ROS1 pozitivních karcinomů plic. Akreditovaný kurz ČLK.
- Shaw, A. T. – Felip, E. – Bauer, T. M., et al.: Lorlatinib in non-small-cell lung cancer with ALK or ROS1 rearrangement: an international, multicentre, open-label, single-arm first-in-man phase 1 trial. *Lancet Oncol*, 2017, 18, s. 1590–1599.
- Bauer, T. M. – Felip, E. – Solomon, B. J., et al.: Clinical management of adverse events associated with lorlatinib. *Oncologist*, 2019, 24, s. 1–8.
- Shaw, A. T. – Solomon, B. J. – Besse, B., et al.: ALK resistance mutations and efficacy of lorlatinib in advanced anaplastic lymphoma kinase-positive non-small-cell lung cancer. *J Clin Oncol*, 2019, 37, s. 1–11.
- Solomon, B. – Besse, B. – Bauer, T. M., et al.: Lorlatinib in patients with ALK-positive non-small-cell lung cancer: results from a global phase 2 study. *Lancet Oncol*, 2018, 19, s. 1654–1667.
- Soda, M. – Choi, Y. L. – Enomoto, M., et al.: Identification of the transforming EML4-ALK fusion gene in non-small-cell lung cancer. *Nature* 2007, 448, s. 561–566.
- Sasaki, T. – Rodig, S. J. – Chirieac, L. R., et al.: The biology and treatment of EML4-ALK non-small cell lung cancer. *Eur J Cancer*, 2010, 46, s. 1773–1780.
- Wu, et al.: Comparison of IHC, FISH and RT-PCR methods for detection of ALK rearrangements in 312 non-small cell lung cancer patients in Taiwan. *PLoS One*, 2013, 8, e70839.
- Teixidó, C. – Karachaliou, N. – Peg, V., et al.: Concordance of IHC, FISH and RT-PCR for EML4-ALK rearrangements. *Transl Lung Cancer Res*, 2014, 3, s. 70–74, doi: 10.3978/j.issn.2218-6751.2014.02.02.
- Gainor, J. F., et al.: Molecular mechanisms of resistance to first- and second-generation ALK inhibitors in ALK-rearranged lung cancer. *Cancer Discov*, 2016, 6, s. 1118–1133.
- Toyokawa, G. – Seto, T.: Updated evidence on the mechanisms of resistance to ALK inhibitors and strategies to overcome such resistance: clinical and preclinical data. *Oncol Res Treat*, 2015, 38, s. 291–298.
- Lin, J. J. – Riely, G. J. – Shaw, A. T.: Targeting ALK: precision medicine takes on drug resistance. *Cancer Discov*, 2017, 7, s. 137–155.
- Miyamoto, S. – Ikushima, S. – Ono, R., et al.: Transformation to small-cell lung cancer as a mechanism of acquired resistance to crizotinib and alectinib. *Jpn J Clin Oncol*, 2016, 46, s. 170–173.
- Ou, S. H., et al.: prezentace na ASCO 2017.
- Bergethon, K. – Shaw, A. T. – Ou, S. H., et al.: ROS1 rearrangements define a unique molecular class of lung cancers. *J Clin Oncol*, 2012, 30, s. 863–870.
- Takeuchi, K. – Soda, M. – Togashi, Y., et al.: RET, ROS1 and ALK fusions in lung cancer. *Nat Med*, 2012, 18, s. 378–381.

Imunoterapie v první linii léčby metastatického nemalobuněčného plicního karcinomu

MUDr. Leona Koubková Pneumologická klinika 2. LF UK a FN v Motole, Praha

- Yan, Y. – Kumar, A. B. – Finnes, H., et al.: Combining immune checkpoint inhibitors with conventional cancer therapy. *Front Immunol*, 2018, 9, s. 1739.
- Lazzari, C. – Karachaliou, N. – Bulotta, A., et al.: Combination of immunotherapy with chemotherapy and radiotherapy in lung cancer: is this the beginning of the end for cancer? *Ther Adv Med Oncol*,

- 2018, 10, 1758835918762094, publikováno online 6. 4. 2018.
- 3 Reck, M. – Rodríguez-Abreu, D. – Robinson, A. G., et al.: Updated analysis of KEYNOTE-024: pembrolizumab versus platinum-based chemotherapy for advanced non-small-cell lung cancer with PD-L1 tumor proportion score of 50% or greater. *J Clin Oncol*, 8. 1. 2019, JCO1800149.
 - 4 Brahmer, J. R. – Rodríguez-Abreu, D. – Robinson, A. G., et al.: Progression after the next line of therapy (PFS2) and updated OS among patients (pts) with advanced NSCLC and PD-L1 tumor proportion score (TPS) $\geq 50\%$ enrolled in KEYNOTE-024. 2017 ASCO Annual Meeting. *J Clin Oncol*, 2017, 35, suppl., abstrakt 9000.
 - 5 Lopes, G. – Wu, Y. L. – Kudaba, I., et al.: Pembrolizumab (pembro) versus platinum-based chemotherapy (chemo) as first-line therapy for advanced/metastatic NSCLC with a PD-L1 tumor proportion score (TPS) $\geq 1\%$: Open-label, phase 3 KEYNOTE-042 study. Late breaking abstract presentation at: 2018 ASCO Annual Meeting; 1.–5. 6. 2018; Chicago, IL.
 - 6 Garassino, M. C. – Gadgeel, S. – Esteban, E., et al.: Outcomes among patients with metastatic non-squamous NSCLC with liver metastasis or brain treated with pembrolizumab plus pemetrexed platinum: results from keynote 189. AACR Annual Meeting 2019; vol. 60. 29. 3.–3. 4. 2018; Georgia World Congress Center, Atlanta, GA.
 - 7 Papadimitrakopoulou, V. – Gadgeel, S. M. – Borghaei, H., et al.: First-line carboplatin and pemetrexed (CP) with or without pembrolizumab (pembro) for advanced non-squamous NSCLC: Updated results of KEYNOTE-021 cohort G. 2017 ASCO Annual Meeting. Poster Session (Board #420). *J Clin Oncol*, 2017, 35, suppl., abstrakt 9094.
 - 8 Gandhi, L. – Rodríguez-Abreu, D. – Gadgeel, S., et al.: Pembrolizumab plus chemotherapy in metastatic non-small-cell lung cancer. *N Engl J Med*, 16. 4. 2018.
 - 9 Abreu, D. R. – Garassino, M. C. – Esteban, E., et al.: KEYNOTE-189 study of pembrolizumab (pembro) plus pemetrexed (pem) and platinum vs placebo plus pem and platinum for untreated, metastatic, non-squamous NSCLC: Does choice of platinum affects outcomes? *An Oncol*, 2018, 29, suppl. 8, viii493–viii547, 10.1093/annonc/mdy292.
 - 10 Gadgeel, S. M. – Garassino, M. C. – Esteban, E., et al.: KEYNOTE-189: Updated OS and progression after the next line of therapy (PFS2) with pembrolizumab (pembro) plus chemo with pemetrexed and platinum vs placebo plus chemo for metastatic nonsquamous NSCLC. *J Clin Oncol*, 2019, 37, suppl., abstrakt 9013.
 - 11 Mok, T. S. K. – Wu, Y. L. – Kudaba, I., et al.: Final analysis of the phase III KEYNOTE-042 study: Pembrolizumab (Pembro) versus platinum-based chemotherapy (Chemo) as first-line therapy for patients (Pts) with PD-L1-positive locally advanced/metastatic NSCLC. *An Oncol*, 30, suppl. 2, duben 2019, mdz063.
 - 12 Reck, M., et al.: Primary PFS and safety analyses of a randomized phase III study of carboplatin + paclitaxel +/- bevacizumab, with or without atezolizumab in 1L non-squamous metastatic nsclC (IMPOWER150). *An Oncol*, 2017, 28, suppl. 11, mdx760.002.
 - 13 Socinski, M. A., et al.: Atezolizumab for first-line treatment of metastatic nonsquamous NSCLC. *N Engl J Med*, 2018, 378, s. 2288–2301.
 - 14 Socinski, M. A. – Rittmeyer, D. – Shapovalov, D., et al.: IMpower131: Progression-free survival (PFS) and overall survival (OS) analysis of a randomised Phase III study of atezolizumab + carboplatin + paclitaxel. *An Oncol*, 2018, 29, suppl. 8, říjen 2018.
 - 15 Paz-Ares, L. – Luft, A. – Vicente, D., et al.: Pembrolizumab plus chemotherapy for squamous non-small-cell lung cancer. *N Engl J Med*, 2018, 379, s. 2040–2051.
 - 16 Halmos, B. – Luft, A. – Majem, M., et al.: Choice of taxane and outcomes in the KEYNOTE-407 study of pembrolizumab plus chemotherapy for metastatic squamous NSCLC. Abstrakt MA10.08. IASLC 19th World Conference on Lung Cancer 2018.
 - 17 Jotte, R. M., et al.: IMpower131: Primary PFS and safety analysis of a randomized phase III study of atezolizumab + carboplatin + paclitaxel or nab-paclitaxel vs carboplatin + nab-paclitaxel as 1L therapy in advanced squamous NSCLC. *J Clin Oncol*, 2018, 36, suppl., abstr LBA9000.
 - 18 Borghaei, H. – Hellmann, M. D. – Paz-Ares, L. G., et al.: Nivolumab + ipilimumab, nivolumab + chemotherapy, and chemotherapy in chemo-naïve patients with advanced non-small cell lung cancer and <1% tumor PD-L1 expression: results from CheckMate 227. *J Clin Oncol*, 2018, 36, suppl., s. 9001–9001.
 - 19 Hellmann, M. D. – Ciuleanu, T. E. – Pluzanski, A., et al.: Nivolumab plus ipilimumab in lung cancer with a high tumor mutational burden. *N Engl J Med*, 2018, 378, s. 2093–2104.
 - 20 Reinmuth, N. – Cho, B. – Lee, K., et al.: Effect of post-study immunotherapy (IO) on overall survival (OS) outcome in patients with metastatic (m) NSCLC treated with first-line durvalumab (D) vs chemotherapy (CT) in the phase III MYSTIC study. Prezentováno na European Lung Cancer Congress; 11.–13. 4. 2019, Ženeva, Švýcarsko, abstrakt LBA4.
 - 21 Zhou, Y. – Lin, Z. – Zhang, X., et al.: First-line treatment for patients with advanced non-small-cell lung carcinoma and high PD-L1 expression: pembrolizumab or pembrolizumab plus chemotherapy. *J Immunother Cancer*, 2019, 7, s. 120.

Novinky v léčbě pokročilého karcinomu plic

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- 1 Skříčková, J. – Kadlec, B. – Venclíček, O.: Nematobuněčný karcinom plic. *Vnitřní Léč*, 2017, 63, s. 861–874
- 2 Skříčková, J. – Babičková, L. – Tomísková, M. – Kadlec, B.: Biologická léčba nematobuněčného karcinomu plic. *Interní Med*, 2011, 13, s. 7–8.
- 3 Lynch, T. J. – Bell, D. W. – Sordella, R., et al.: Activating mutations in the epidermal growth factor receptor under lying responsiveness of non-small-cell lung cancer to gefitinib. *N Engl J Med*, 2004, 350, s. 2129–2139.
- 4 Meador, C. B. – Jin, H. – de Stanchina, E., et al.: Optimizing the sequence of anti-EGFR-targeted therapy in EGFR-mutant lung cancer. *Mol Cancer Ther*, 2015, 14, s. 542–552.
- 5 Soejima, K. – Yasuda, H. – Hirano, T.: Osimertinib for EGFR T790M mutation-positive non-small cell lung cancer. *Expert Rev Clin Pharmacol*, 2017, 10, s. 31–38.
- 6 Socinski, M. A. – Villaruz, L. C. – Ross, J.: Under standing mechanisms of resistance in the epithelial growth factor receptor in non-small cell lung cancer and the role of biopsyt progression. *Oncologist*, 2017, 22, s. 3–11.
- 7 Mok, T. S. – Wu, Y. L. – Ahn, M. J., et al.: Osimertinib or platinum-pemetrexed in EGFR T790M-positive lung cancer. *N Engl J Med*, 2017, 376, s. 629–640.
- 8 Cross, D. A. – Ashton, S. E. – Ghiorghiu, S., et al.: AZD9291, an irreversible EGFR TKI, overcomes T790M-mediated resistance to EGFR inhibitors in lung cancer. *Cancer Discov*, 2014, 4, s. 1046–1061.
- 9 Zhang, H.: Osimertinib making a break through in lung cancer targeted therapy. *Onco Targets Ther*, 2016, 9, s. 5489–5493.
- 10 Zugazagotia, J. – Ferrer, I. – Paz-Ares, L.: Osimertinib in EGFR-mutant NSCLC: how to select patients and when to treat. *Lancet Oncol*, 2016, 17, s. 1622–1623.
- 11 Greig, S. L.: Osimertinib: first global approval. *Drugs*, 2016, 76, s. 263–273.
- 12 Paz-Ares, L. – de Marinis, F. – Dediu, M., et al.: Maintenance therapy with pemetrexed plus best supportive care versus placebo plus best supportive care after induction therapy with pemetrexed plus cisplatin for advanced non-squamous non-small-cell lung cancer (PARAMOUNT): a double-blind, phase 3, randomised controlled trial. *Lancet Oncol*, 2012, 13, s. 247–255.
- 13 Ramalingam, S. – Yang, J. C. – Lee, C. K., et al.: Osimertinib as first-line treatment for EGFR mutation-positive advanced NSCLC: update efficacy and safety results from two phase I expansion cohorts. Prezentováno na European Lung Cancer Conference, 13.–16. 4. 2016; Ženeva, Švýcarsko, abstrakt LBA 1.
- 14 Yang, J. C. – Ramalingam, S. – Jänne, P. A., et al.: Osimertinib (AZD9291) in pre-treated pts with T790M-positive advanced NSCLC: updated phase 1 (p1) and pooled phase 2 (p2) results. Prezentováno na European Lung Cancer Conference, 13.–16. 4. 2016; Ženeva, Švýcarsko, abstrakt LBA 2.
- 15 Ho, C. C. – Liao, W. Y. – Lin, C. A., et al.: Acquired BRAF V600E mutation as resistant mechanism after treatment with osimertinib. *J Thorac Oncol*, 2017, 12, s. 567–572.
- 16 Ou, S. H. – Agarwal, N. – Ali, S. M.: High MET amplification level as a resistance mechanism to osimertinib (AZD9291) in a patient that symptomatically responded to crizotinib treatment post-osimertinib progression. *Lung Cancer*, 2016, 98, s. 59–61.
- 17 Ortiz-Cuaran, S. – Scheffler, M. – Plenker, D., et al.: Heterogeneous mechanisms of primary and acquired resistance to third-generation EGFR inhibitors. *Clin Cancer Res*, 2016, 22, s. 4837–4847.
- 18 Wang, S. – Song, Y. – Yan, F. – Liu, D.: Mechanisms of resistance to third-generation EGFR tyrosine kinase inhibitors. *Front Med*, 2016, 10, s. 383–388.
- 19 Steuer, C. E. – Khuri, F. R. – Ramalingam, S. S., et al.: The next generation of epidermal growth factor receptor tyrosine kinase inhibitors in the treatment of lung cancer. *Cancer*, 2015, 121, s. E1–E6.
- 20 Thress, K. S. – Pawletz, C. P. – Felip, E., et al.: Acquired EGFR C797S mutation mediates resistance to AZD9291 in non-small cell lung cancer harboring EGFR T790M. *Nat Med*, 2015, 21, s. 560–562.
- 21 Soda, M. – Choi, Y. L. – Enomoto, M., et al.: Identification of the transforming EML4-ALK fusion gene in non-small-cell lung cancer. *Nature*, 2007, 448, s. 561–566.
- 22 Gainor, J. F. – Varghese, A. M. – Ou, S. H., et al.: ALK rearrangements are mutually exclusive with mutations in EGFR or KRAS: an analysis of 1,683 patients with non-small cell lung cancer. *Clin Cancer Res*, 2013, 19, s. 4273–4281.
- 23 Shaw, A. T. – Yeap, B. Y. – Mino-Kenudson, M., et al.: Clinical features and outcome of patients with non-small-cell lung cancer who harbor EML4-ALK. *J Clin Oncol*, 2009, 27, s. 4247–4253.
- 24 Choi, Y. L. – Soda, M. – Yamashita, Y., et al.: ALK Lung Cancer Study Group: EML4-ALK mutations in lung cancer that confer resistance to ALK inhibitors. *N Engl J Med*, 2010, 363, s. 1734–1739.
- 25 Camidge, D. R. – Bang, Y. J. – Kwak, E. L., et al.: Activity and safety of crizotinib in patients with ALK-positive non-small-cell lung cancer: updated results from a phase 1 study. *Lancet Oncol*, 2012, 13, s. 1011–1019.
- 26 Doebele, R. C. – Pilling, A. B. – Aisner, D. L., et al.: Mechanisms of resistance to crizotinib in patients with ALK gene rearranged non-small cell lung cancer. *Clin Cancer Res*, 2012, 18, s. 1472–1482.
- 27 Sasaki, T. – Koivunen, J. – Oginio, A., et al.: A novel ALK secondary mutation and EGFR signaling cause resistance to ALK kinase inhibitors. *Cancer Res*, 2011, 71, s. 6051–6060.
- 28 Mok, T., et al.: ASCEND-2: a single-arm, open-label, multicenter Phase 2 study of ceritinib in adult patients (pts) with ALK-rearranged (ALK+) non-small cell lung cancer (NSCLC) previously treated with chemotherapy and crizotinib (CRZ). Annual Meeting, J Clin Oncol, 2015, 33, suppl., s. 8059–8059.
- 29 Peters, S., et al.: Alectinib versus crizotinib in untreated ALK-positive non-small-cell lung cancer. *N Engl J Med*, 2017, 377, s. 829–838.
- 30 Raez, L. E. – Fein, S. – Podack, E. R.: Lung cancer immunotherapy. *Clin Med Res*, 2005, 3, s. 221–228.
- 31 Reck, M. – Rodríguez-Abreu, D. – Robinson, A. G., et al.: Pembrolizumab versus chemotherapy for PD-L1-positive non-small-cell lung cancer. *N Engl J Med*, 2016, 375, s. 1823–1833.
- 32 Pardoll, D. M.: The blockade of immune checkpoints in cancer immunotherapy. *Nat Rev Cancer*, 2012, 12, s. 252–264.
- 33 Paz-Ares, L. G. – Luft, A. – Tafreshi, A., et al.: Phase 3 study of carboplatin-paclitaxel/nab-paclitaxel (Chemo) with or without pembrolizumab (Pembro) for patients (Pts) with metastatic squamous (Sq) non-small cell lung cancer (NSCLC). *J Clin Oncol*, 2018, 36, suppl., abstrakt 105.
- 34 Fehrenbacher, L. – Spira, A. – Ballinger, M., et al.: Atezolizumab versus docetaxel for patients with previously treated non-small-cell lung cancer (POPLAR): a multicentre, open-label, phase 2 randomised controlled trial. *Lancet*, 2016, 387, s. 1837–1846.
- 35 Rittmeyer, A. – Barlesi, F. – Waterkamp, D., et al.: Atezolizumab versus docetaxel in patients with previously treated non-small-cell lung cancer (OAK): a phase 3, open-label, multicentre randomised controlled trial. *Lancet*, 2017, 389, s. 255–265.
- 36 Peters, S. – Gettinger, S. – Johnson, M. L., et al.: Phase II trial of atezolizumab as first-line or subsequent therapy for patients with programmed death-ligand 1 selected advanced non-small-cell lung cancer (BIRCH). *J Clin Oncol*, 2017, 35, s. 2781–2789.
- 37 Phase III IMpower150 Study Showed Genentech's TECENTRIQ (Atezolizumab) and Avastin (Bevacizumab) Plus Carboplatin and Paclitaxel Helped People With Advanced Lung Cancer Live Longer Compared to Avastin Plus Carboplatin and Paclitaxel. Dostupné z: <https://www.roche.com/investors/updates/inv-update-2018-03-26.htm>, vyhledáno 7. 3. 2019.
- 38 Garassino, M. – Paz-Ares Rodriguez, L., et al.: Durvalumab as third-line or later treatment for advanced non-small-cell lung cancer (ATLANTIC): an open-label, single-arm, phase 2 study. *Lancet Oncol*, 2018, 19, s. 521–536.
- 39 Antonia, S. – Villegas, A. – Daniel, D., et al.: Durvalumab after chemoradiotherapy in stage III non-small-cell lung cancer. *N Engl J Med*, 2017, 377, s. 1919–1929.
- 40 Ryška, A., et al.: Testování PD-L1 – nová výzva v prediktivní diagnostice nematobuněčných plicních karcinomů, *Acta Medicinæ*, 2016, 8, s. 37–40.
- 41 Dung T. – Le, et al.: Mismatch-repair deficiency predicts response of solid tumors to PD-1 blockade. *Science*, 2017, 357, s. 409–413.
- 42 Ryška, A.: Kdo bude profitovat z imunoterapie. *Terapie*, 2018, 6. Dostupné z: <http://terapie.digital/kongresy/kongresy-domaci>, vyhledáno 7. 3. 2019.
- 43 Rimm, D. L.: In discussion of: Tumor Mutational Burden (TMB) as a Biomarker for Clinical Benefit from Dual Immune Checkpoint Blockade With Nivolumab + Ipilimumab in First-Line Non-Small Cell Lung Cancer: Identification of TMB Cut off From CheckMate 568. Prezentováno na American Association for Cancer Research Annual Meeting, 14.–18. 4. 2018, Chicago, IL
- 44 Green, S., et al.: Immune signatures of non-small cell lung cancer. *J Thorac Oncol*, 2017, 12, s. 913–915.

Kauzální léčba cystické fibrózy

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- Alton, E. W. F. W. – Armstrong, D. K. – Ashby, D., et al.: UK Cystic Fibrosis Gene Therapy Consortium: Repeated nebulisation of non-viral CFTR gene therapy in patients with cystic fibrosis: a randomised, double-blind, placebo-controlled, phase 2b trial. *Lancet Respir Med*, 2015, 3, s. 684–691.
- Clancy, J. P. – Cotton, C. U. – Donaldson, S. H., et al.: CFTR modulator therapy: Current status, gaps and future directions. *J Cyst Fibros*, 2019, 18, s. 22–34.
- Cooney, A. L. – McCray, P. B. Jr. – Sinn, P. L.: Cystic fibrosis gene therapy: looking back, looking forward. *Genes (Basel)*, 2018, 9.
- Davies, J. C. – Wainwright, C. E. – Canny, G. J., et al.: VX08-770-103 (ENVISION) Study Group: Efficacy and safety of ivacaftor in patients aged 6 to 11 years with cystic fibrosis with a G551D mutation. *Am J Respir Crit Care Med*, 2013, 187, s. 1219–1225.
- Guimbellot, J. – Sharma, J. – Rowe, S. M.: Toward inclusive therapy with CFTR modulators: Progress and challenges. *Pediatr Pulmonol*, 2017, 52, s. S4–S14.
- Marangi, M. – Pistrutto, G.: Innovative therapeutic strategies for cystic fibrosis: moving forward to CRISPR technique. *Front Pharmacol*, 2018, 9, s. 396.
- Marson, F. A. L. – Bertuzzo, C. S. – Ribeiro, J. D.: Personalized or precision medicine? The example of cystic fibrosis. *Front Pharmacol*, 2017, 8, s. 390.
- Noordhoek, J. – Gulmans, V. – van der Ent, K., et al.: Intestinal organoids and personalized medicine in cystic fibrosis: a successful patient-oriented research collaboration. *Curr Opin Pulm Med*, 2016, 22, s. 610–616.
- Ramsey, B. W. – Davies, J. – McElvaney, N. G., et al.: VX08-770-102 Study Group: A CFTR potentiator in patients with cystic fibrosis and the G551D mutation. *N Engl J Med*, 2011, 365, s. 1663–1672.
- Rowe, S. M. – Daines, C. – Ringshausen, F. C., et al.: Tezacaftor-ivacaftor in residual-function heterozygotes with cystic fibrosis. *N Engl J Med*, 2017, 377, s. 2024–2035.
- Taylor-Cousar, J. L. – Munck, A. – McKone, E. F., et al.: Tezacaftor-ivacaftor in patients with cystic fibrosis homozygous for Phe508del. *N Engl J Med*, 2017, 377, s. 2013–2023.
- Wainwright, C. E. – Elborn, J. S. – Ramsey, B. W., et al.: TRAFFIC Study Group; TRANSPORT Study Group: Lumacaftor-ivacaftor in patients with cystic fibrosis homozygous for Phe508del CFTR. *N Engl J Med*, 2015, 373, s. 220–231.
- Dostupné z: www.cff.org/trials/pipeline, vyhledáno 1. 3. 2019.
- Dostupné z: www.ema.europa.eu/documents/product-information/kalydeco-epar-product-information_cs.pdf, vyhledáno 1. 3. 2019.
- Dostupné z: www.ema.europa.eu/documents/product-information/orkambi-epar-product-information_cs.pdf, vyhledáno 1. 3. 2019.
- Dostupné z: www.ema.europa.eu/documents/product-information/symkevi-epar-product-information_cs.pdf, vyhledáno 1. 3. 2019.
- Dostupné z: www.hitcf.org, vyhledáno 1. 3. 2019.
- Dostupné z: www.sukl.cz/modules/medication/detail.php?code=0185303&tab=prices, vyhledáno 1. 3. 2019.

Současnost a novinky v léčbě idiopatické plicní fibrózy

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- Raghu, G. – Remy-Jardin, M. – Myers, J. L., et al.: American Thoracic Society, European Respiratory Society, Japanese Respiratory Society, and Latin American Thoracic Society: Diagnosis of Idiopathic Pulmonary Fibrosis. An Official ATS/ERS/JRS/ALAT Clinical Practice Guideline. *Am J Respir Crit Care Med*, 2018, 198, s. e44–e68.
- Oldham, J. M. – Ma, S. F. – Martinez, F. J., et al.: IPFnet Investigators: TOLLIP, MUC5B, and the response to N-Acetylcysteine among individuals with idiopathic pulmonary fibrosis. *Am J Respir Crit Care Med*, 2015, 192, s. 1475–1482.
- Oldham, J. M. – Witt, L. J. – Adegunsoye, A., et al.: N-acetylcysteine exposures associated with improved survival in anti-nuclear antipody seropositive patients with usual interstitial pneumonia. *BMC Pulm Med*, 2018, 18, s. 30.
- Torrisi, S. E. – Vancheri, A. – Pavone, M., et al.: Comorbidities of IPF: How do They impact on prognosis. *Pulm Pharmacol Ther*, 2018, 53, s. 6–11.
- Kreuter, M. – Wijsenbeek, M. S. – Vasakova, M., et al.: Unfavourable effects of medically indicated oral anticoagulants on survival in idiopathic pulmonary fibrosis. *Eur Respir J*, 2016, 47, s. 1776–1784.
- Kreuter, M. – Bonella, F. – Maher, T. M., et al.: Effect of statins on disease-related outcomes in patients with idiopathic pulmonary fibrosis. *Thorax*, 2017, 72, s. 148–153.
- Shah, R. R. – Morganroth, J.: Update on cardiovascular safety of tyrosine kinase inhibitors: with a special focus on QT interval, left ventricular dysfunction and overall risk/benefit. *Drug Saf*, 2015, 38, s. 693–710.
- Crestani, B. – Huggins, J. T. – Kaye, M., et al.: Long-term safety and tolerability of nintedanib in patients with idiopathic pulmonary fibrosis: results from the open-label extension study, INPULSIS-ON. *Lancet Respir Med*, 2019, 7, s. 60–68.
- Fisher, M. – Nathan, S. D. – Hill, C., et al.: Predicting life expectancy for pirfenidone in idiopathic pulmonary fibrosis. *J Manag Care Spec Pharm*, 2017, 23, suppl. 3-b, s. S17–S24.
- Perez-Bogerd, S. – Wuyts, W. – Barbier, V., et al.: Short and long-term effects of pulmonary rehabilitation in interstitial lung diseases: a randomised controlled trial. *Respir Res*, 2018, 19, s. 182.
- Cheng, L. – Tan, B. – Yin, Y., et al.: Short- and long-term effects of pulmonary rehabilitation for idiopathic pulmonary fibrosis: a systematic review and meta-analysis. *Clin Rehabil*, 2018, 32, s. 1299–1307.
- Bell, E. C. – Cox, N. S. – Goh, N., et al.: Oxygen therapy for interstitial lung disease: a systematic review. *Eur Respir Rev*, 2017, 26, s. 160080.
- Noble, P. W. – Albera, C. – Bradford, W. Z., et al.: Pirfenidone in patients with idiopathic pulmonary fibrosis (CAPACITY): two randomised trials. *Lancet*, 2011, 377, s. 1760–1769.
- King, T. E. Jr. – Bradford, W. Z. – Castro-Bernardini, S., et al.: A phase 3 trial of pirfenidone in patients with idiopathic pulmonary fibrosis. *N Engl J Med*, 2014, 370, s. 2083–2092.

Antifibrotická léčba u idiopatické plicní fibrózy – kazuistika

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- Raghu, G. – Collard, H. R. – Egan, J. J.: American Thoracic Society, European Respiratory Society. Idiopathic pulmonary fibrosis: diagnosis and treatment. International consensus statement. *AJRCCM*, 2000, 161, s. 646–664.
- Lynch, III, J. P. – Wurfel, M. – Flaherty, K., et al.: Usual interstitial pneumonia. *Semin Respir Crit Care Med*, 2001, 22, s. 357–385.
- Raghu, G. – Lynch, III, J. P. – Wurfel, M. – Flaherty, K., et al.: Usual interstitial pneumonia. *Semin Respir Crit Care Med*, 2001, 22, s. 357–385.
- Remy-Jardin, M. – Lynch, III, J. P. – Wurfel, M. – Flaherty, K., et al.: Usual interstitial pneumonia. *Semin Respir Crit Care Med*, 2001, 22, s. 357–385.
- Myers, J. L., et al.: Diagnosis of idiopathic pulmonary fibrosis an official ATS/ERS/JRS/ALAT clinical practice guideline: executive summary. *Am J Respir Crit Care Med*, 2018, 198, s. 563–580.

Fixní inhalační trojkombinace v léčbě chronické obstrukční plicní nemoci

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- Global Initiative for Chronic Obstructive Lung Disease. Global strategy for diagnosis, management and prevention of chronic obstructive pulmonary disease. 2017. Dostupné z: www.goldcopd.org.
- Vestbo, J. – Papi, A. – Corradi, M., et al.: Single inhalare extrafine triple therapy versus long-acting muscarinic antagonist therapy for chronic obstructive pulmonary disease (TRINITY): a double-blind, parallel group, randomised controlled trial. *Lancet*, 2017, 389, s. 1919–1929.
- Švarc, M.: Postavení inhalačních kortikosteroidů v terapii chronické obstrukční plicní nemoci. *Acta medicinarum*, 2018, 8, s. 3–5.
- Pavord, I. D. – Lettis, S. – Locantore, N., et al.: Blood eosinophils and inhaled corticosteroid/long-acting beta-2 agonist efficacy in COPD. *Thorax*, 2016, 71, s. 118–125.
- Singh, D. – Papi, A. – Corradi, M., et al.: Single inhaler triple therapy versus inhaled corticosteroid plus long-acting β_2 -agonist therapy for chronic obstructive pulmonary disease (TRIOLOGY): a double-blind, parallel group, randomised controlled trial. *Lancet*, 2016, 388, s. 963–973.
- Papi, A. – Vestbo, J. – Fabbri, L., et al.: Extrafine inhaled triple therapy versus dual bronchodilator therapy in chronic obstructive pulmonary disease (TRIBUTE): a double-blind, parallel group, randomised controlled trial. *Lancet*, 2018, 391, s. 1076–1084.
- Singh, D. – Corradi, M. – Spinola, M., et al.: Triple therapy in COPD: new evidence with the extrafine fixed combination of beclomethasone dipropionate, formoterol fumarate, and glycopyrronium bromide. *Int J of COPD*, 2017, 12, s. 2917–2928.

Jak motivovat pacienty s CHOPN k dostatečné pohybové aktivitě

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- Biswas, A. – Oh, P. I. – Faulkner, G. E., et al.: Sedentary time and its association with risk for disease incidence, mortality, and hospitalization in adults: a systematic review and meta-analysis of entry time and disease incidence, mortality, and hospitalization. *An Intern Med*, 2015, 162, s. 123–132.
- Commission of the European Communities (2007). White paper on a strategy for Europe on nutrition, overweight and obesity related health issues. Dostupné z: http://ec.europa.eu/health/archive/ph_determinants/life_style/nutrition/documents/nutrition_wp_en.pdf, vyhledáno 25. 2. 2019.
- Tremblay, M. S. – Colley, R. C. – Saunders, T. J., et al.: Physiological and health implications of a sedentary life style. *Ap Physiol Nutr Metab*, 2010, 35, s. 725–740.
- Ding, D. – Lawson, K. D. – Kolbe-Alexander, T. L., et al.: Lancet Physical Activity Series 2 Executive Committee: The economic burden of physical inactivity: a global analysis of major non-communicable diseases. *Lancet*, 2016, 388, s. 1311–1324.
- Durstine, J. L. – Gordon, B. – Wang, Z., et al.: Chronic disease and the

link to physical activity. *J Sport Health Science*, 2013, 2, s. 3–11.

- 6 **Waschki, B. – Kirsten, A. – Holz, O., et al.**: Physical activity is the strongest predictor of all-cause mortality in patients with COPD: a prospective cohort study. *Chest*, 2011, 140, s. 331–342.
- 7 **Vaes, A. W. – Garcia-Aymerich, J. – Marott, J. L., et al.**: Changes in physical activity and all-cause mortality in COPD. *Eur Resp J*, 2014, 44, s. 1199–1209.
- 8 **Benzo, R. P. – Chang, C. H. – Farrell, M. H., et al. & NETT Research Group**: Physical activity, health status and risk of hospitalization in patients with severe chronic obstructive pulmonary disease. *Respiration*, 2010, 80, s. 10–18.
- 9 Global Initiative for Chronic Obstructive Lung Disease (2019). Global strategy for diagnosis, management, and prevention of chronic obstructive pulmonary disease. Dostupné z: <https://goldcopd.org/wp-content/uploads/2018/11/GOLD-2019-v1.7-FINAL-14Nov2018-WMS.pdf>, vyhledáno 25. 2. 2019.
- 10 **Pitta, F. – Troosters, T. – Spruit, M. A., et al.**: Characteristics of physical activities in daily life in chronic obstructive pulmonary disease. *Am J Resp Crit Care Med*, 2005, 171, s. 972–977.
- 11 **Vorriink, S. N. – Kort, H. S. – Troosters, T., et al.**: Level of daily physical activity in individuals with COPD compared with healthy controls. *Resp Res*, 2011, 12, s. 33.
- 12 **Watz, H. – Waschki, B. – Meyer, T., et al.**: Physical activity in patients with COPD. *Eur Resp J*, 2009, 33, s. 262–272.
- 13 **Troosters, T. – van der Molen, T. – Polkey, M., et al.**: Improving physical activity in COPD: towards a new paradigm. *Resp Res*, 2013, 14, s. 115.
- 14 **Jones, P. W. – Brusselle, G. – Dal Negro, R. W., et al.**: Health-related quality of life in patients by COPD severity within primary care in Europe. *Resp Med*, 2011, 105, s. 57–66.
- 15 **Rodó-Pin, A. – Balaňá, A. – Molina, L., et al.**: Level of daily physical activity in chronic obstructive pulmonary disease (COPD) patients according to GOLD classification. *Medicina Clínica*, 2017, 148, s. 114–117.
- 16 **Troosters, T. – Sciruba, F. – Battaglia, S., et al.**: Physical inactivity in patients with COPD, a controlled multi-center pilot-study. *Resp Med*, 2011, 104, s. 1005–1011.
- 17 **Shrikrishna, D. – Patel, M. – Tanner, R. J., et al.**: Quadriceps wasting and physical inactivity in patients with COPD. *Eur Resp J*, 2012, 40, s. 1115–1122.
- 18 **Van Remoortel, H. – Hornikx, M. – Demeyer, H., et al.**: Daily physical activity in subjects with newly diagnosed COPD. *Thorax*, 2013, 68, s. 962–963.

- 19 **Neumannová, K. – Janura, M. – Kováčiková, Z., et al.**: Analýza chůze u nemocných s chronickou obstrukční plicní nemocí. Olomouc, Univerzita Palackého, 2015.
- 20 **Watz, H. – Pitta, F. – Rochester, C. L., et al.**: An official European Respiratory Society statement on physical activity in COPD. *Eur Resp J*, 2014, 4, s. 1521–1537.
- 21 **Neumannová, K.**: Vliv rehabilitační léčby na úroveň pohybových aktivit u nemocných s chronickou obstrukční plicní nemocí. *Studia Pneumologica et Phthiseologica*, 2017, 77, s. 14–18.
- 22 **Van Buul, A. R. – Kasteleyn, M. J. – Chavannes, N. H., et al.**: Association between mening symptoms and physical activity in COPD: a systematic review. *Eur Resp Rev*, 2017, 26, s. 1–12.
- 23 **Neumannová, K. – Kolek, V. – Zatloukal, J., et al.**: *Asthma bronchiale a chronická obstrukční plicní nemoc – možnosti komplexní léčby z pohledu fyzioterapeuta*. Praha, Mladá fronta, 2018.
- 24 **Neumannová, K. – Zatloukal, J. – Koblížek, V.**: Doporučený postup pro plicní rehabilitaci. ČPFS ČLS JEP, sekce nemocí s bronchiální obstrukcí, 2014, dostupné z: www.pneumologie.cz/upload/1406799894.pdf, vyhledáno 25. 2. 2019.

Možnosti psychoterapie pacientů s chronickou obstrukční plicní nemocí

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- 1 **Ciaramicoli, A. P. – Ketcham, K.**: *Der Empathie – Faktor. Mitgefühl, Toleranz, Verständnis*. Taschenbuch, Munich, 2001.
- 2 **Janáčková, L.**: *CHOPN. Jak rozjít chat plicní nemocnění*. Mladá fronta, Praha, 2018.
- 3 **Kratochvíl, S.**: *Základy psychoterapie*. Portál, Praha, 2002.
- 4 **Spitzer, K. A. – Stefan, M. S. – Priya, A., et al.**: Participation in

pulmonary rehabilitation after hospitalization for chronic obstructive pulmonary disease among medicare beneficiaries. *Ann Am Thorac Soc*, 2019.

CHOPN na podkladě deficitu α_1 -antitrypsinu, poznatky z národního registru

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- 1 **Stoller, J. K. – Aboussouan, L. S.**: A review of α_1 -antitrypsin deficiency. *Am J Respir Crit Care Med*, 2012, 185, s. 246–259.
- 2 **Stoller, J. K.**: American Thoracic Society/European Respiratory Society Statement. *Am J Respir Crit Care Med*, 2003, 168, s. 818–900.
- 3 **Kelly, E. – Greene, C. M. – Carroll, T. P., et al.**: Alpha-1 antitrypsin deficiency. *Respir Med*, 2010, 104, s. 763–772.
- 4 **Campos, M. A. – Lascano, J.**: Current best practice in testing and augmentation therapy. *Ther Adv Resp Dis*, 2014, 8, s. 150–161.
- 5 **Vreim, C. E.**: Survival and FEV₁ decline in individuals with severe deficiency of alpha-1 antitrypsin. The Alpha-1 Antitrypsin Deficiency Registry Study Group. *Am J Respir Crit Care Med*, 1998, 158, s. 49–59.
- 6 **Stockley, R. A. – Parr, D. G. – Piitulainen, E., et al.**: Therapeutic efficacy of α_1 antitrypsin augmentation therapy on the loss of lung tissue: an integrated analysis of 2 randomised clinical trials using computed

tomography densitometry. *Respir Res*, 2010, 11, s. 136.

- 7 **Chapman, K. R. – Burdon, J. G. W. – Piitulainen, E., et al.**: Intravenous augmentation treatment and lung density in severe α_1 antitrypsin deficiency (RAPID): a randomised, double-blind, placebo-controlled trial. *Lancet*, 2015, 386, s. 360–368.

Relvar v běžné klinické praxi

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- 1 Diagnosis of diseases of chronic airflow limitation: Asthma, COPD and Asthma COPD Overlap Syndrome (ACOS). GINA 2014, GOLD 2014. Dostupné z: www.ginaasthma.org, vyhledáno 24. 5. 2019.
- 2 Global strategy for asthma management and prevention. Revised 2014. GINA 2014. Dostupné z: www.ginaasthma.org, vyhledáno 24. 5. 2019.
- 3 Global strategy for diagnosis, management and prevention of chronic obstructive pulmonary disease. GOLD Report, revised 2015. Dostupné z: www.goldcopd.org, vyhledáno 24. 5. 2019.
- 4 **Koblížek, V. – Chlumský, J. – Zindr, V., et al.**: *CHOPN. Doporučený postup ČPFS pro diagnostiku a léčbu chronické obstrukční plicní nemoci*. Praha, Maxdorf Jessenius, 2013.
- 5 *Zdraví plíc Evropy – fakta a čísla*. ERS, ELF, 2013, ČARO, 2014.
- 6 **Teřl, M. – Čáp, P. – Dvořáková, R., et al.**: Doporučený postup diagnostiky a léčby bronchiálního astmatu. ČPFS, ČSAKI, GEUM, 2015.
- 7 **MacNee, W. – Rabinowich, R. – Choudhury, G.**: Ageing and border between health and disease. *Eur Respir J*, 2014, 44, s. 1332–1352.
- 8 **Allen, A. – Bareille, P. J. – Rousell, V. M.**: Fluticasone furoate, a novel inhaled corticosteroid, demonstrated prolonged lung absorption

kinetics in man compared with inhaled fluticasone propionate. *Clin Pharmacokinet*, 2013, 52, s. 37–42.

- 9 **Kašáková, E. – Kašák, V.**: Inhalací systémy na českém trhu pro léčbu pacientů s chronickou obstrukcí průdušek. *Praktické lékárenství*, 2015, 11, s. 16–18.
- 10 **Svedsater, H., et al.**: Patient-reported outcomes with initiation of fluticasone furoate/vilanterol versus continuing usual care in the Asthma Salford Lung Study. *Respir Med*, 2018, 141, s. 198–206.

Očkování proti pneumokokům, rizikové skupiny

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- 1 **Kolek, V.**: Infekční pneumonie. In: Kolek, V. – Kašák, V., et al.: *Pneumologie*. Maxdorf Jessenius, 2014, s. 121–143.
- 2 **Froes, F. – Diniz, A. – Mesquita, M., et al.**: Hospital admissions of adults with community-acquired pneumonia in Portugal between 2000 and 2009. *Eur Resp J*, 2013, 41, s. 1141–1146.
- 3 **Petroušová, L. – Rožnovský, L.**: Pneumokokové infekce u dospělých a jejich prevence. *Med Praxi*, 2013, 10, s. 104–107.
- 4 **Bonten, M. J. – Huijts, S. M. – Boikenbass, M., et al.**: Polysaccharide conjugate vaccine against pneumococcal pneumonia in adults. *N Engl J Med*, 2015, 372, s. 1114–1125.
- 5 **Pittet, L. F. – Posfay-Barbe, K. M.**: Pneumococcal vaccines for children: a global public health priority. *Clin Microbiol Infect*, 2012, 18, s. 25–36.
- 6 **Rumlarová, Š.**: Kde mohlo pomoci očkování... *Med Praxi*, 2014, 11, s. 182–183.
- 7 Dostupné z: [https://www.prevenar.cz](http://www.prevenar.cz), vyhledáno 11. 6. 2019.

Eozinofil

MUDr. Mojmír Račanský | doc. MUDr. Jaromír Bystroň, CSc. Oddělení alergologie a klinické imunologie FN Olomouc

- 1 **Kopřiva, F.**: *Chronický eozinofilní zánět a asthma bronchiale*. Praha, Maxdorf, 2003.
- 2 **Weller, P. F., et al.**: Eosinophil biology and causes of eosinophilia. Dostupné online z: www.uptodate.com.
- 3 2018 GINA report, Global Strategy for Asthma Management and Prevention, 2018, www.ginasthma.org.
- 4 **Darveaux, J. – Busse, W. W.**: Biologics in asthma – the next step toward personalized treatment. *J Allergy Clin Immunol Pract*, 2015, 3, s. 152–160.
- 5 **Stokes, J. R. – Casale, T. B.**: Characterization of asthma endotypes: implication for therapy. *Ann Allergy Asthma Immunol*, 2016, 117, s. 121–125.
- 6 **Krings, J. G. – Mc Gregor, M. C. – Bacharier, L. B., et al.**: Biologics for severe asthma: treatment-specific effect are important in choosing a specific agent. *J Allergy Clin Immunol Pract*, 2019, 7, s. 1379–1392.
- 7 **Bochner, B. S.**: The eosinophil – For better or worse, in sickness and in health. *Ann Allergy Asthma Immunol*, 2018, 121, s. 150–155.
- 8 **Krishach, P. A. – Louviere, T. J. – Decker, T. S., et al.**: Protection against *Staphylococcus aureus* bacteremia-induced mortality depends on ILC2s and eosinophils. *GSI insight*, 2019, 4, 6.

Současný pohled na léčbu astmatu u dětí

prof. MUDr. Petr Pohunek, CSc. Pediatrická klinika 2. LF UK a FN v Motole, Praha

- 1 Papadopoulos, N. G., et al.: International consensus on (ICON) pediatric asthma. *Allergy*, 2012, 67, s. 976–997.
- 2 Global Initiative for Asthma: Asthma Management and Prevention for Adults and Children older than 5 Years – A Pocket Guide for Health Professionals – updated 2018.
- 3 Global Initiative for Asthma: Asthma Management and Prevention for Adults and Children older than 5 Years – A Pocket Guide for Health Professionals – updated 2019. Dostupné z: <https://ginasthma.org/wp-content/uploads/2019/04/GINA-2019-main-Pocket-Guide-wms.pdf>, vyhledáno 20. 5. 2019.
- 4 Global Initiative for Asthma: Diagnosis and Management of Difficult-to-treat and Severe Asthma in adolescent and adult patients – updated 2019. Dostupné z: <https://ginasthma.org/wp-content/uploads/2019/04/GINA-Severe-asthma-Pocket-Guide-v2.0-wms-1.pdf>, vyhledáno 20. 5. 2019.

Novinky v terapii astmatu dle GINA 2019

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- 1 Dusser, D. – Montani, D. – Chanez, P., et al.: Mild asthma: an expert review on epidemiology, clinical characteristics and treatment recommendations. *Allergy*, 2007, 62, s. 591–604.
- 2 Global Initiative for Asthma. Global strategy for asthma management and prevention. Aktualizováno 2018, www.ginasthma.org, vyhledáno 31. 3. 2109.
- 3 GINA Report upgrade 2019, <http://ginasthma.org/>.
- 4 O'Byrne, P. M. – FitzGerald, M. – Bateman, E. D., et al.: Inhaled combined budesonide plus formoterol as needed in mild asthma [article and supplementary appendix]. *N Engl J Med*, 2018, 378, s. 1865–1876.
- 5 Bateman, E. D. – Reddel, H. K. – O'Byrne, P. M., et al.: As-needed budesonide-formoterol versus maintenance budesonide in mild asthma [article and supplementary appendix]. *N Engl J Med*, 2018, 378, s. 1877–1887.
- 6 O'Byrne, P. M., et al.: The paradoxes of asthma management: time for new approach? *Eur Respir J*, 2017, 50, s. 1701103.

Aplikace „Těžké astma“ – nová pomůcka pro lékaře i pacienty

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Ing. Jakub Kohout Encode Solutions, s. r. o., Hradec Králové

- 1 Kagen, S. – Garland, A.: Asthma and allergy mobile apps in 2018. *Curr Allergy Asthma Rep*, 2019, 19, s. 6.
- 2 Chan, A. H. – Stewart, A. W. – Harrison, J., et al.: Using electronic monitoring devices to measure inhaler adherence: a practical guide for clinicians. *J Allergy Clin Immunol Pract*, 2015, 3, s. 335–349.
- 3 Teřl, M. – Sedlák, V. – Čáp, P., et al.: Asthma management: A new phenotype-based approach using presence of eosinophilia and allergy. *Allergy*, 2017, 72, s. 1279–1287.
- 4 GINA Difficult-to-treat and severe asthma in adolescents and adult patients. Diagnosis and management. Dostupné z: <https://ginasthma.org/wp-content/uploads/2019/04/GINA-Severe-asthma-Pocket-Guide-v2.0-wms-1.pdf>, vyhledáno 15. 6. 2019.

Endotypově specifická léčba omalizumabem

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- 1 Teřl, M. – Čáp, A. – Dvořáková P., et al.: Doporučený postup diagnostiky a léčby bronchiálního astmatu. *Geum*, 2015.
- 2 Chung, K. F. – Wenzel, S. E. – Brozek, J. L., et al.: International ERS/ATS guidelines on definition, evaluation and treatment of severe asthma TASK FORCE REPORT ERS/ATS GUIDELINES ON SEVERE ASTHMA Executive Summary. *Eur Respir J*, 2014, 43, s. 343–373.
- 3 Hekking, P. P. W. – Wener, R. R. – Amelink M., et al.: The prevalence of severe refractory asthma. *J Allergy Clin Immunol*, 2015, 135, s. 896–902.
- 4 Schleich, F. – Brusselle, G. – Louis, R., et al.: Heterogeneity of phenotypes in severe asthmatics. The Belgian Severe Asthma Registry (BSAR). *Respir Med*, 2014, 108, s. 1723–1732.
- 5 Meltzer, S. J.: Bronchial asthma as a phenomenon of anaphylaxis. *J Am Med Assoc*, 1910, 55, s. 1021–1024.
- 6 Rackemann, F. M.: Intrinsic asthma. *J Allergy*, 1940, 11, s. 147–162.
- 7 Bennich, H. H. – Ishizaka, K. – Johansson, S. G. O., et al.: Immunoglobulin E, a new class of human immunoglobulin. *Bull World Health Organ*, 1968, 38, s. 151–152.
- 8 Platts-Mills, T. A. E. – Heymann, P. W. – Commins, S. P., et al.: The discovery of IgE 50 years later. *Ann Allergy Asthma Immunol*, 2016, 116, s. 179–182.
- 9 Stone, K. D. – Prussin, C. – Metcalfe, D. D.: IgE, mast cells, basophils, and eosinophils. *J Allergy Clin Immunol*, 2010, 125, s. 73–80.
- 10 Snapper, C. M. – Finkelman, F. D. – Paul, W. E.: Regulation of IgG₁ and IgE production by interleukin 4. *Immunol Rev*, 1988, 102, s. 51–75.
- 11 Bacharier, L. D. – Geha, R. S.: Molecular mechanisms of IgE regulation. *J Allergy Clin Immunol*, 2000, 105, s. 547–558.
- 12 Mosmann, T. R. – Cherwinski, H. – Bond, M. W., et al.: Two types of murine helper T cell clone. I. Definition according to profiles of lymphokine activities and secreted proteins. *J Immunol*, 1986, 136, s. 2348–2357.
- 13 Loughnan, M. S. – Takatsu, K. – Harada, N., et al.: T-cell-replacing factor (interleukin 5) induces expression of interleukin 2 receptors on murine splenic B cells. *Proc Natl Acad Sci USA*, 1987, 84, s. 5399–5403.
- 14 Takatsu, K. – Kikuchi, Y. – Takahashi, T., et al.: Interleukin 5, a T-cell-derived B-cell differentiation factor also induces cytotoxic T lymphocytes. *Proc Natl Acad Sci USA*, 1987, 84, s. 4234–4238.
- 15 Howard, M. – Farrar, J. – Hilfiker, M., et al.: Identification of a T cell-derived B cell growth factor distinct from interleukin 2. *J Exp Med*, 1982, 155, s. 914–923.
- 16 Minty, A. – Chalon, P. – Derocq, J. M., et al.: Interleukin-13 is a new human lymphokine regulating inflammatory and immune responses. *Nature*, 1993, 362, s. 248–250.
- 17 Wills-Karp, M. – Luyimbazi, J. – Xu, X., et al.: Interleukin-13: central mediator of allergic asthma. *Science*, 1998, 282, s. 2258–2261.
- 18 Grünig, G. – Warnock, M. – Wakil, A. E., et al.: Requirement for IL-13 independently of IL-4 in experimental asthma. *Science*, 1998, 282, s. 2261–2263.
- 19 Goswami, R. – Kaplan, M. H.: A brief history of IL-9. *J Immunol*, 2011, 186, s. 3283–3288.
- 20 Coffman, R. L. – Carty, J. A.: T cell activity that enhances polyclonal IgE production and its inhibition by interferon-gamma. *J Immunol*, 1986, 136, s. 949–954.
- 21 Humbert, M. – Durham, S. R. – Ying, S., et al.: IL-4 and IL-5 mRNA and protein in bronchial biopsies from patients with atopic and nonatopic asthma: Evidence against „intrinsic“ asthma being a distinct immunopathologic entity. *Am J Respir Crit Care Med*, 1996, 154, s. 1497–1504.
- 22 Morrow Brown, H. – Edin, M. R. C. P. E.: Treatment of chronic asthma with prednisolone. Significance of eosinophils in the sputum. *Lancet*, 1958, 358, s. 1245–1247.
- 23 Wenzel, S. E. – Schwartz, L. B. – Langmack, E. L., et al.: Evidence that severe asthma can be divided pathologically into two inflammatory subtypes with distinct physiologic and clinical characteristics. *Am J Respir Crit Care Med*, 1999, 160, s. 1001–1008.
- 24 Harrington, L. E. – Hatton, R. D. – Mangan, P. R., et al.: Interleukin 17-producing CD4⁺ effector T cells develop via a lineage distinct from the T helper type 1 and 2 lineages. *Nat Immunol*, 2005, 6, s. 1123–1132.
- 25 Steinman, L.: A brief history of TH17, the first major revision in the TH1/TH2 hypothesis of T cell-mediated tissue damage. *Nat Med*, 2007, 13, s. 139–145.
- 26 Cosmi, L. – Liotta, F. – Annunziato, F.: Th17 regulating lower airway disease. *Curr Opin Allergy Clin Immunol*, 2016, 16, s. 1–6.
- 27 Anderson, G. P.: Endotyping asthma: new insights into key pathogenic mechanisms in a complex, heterogeneous disease. *Lancet*, 2008, 372, s. 1107–1119.
- 28 Neill, D. R. – Wong, S. H. – Bellosi, A., et al.: Nuocytes represent a new innate effector leukocyte that mediates type-2 immunity. *Nature*, 2010, 464, s. 1367–1370.
- 29 Kabata, H. – Moro, K. – Koyasu, S., et al.: Group 2 innate lymphoid cells and asthma. *Allergol Int*, 2015, 64, s. 227–234.
- 30 Katial, R. K. K. – Bensch, G. W. W. – Busse, W. W. W., et al.: Changing paradigms in the treatment of severe asthma: the role of biologic therapies. *J Allergy Clin Immunol Pract*, 2017, 5, s. 1–14.
- 31 Carr, T. F. – Zeki, A. A. – Kraft, M.: Eosinophilic and noneosinophilic asthma. *Am J Respir Crit Care Med*, 2018, 197, s. 22–37.
- 32 Brusselle, G. – Bracke, K.: Targeting immune pathways for therapy in asthma and chronic obstructive pulmonary disease. *Ann Am Thorac Soc*, 2014, 11, s. 322–328.
- 33 Vénéreau, E. – Ceriotti, C. – Bianchi, M. E.: DAMPs from cell death to new life. *Front Immunol*, 2015, 6, s. 1.
- 34 Oboki, K. – Nakae, S. – Matsumoto, K. – Saito, H.: IL-33 and airway inflammation. *Allergy Asthma Immunol Res*, 2011, 3, s. 81–88.
- 35 Lam, E. P. S. – Kariyawasam, H. H. – Rana, B. M. J., et al.: IL-25/IL-33-responsive TH2 cells characterize nasal polyps with a default TH17 signature in nasal mucosa. *J Allergy Clin Immunol*, 2016, 137, s. 1514–1524.
- 36 Dahlén, S. E.: TSLP in asthma – a new kid on the block? *N Engl J Med*, 2014, 22.
- 37 Martinon, F. – Burns, K. – Tschopp, J.: The inflammasome: a molecular platform triggering activation of inflammatory caspases and processing of proIL-1β. *Mol Cell*, 2002, 10, s. 417–426.
- 38 Samitas, K. – Zervas, E. – Gaga, M.: T2-low asthma: current approach to diagnosis and therapy. *Curr Opin Pulm Med*, 2017, 23, s. 48–55.
- 39 Robinson, D. – Humbert, M. – Buhl, R., et al.: Revisiting Type 2-high and Type 2-low airway inflammation in asthma: current knowledge and therapeutic implications. *Clin Exp Allergy*, 2017, 47, s. 161–175.
- 40 FitzGerald, M. – Bateman, E. D. – Boulet, L.-P., et al.: Global strategy for asthma management and prevention (GINA 2015).
- 41 Global Initiative For Asthma (GINA). DIFFICULT-TO-TREAT SEVERE ASTHMA in adolescent and adult patients GINA Pocket Guide For Health Professionals Diagnosis and Management, 2019.
- 42 Marshall, J. S. – Bell, E. B.: Induction of an auto-anti-IgE response in rats. I. Effects on serum IgE concentrations. *Eur J Immunol*, 1985, 15, s. 272–277.
- 43 Corne, J. – Djukanovic, R. – Thomas, L., et al.: The effect of intravenous administration of a chimeric anti-IgE antibody on serum IgE levels in atopic subjects: Efficacy, safety, and pharmacokinetics. *J Clin Invest*, 1997, 99, s. 879–887.
- 44 Busse, W. – Corren, J. – Lanier, B. Q., et al.: Omalizumab, anti-IgE recombinant humanized monoclonal antibody, for the treatment of severe allergic asthma. *J Allergy Clin Immunol*, 2001, 108, s. 184–190.
- 45 Solèr, M. – Matz, J. – Townley, R., et al.: The anti-IgE antibody omalizumab reduces exacerbations and steroid requirement in allergic

- asthmatics. *Eur Respir J*, 2001, 18, s. 254–261.
- 46 Buhl, R. – Soler, M. – Matz, J., et al.: Omalizumab provides long-term control in patients with moderate-to-severe allergic asthma. *Eur Respir J*, 2002, 20, s. 73–78.
- 47 Lowe, P. J. – Renard, D.: Omalizumab decreases IgE production in patients with allergic (IgE-mediated) asthma; PKPD analysis of a biomarker, total IgE. *Br J Clin Pharmacol*, 2011, 72, s. 306–320.
- 48 Kroegel, C. – Foerster, M. – Lerche, K., et al.: Long-term efficacy of omalizumab (OMA) for patients with severe allergic asthma (SAA). Clinical assessment and relationship to serum IgE concentrations. *Eur Respir J*, 2015, 46, s. PA2561.
- 49 Lin, C. H. – Cheng, S. L.: A review of omalizumab for the management of severe asthma. *Drug Des Devel Ther*, 2016, 10, s. 2369–2378.
- 50 Chan, M. A. – Gigliotti, N. M. – Dotson, A. L., et al.: Omalizumab may decrease IgE synthesis by targeting membrane IgE+ human B cells. *Clin Transl Allergy*, 2013, 3, s. 1–8.
- 51 Hoshino, M. – Ohtawa, J.: Effects of adding omalizumab, an anti-immunoglobulin E antibody, on airway wall thickening in asthma. *Respiration*, 2012, 83, s. 520–528.
- 52 Teach, S. J. – Gill, M. A. – Togias, A., et al.: Preseasonal treatment with either omalizumab or an inhaled corticosteroid boost to prevent fall asthma exacerbations. *J Allergy Clin Immunol*, 2015, 136, s. 1476–1485.
- 53 Bousquet, J. – Cabrera, P. – Berkman, N., et al.: The effect of treatment with omalizumab, an anti-IgE antibody, on asthma exacerbations and emergency medical visits in patients with severe persistent asthma. *Allergy*, 2005, 60, s. 302–308.
- 54 Brusselle, G. – Michils, A. – Louis, R., et al.: „Real-life“ effectiveness of omalizumab in patients with severe persistent allergic asthma: The PERSIST study. *Respir Med*, 2009, 103, s. 1633–1642.
- 55 Braunstahl, G. J. – Chen, C. W. – Maykut, R., et al.: The xPERIENCE registry: The „real-world“ effectiveness of omalizumab in allergic asthma. *Respir Med*, 2013, 107, s. 1141–1151.
- 56 Kirchnerová, O. R. – Valena, T. – Novosad, J. – Tefl, M.: Real-world effectiveness and safety of omalizumab in patients with uncontrolled severe allergic asthma from the Czech Republic. *Adv Dermatol Allergol*, 2019, 36, s. 34–43.
- 57 Bystron, J. – Hutyrková, B.: Vyhodnocení účinnosti léčby anti-IgE monoklonální protilátkou nejen u těžkého alergického astmatu. *Klin Farmakol Farm*, 2016, 30, s. 14–18.
- 58 Bystron, J.: Účinnost léčby anti-IgE monoklonální protilátkou nejen u těžkého alergického astmatu (problémy, skutečnost, naděje). *Allegie*, 2011, 13, s. 264–267.
- 59 Gevaert, P. – Calus, L. – Van Zele, T., et al.: Omalizumab is effective in allergic and nonallergic patients with nasal polyps and asthma. *J Allergy Clin Immunol*, 2013, 131, s. 110.e1–116.e1.
- 60 Cardet, J. C. – Casale, T. B.: New insights into the utility of omalizumab. *J Allergy Clin Immunol*, 2019, 143, s. 923–926.
- 61 Esquivel, A. – Busse, W. W. – Calatroni, A., et al.: Effects of omalizumab on rhinovirus infections, illnesses, and exacerbations of asthma. *Am J Respir Crit Care Med*, 2017, 196, s. 985–992.
- 62 Gill, M. A. – Liu, A. H. – Calatroni, A., et al.: Enhanced plasmacytoid dendritic cell antiviral responses after omalizumab. *J Allergy Clin Immunol*, 2018, 141, s. 1735.e9–1743.e9.
- 63 Bousquet, J. – Rabe, K. – Humbert, M., et al.: Predicting and evaluating response to omalizumab in patients with severe allergic asthma. *Respir Med*, 2007, 101, s. 1483–1492.
- 64 Hanania, N. A. – Wenzel, S. – Rosen, K., et al.: Exploring the effects of omalizumab in allergic asthma: An analysis of biomarkers in the EXTRA study. *Am J Respir Crit Care Med*, 2013, 187, s. 804–811.
- 65 Busse, W. – Spector, S. – Rosén, K., et al.: High eosinophil count: A potential biomarker for assessing successful omalizumab treatment effects. *J Allergy Clin Immunol*, 2013, 132, s. 485–486.
- 66 Tajiri, T. – Matsumoto, H. – Gon, Y., et al.: Utility of serum periostin and free IgE levels in evaluating responsiveness to omalizumab in patients with severe asthma. *Allergy*, 2016, 71, s. 1472–1479.
- 67 Mansur, A. H. – Srivastava, S. – Mitchell, V., et al.: Long-term clinical outcomes of omalizumab therapy in severe allergic asthma: Study of efficacy and safety. *Respir Med*, 2017, 124, s. 36–43.
- 68 Caminati, M. – Gatti, D. – Dama, A., et al.: Serum periostin during omalizumab therapy in asthma: a tool for patient selection and treatment evaluation. *Ann Allergy Asthma Immunol*, 2017, 119, s. 460–462.
- 69 Humbert, M. – Taillé, C. – Mala, L., et al.: Omalizumab effectiveness in patients with severe allergic asthma according to blood eosinophil count: the STELLAIR study. *Eur Respir J*, 2018, 51, s. 1702523.
- 70 Casale, T. B. – Luskin, A. T. – Busse, W., et al.: Omalizumab effectiveness by biomarker status in patients with asthma: evidence from PROSPERO, a prospective real-world study. *J Allergy Clin Immunol Pract*, 2019, 7, s. 156–164.
- 71 Kaplan, A. P. – Popov, T. A.: Biologic agents and the therapy of chronic spontaneous urticaria. *Curr Opin Allergy Clin Immunol*, 2014, 14, s. 347–353.
- 72 Ortega, H. G. – Meyer, E. – Brusselle, G., et al.: Update on immunogenicity in severe asthma: experience with mepolizumab. *J Allergy Clin Immunol Pract*, 2019.
- 73 Cox, L. – Platts-Mills, T. A. E. – Finegold, I., et al.: American Academy of Allergy, Asthma & Immunology/American College of Allergy, Asthma and Immunology Joint Task Force Report on omalizumab-associated anaphylaxis. *J Allergy Clin Immunol*, 2007, 120, s. 1373–1377.
- 74 Kim, H. L. – Leigh, R. – Becker, A.: Omalizumab: practical considerations regarding the risk of anaphylaxis. *Allergy Asthma Clin Immunol*, 2010, 6.
- 75 SÚKL: SPC – Souhrn údajů o přípravku Xolair. 2018, s. 1–33.
- 76 Doña, I. – Martín-Serrano, A. – Montañez, M. I., et al.: Epidemiology, mechanisms, and diagnosis of drug-induced anaphylaxis. *Front Immunol*, 2017, s. 8.
- 77 Long, A. – Rahmaoui, A. – Rothman, K. J., et al.: Incidence of malignancy in patients with moderate-to-severe asthma treated with or without omalizumab. *J Allergy Clin Immunol*, 2014, 134, s. 560–567.

Sarkoidóza – současná léčebná strategie

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- American Thoracic Society/European Respiratory Society. Statement on sarcoidosis. Joint Statement of the American Thoracic Society (ATS), the European Respiratory Society (ERS) and the World Association of Sarcoidosis and Other Granulomatous Diseases (WASOG) adopted by the ATS Board of Directors and the ERS Executive Committee. *Am J Respir Crit Care Med*, 1999, 160, s. 736–755.
- Baughman, R. P. – Culver, D. A. – Judson, M. A.: A concise review of pulmonary sarcoidosis. *AJRCCM*, 2011, 183, s. 573–581.
- Amin, E. N. – Closser, D. R. – Crouser, E. D.: Current best practice in the management of pulmonary and systemic sarcoidosis. *Thor Adv Respir Dis*, 2014, 8, s. 111–132.
- Baughman, R. – Teirstein, A. – Judson, M., et al.: Clinical characteristics of patients in a case control study of sarcoidosis. *Am J Respir Crit Care Med*, 2001, 164, s. 1885–1889.
- Korsten, P. – Strohmayer, K. – Baughman, R. P., et al.: Refractory pulmonary sarcoidosis: Proposal of a definition and recommendation for the diagnostic and therapeutic approach. *Clin Pulm Med*, 2016, 23, s. 67–75.
- Baughman, R. P. – Judson, M. A. – Wells, A.: The indications for the treatment of sarcoidosis: Wells Law. *Sarcoid Vasc Dif Lung Dis*, 2017, 34, s. 280–282.
- Panselinas, E. – Judson, M. A.: Acute pulmonary exacerbations of sarcoidosis. *Chest*, 2012, 142, s. 827–883.
- Baughman, R. B. – Grutters, J. C.: New treatment strategies for pulmonary sarcoidosis: antimetabolites, biological drugs, and other treatment approaches. *Lancet Respir Med*, 2015, 3, s. 813–822.
- Hoyle, C. – Dawson, J. – Mather, G.: Treatment of pulmonary sarcoidosis with streptomycin and cortisone. *Lancet*, 1955, 268, s. 638–643.
- Young, R. L. – Harkleroad, L. E. – Lordon, R. E., et al.: Pulmonary sarcoidosis: a prospective evaluation of glucocorticoid therapy. *Ann Intern Med*, 1970, 73, s. 207–212.
- Baughman, R. P. – Nunes, H. – Sweiss, N.: Established and experimental medical therapy of pulmonary sarcoidosis. *Eur Respir J*, 2013, 41, s. 1424–1438.
- Lošťáková, V. – Kolek, V. – Vašáková, M., et al.: Sarkoidóza – doporučený postup diagnostiky, terapie a sledování vývoje onemocnění. In: Kolek, V.: *Doporučené postupy ČPFS – II. rozšířené vydání* 2016, s. 270–290.
- Rubini, G. – Cappabina, S. – Altini, C., et al.: Current clinical use of 18 FDG – PET/CT in patients with thoracic and systemic sarcoidosis. *Radiol Med*, 2014, 119, s. 64–74.
- Korsten, P. – Mirsaedi, M. – Sweiss, N. J.: Nonsteroidal therapy of sarcoidosis. *Curr Opin Pulm Med*, 2013, 19, s. 516–523.
- Baughman, R. – Winget, D. – Lower, E.: Methotrexate is steroid sparing in acute sarcoidosis: results of a double blind, randomized trial. *Sarc Vasc Dif Lung Dis*, 2000, 17, s. 60–66.
- Baughman, R. P. – Lower, E. E.: Leflunomide for chronic sarcoidosis. *Sarc Vasc Dif Lung Dis*, 2004, 21, s. 43–48.
- Baughman, R. P. – Judson, M. A. – Costabel, U., et al.: Randomised, double blind, placebo controlled trial of infliximab in patients with chronic pulmonary sarcoidosis. *Chest*, 2005, 128, s. 202.
- Baughman, R. P. – Shipley, R. – Desai, S.: Changes in chest rentgenogram of sarcoidosis patients during a clinical trial of infliximab therapy: comparison of different methods of evaluation. *Chest*, 2006, 136, s. 526–535.
- Saketkoo, L. A. – Baughman, R. P.: Biologic therapies in the treatment of sarcoidosis. *Exp Rev Clin Immunol*, 2016, 12, s. 817–825.
- Sodhi, M. – Pearson, K. – White, E. S., et al.: Infliximab therapy rescues cyclophosphamide failure in severe central nervous system sarcoidosis. *Resp Med*, 2009, 103, s. 268–273.
- Elfferich, M. D. – Nelemans, P. J. – Ponds, R. W., et al.: Everyday cognitive failure in sarcoidosis: the prevalence and the effect of anti-TNF-alpha treatment. *Respiration*, 2010, 80, s. 212–219.
- Miller, C. T. – Sweiss, N. J. – Lu, Y.: FDG PET/CT evidence of effective treatment of cardiac sarcoidosis with adalimumab. *Clin Nuc Med*, 2016, 41, s. 417–420.
- Milman, N. – Graudal, N. – Loft, A., et al.: Effect of the TNF-alpha inhibitor adalimumab in patients with recalcitrant sarcoidosis: a prospective observational study using FDG-PET. *Clin Respir J*, 2012, 6, s. 238–247.
- Žarnayová, L. – Žurková, M. – Kolek, V.: Biologicky cílená léčba sarkoidózy. *ACTA MEDICINAE*, 2018, 6, s. 48–50.
- Bhama, K. – Stevens, R.: Pulmonary sarcoidosis following etanercept treatment. *Case Rep Rheumatol*, 2012, ID 724013.
- Sweiss, N. J. – Lower, E. E. – Mirsaedi, M., et al.: Rituximab in the treatment of refractory pulmonary sarcoidosis. *Eur Respir J*, 2014, 43, s. 1525–1528.
- Judson, M. A. – Baughman, R. P. – Costabel, U., et al.: Safety and efficacy of ustekinumab or golimumab in patients with chronic sarcoidosis. *Eur Respir J*, 2014, 44, s. 1296–1307.
- Brun, J. – Kofman, J. – Fainvre, J. M.: Le traitement corticostéroïde de la sarcoidose médiastino-pulmonaire: nécessité d'un traitement précoce et place de l'A.C.T.H. therapie (d'après un bilan de 75 observations). *Poumon Coeur*, 1972, 28, s. 321–324.
- Julian, M. W. – Shao, G. – Schlesinger, L. S., et al.: Nicotine treatment improves Toll-like receptor 2 and Toll-like receptor 9 responsiveness in active pulmonary sarcoidosis. *Chest*, 2013, 143, s. 461–470.

Nová směrnice WHO léčby multirezistentní tuberkulózy

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- Houben, R. M. G. J. – Dodd, P. J.: The global burden of latent tuberculosis infection: a re-estimation using mathematical modelling. *PLoS Med*, 2016, 13, e1002152, doi:10.1371/journal.pmed.1002152.
- Global tuberculosis report 2018. World Health Organization, Ženeva, 2018. Licence: CC BY-NC-SA 3.0 IGO.
- European Centre for Disease Prevention and Control/WHO Regional Office for Europe. *Tuberculosis surveillance and monitoring in Europe 2018–2016 data*. European Centre for Disease Prevention and Control, Stockholm, 2018.
- ÚZIS ČR. Základní přehled epidemiologické situace ve výskytu tuberkulózy v České republice v roce 2017. Dostupné z: <http://www.uzis.cz/katalog/zdravotnicka-statistika/tuberkuloza-respiracni-nemoci>, vyhledáno 10. 2. 2019.
- WHO treatment guidelines for multidrug- and rifampicin-resistant tuberculosis, 2018 update. Dostupné z: https://www.who.int/tb/features_archive/updated-treatment-guidelines-multidrug-rifampicin-resistant-TB/en/, vyhledáno 10. 2. 2019.

Uspodňování expektorace pomocí přístroje CoughAssist

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- 1 Anderson, J. L. – Hasney, K. M. – Beaumont, N. E.: Systematic review of techniques to enhance peak cough flow and maintain vital capacity in neuromuscular disease: the case for mechanical insufflation – exsufflation. *Physical Therapy Reviews*, 2005, 10, s. 25–33.
- 2 Gauld, L. M.: Airway clearance in neuromuscular weakness. *Dev Med-Child Neurol*, 2009, 51, s. 350–355.
- 3 Neumannová, K. – Zatloukal, J. – Koblížek, V.: Doporučený postup plicní rehabilitace. Dostupné z: <http://www.pneumologie.cz/guidelines/>, vyhledáno 31. 5. 2019.
- 4 Pryor, J. A. – Prasad, S. A.: *Physiotherapy for respiratory and cardiac problems: adults and paediatrics*. 2008, Edinburgh, Elsevier Health Sciences.
- 5 Fauroux, B. – Khirani, S.: Neuromuscular disease and respiratory physiology in children: putting lung function into perspective. *Respirology*, 2014, 19, s. 782–791.
- 6 Kravitz, R. M.: Airway clearance in Duchenne muscular dystrophy. *Pediatrics*, 2009, 123, s. S231–S235.
- 7 Neumannová, K.: Uspodňování expektorace u nemocných s Duchenneovou svalovou dystrofií. *Kazuistiky v alergologii, pneumologii a ORL*, 2016, 13, s. 22–26.
- 8 Neumannová, K. – Kolek, V. – Zatloukal, J. – Klimešová, I.: *Asthma bronchiale a chronická obstrukční plicní nemoc. Možnosti komplexní léčby z pohledu fyzioterapeuta*. 2018, Praha, Mladá fronta.
- 9 Neumannová, K. – Zatloukal, J. – Šlachťová, M.: Uspodňování expektorace pomocí airway clearance techniques u nemocných s výrazným oslabením dýchacích svalů. *Rehabilitace a fyzikální lékařství*, 2013, 20, s. 17–21.
- 10 Smolíková, L. – Máček, M.: *Respirační fyzioterapie a plicní rehabilitace*. 2009, Brno, Národní centrum ošetřovatelství a nelékařských zdravotnických oborů v Brně.
- 11 Chatwin, M.: Mechanical aids for secretion clearance. *Int J Resp Care*, 2009, 5, 50–53.
- 12 Neumannová, K. – Doušová, T. – Sedlák, V. – Zatloukal, J. – Kos, S. – Zatloukal, J.: Doporučený postup ČPFS a ČSDP pro dlouhodobou domácí léčbu poruch expektorace pomocí přístroje CoughAssist. *Česká a slovenská neurologie a neurochirurgie*, 2017, 80, s. 480–484.
- 13 Winck, J. C. – Gonçalves, M. R. – Lourenço, C., et al.: Effects of mechanical insufflation-exsufflation on respiratory parameters for patients with chronic airway secretion encumbrance. *Chest*, 2004, 126, s. 774–780.
- 14 Sancho, J. – Servera, E. – Diaz, J., et al.: Efficacy of mechanical insufflation-exsufflation in medically stable patients with amyotrophic lateral sclerosis. *Chest*, 2004, 125, s. 1400–1405.

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- 1 Spruit, M. A. – Singh, S. J. – Garvey, C., et al.: An official American Thoracic Society/European Respiratory Society statement: key concepts and advances in pulmonary rehabilitation. *Am J Respir Crit Care Med*, 2013, 188, s. e13–e64.
- 2 Neumannová, K. – Zatloukal, J. – Koblížek, V.: *Doporučený postup plicní rehabilitace*. Základní verze. Praha: Česká pneumologická a ftezeologická společnost, Česká lékařská společnost Jana Evangelisty Purkyně; 2014. Dostupné z: <http://www.pneumologie.cz/upload/1406799894.pdf>, vyhledáno 30. 5. 2019.
- 3 Decramer, M. – Demedts, M. – Rochette, F., et al.: Maximal transrespiratory pressures in obstructive lung disease. *Bull Eur Physiopathol Respir*, 1980, 16, s. 479–490.
- 4 Hodges, P. W. – Heijnen, I. – Gandevia, S. E.: Postural activity of the diaphragm reduced in humans when respiratory demand increases. *J Physiol*, 2001, 537, s. 999–1008.
- 5 Boutellier, U.: Respiratory fitness and exercise endurance in healthy humans. *Med Sci Sports Exerc*, 30, 1998, s. 1169–1172.
- 6 Holm, P. – Sattler, A. – Fregosi, R. F.: Endurance training of respiratory muscles improves cycling performance in fit young cyclists. *BMC Physiol*, 2004, 4, s. 9.
- 7 Weiner, P. – Azgad, Y., et al.: Inspiratory muscle training in patients with bronchial asthma. *Chest*, 1992, 102, s. 1357–1361.
- 8 Sawyer, E. H. – Clanton, T. L.: Improved pulmonary function and exercise tolerance with inspiratory muscle conditioning in children with cystic fibrosis. *Chest*, 1993, 104, s. 1490–1497.
- 9 Ries, A. L. – Bauldoff, G. S. – Carlin, B. W., et al.: Pulmonary rehabilitation: joint ACCP/AACVPR evidence-based clinical practice guidelines. *Chest*, 2007, 131, s. 4–42.
- 10 Cahalin, L. P. – Semigran, M. J. – Dec, G. W.: Inspiratory muscle training in patients with chronic heart failure awaiting cardiac transplantation: results of a pilot clinical trial. *Phys Ther*, 1997, 77, s. 830–838.
- 11 Wanke, T. – Toifl, K. – Merkle, M., et al.: Inspiratory muscle training in patients with Duchenne muscular dystrophy. *Chest*, 1994, 105, s. 475–482.
- 12 Nomori, H. – Kobayashi, R. – Fuyuno, G., et al.: Preoperative respiratory muscle training: assessment in thoracic surgery patients with special reference to postoperative pulmonary complications. *Chest*, 1994, 105, s. 1782–1788.
- 13 Aldrich, T. K. – Karpel, J. P. – Uhrlass, R. M., et al.: Weaning from mechanical ventilation: adjunctive use of inspiratory muscle resistive training. *Crit Care Med*, 1989, 17, s. 143–147.
- 14 American Thoracic Society/European Respiratory Society. ATS/ERS Statement on Respiratory Muscle Testing. *Am J Respir Crit Care Med*, 2002, 166, s. 518–624.
- 15 O'Brien, K. – Geddes, E. L. – Reid, W. D., et al.: Inspiratory muscle training compared to other rehabilitation interventions in chronic obstructive pulmonary disease: a systematic review update. *J Cardiopulm Rehabil Prev*, 2008, 28, s. 128–141.
- 16 Geddes, E. L. – O'Brien, K. – Reid, W. D., et al.: Inspiratory muscle training in adults with chronic obstructive pulmonary disease: an update of a systematic review. *Respir Med*, 2008, 102, s. 1715–1729.
- 17 Leidy, N. K. – Anton, S. F. – Berzon, R. A., et al.: An overview of health-related quality of life effects and outcomes in patients with COPD. *Eur Respir Rev*, 2002, 12, s. 61–62.