

Terapevticheskii Arkhiv 2017 vol.89 N8, pages 80-87

The Russian consensus on the diagnosis and treatment of chronic pancreatitis: Enzyme replacement therapy

Khatkov I., Maev I., Bordin D., Kucheryavyi Y., Abdulkhakov S., Alekseenko S., Alieva E., Alikhanov R., Bakulin I., Baranovsky A., Beloborodova E., Belousova E., Buriev I., Bystrovskaya E., Vertyankin S., Vinokurova L., Galperin E., Gorelov A., Grinevich V., Danilov M., Darvin V., Dubtsova E., Dyuzheva T., Egorov V., Efanov M., Zakharova N., Zagainov V., Ivashkin V., Izrailov R., Korochanskaya N., Kornienko E., Korobka V., Kokhanenko N., Livzan M., Loranskaya I., Nikolskaya K., Osipenko M., Okhlobystin A., Pasechnikov V., Plotnikova E., Polyakova S., Sablin O., Simanenkov V., Ursova N., Tsvirkun V., Tsukanov V., Shabunin A.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The Russian consensus on the diagnosis and treatment of chronic pancreatitis has been prepared on the initiative of the Russian Pancreatology Club to clarify and consolidate the opinions of Russian specialists (gastroenterologists, surgeons, and pediatricians) on the most significant problems of diagnosis and treatment of chronic pancreatitis. This article continues a series of publications explaining the most significant interdisciplinary consensus statements and deals with enzyme replacement therapy.

<http://dx.doi.org/10.17116/terarkh201789880-87>

Keywords

Chronic pancreatitis, Consensus, Diagnosis, Enzyme replacement therapy, Treatment

References

- [1] Linstone H, Turoff M. The Delphi method: Techniques and applications. URL: <http://www.is.njit.edu/pubs/delphibook/>
- [2] Khatkov IE, Maev IV, Abdulkhakov SR, et al. The Russian consensus on the diagnosis and treatment of chronic pancreatitis. *Terapevticheskij arkhiv.* 2017;89(2):105-113. (In Russ.). <https://doi.org/10.17116/terarkh2017892105-113>
- [3] Khatkov IE, Maev IV, Bordin DS, Kucheryavyy YuA et al. The Russian consensus on diagnostics and treatment of chronic pancreatitis: emphasis on the nutritive status and diet questions. *Farmateka.* 2016;S5-16:27-32. (In Russ.).
- [4] Khatkov IE, Maev IV, Bordin DS, Kucheryavyy YuA et al. Controversial issues of the Russian consensus on diagnostics and treatment of chronic pancreatitis. *Almanah clin. medicine.* 2016; 44(6):654-660. (In Russ.).
- [5] Khatkov IE, Maev IV, Bordin DS, Kucheryavyy YuA et al. Russian consensus on the diagnosis and treatment of chronic pancreatitis: treatment of abdominal pain. *Doctor.Ru.* 2017;2(131):38-45. (In Russ.).
- [6] Recommendations of the Russian Scientific Society of Gastroenterologists on the diagnostics and treatment of chronic pancreatitis (adopted at the 11th Congress of the RSSG, March 2, 2011, at the meeting of Russian Pancreatic Club). *Experimental and clinical gastroenterology* 2011;7:122-129. (In Russ.).
- [7] Maev I V, Kucheryavyy YuA, Andreev DN, Bideeva TV. Nutritional status in patients with chronic pancreatitis. *Terapevticheskij arkhiv.* 2016;88(2):81-89. (In Russ.). <https://doi.org/10.17116/terarkh201688281-89>

- [8] Hart PA, Conwell DL. Diagnosis of Exocrine Pancreatic Insufficiency. *Curr Treat Options Gastroenterol*. 2015;13(3):347-353. <https://doi.org/10.1007/s11938-015-0057-8>
- [9] Dumasy V, Delhaye M, Cotton F, Deviere J. Fat malabsorption screening in chronic pancreatitis. *Am J Gastroenterology*. 2004;99: 1350-1354. <https://doi.org/10.1111/j.1572-0241.2004.30661.x>
- [10] Bornman PC, Botha JF, Ramos JM et al. Guideline for the diagnosis and treatment of chronic pancreatitis. *S Afr Med J*. 2010; 100(12 Pt 2):845-860.
- [11] Conwell DL, Lee LS, Yadav D et al. Daniel S. American Pancreatic Association Practice Guidelines in Chronic Pancreatitis Evidence-Based Report on Diagnostic Guidelines. *Pancreas*. 2014;43(8):1143-1162 <https://doi.org/10.1097/MPA.0000000000000237>
- [12] Trang T, Chan J, Graham DY. Pancreatic enzyme replacement therapy for pancreatic exocrine insufficiency in the 21st century. *World J Gastroenterol*. 2014;20(33):11467-11485. <https://doi.org/10.3748/wjg.v20.i33.11467>
- [13] Afghani E1, Sinha A, Singh VK. An overview of the diagnosis and management of nutrition in chronic pancreatitis. *Nutr Clin Pract*. 2014;29(3):295-311. <https://doi.org/10.1177/0884533614529996>
- [14] Toouli J, Biankin AV, Oliver MR, Pearce CB, Wilson JS, Wray NH. Management of pancreatic exocrine insufficiency: Australasian Pancreatic Club recommendations. *Med J Aust*. 2010; 193:461-467.
- [15] Lohr JM, Oliver MR, Frulloni L. Synopsis of recent guidelines on pancreatic exocrine insufficiency. *United European Gastroenterology Journal*. 1(2):79-83. <https://doi.org/10.1177/2050640613476500>
- [16] Dominguez-Munoz JE, Iglesias-Garcia J, Vilarino-Insua M, et al. 13C-mixed triglyceride breath test to assess oral enzyme substitution therapy in patients with chronic pancreatitis. *Clin Gastroenterol Hepatol*. 2007;5:484-488. <https://doi.org/10.1016/j.cgh.2007.01.004>
- [17] Lindkvist B, Phillips ME, Dominguez-Munoz JE. Clinical, anthropometric and laboratory nutritional markers of pancreatic exocrine insufficiency: Prevalence and diagnostic use. *Pancreatology*. 2015;15(6):589-597. <https://doi.org/10.1016/j.pan.2015.07.001>
- [18] De-Madaria E, Abad-Gonzalez A, Aparicio JR. et al. The Spanish Pancreatic Club's recommendations for the diagnosis and treatment of chronic pancreatitis: part 2(treatment). *Pancreatology*. 2013;13:18-28. <https://doi.org/10.1016/j.pan.2012.11.310>
- [19] Maev IV, Kucheryavyy YuA. Replacement enzyme therapy in pancreatic insufficiency. Clinical perspectives of gastroenterology, hepatology. 2005;5:19-28. (In Russ.).
- [20] Ivashkin VT, Maev IV, Okhlobystin AV, Kucheryavyy YA, Trukhmanov AS, Sheptulin AA, Shifrin OS, Lapina TL, Osipenko MF, Simanenko VI, Khlynov IB, Alekseenko SA, Alekseeva OP, Chikunova MV. guidelines of the Russian gastroenterological Association on diagnostics and treatment of chronic pancreatitis. *Russian magazine. of gastroenterology., gepatol., koloproktol*. 2014;4:70-97. (In Russ.).
- [21] Hoffmeister A, Mayerle J, Beglinger C, Buchler MW, Bufler P, Dathe K, Folsch UR, Friess H, Izbicki J, Kahl S, Klar E, Keller J, Knoefel WT, Layer P, Loehr M, Meier R, Riemann JF, Runzi M, Schmid RM, Schreyer A, Tribl B, Werner J, Witt H, Mossner J, Lerch M. S3-Leitlinie Chronische Pankreatitis: Definition, Atiologie, Diagnostik, konservative, interventionell endoskopische und operative Therapie der chronischen Pankreatitis. Leitlinie der Deutschen Gesellschaft für Verdauungs- und Stoffwechselkrankheiten (DGVS). *Z Gastroenterol*. 2012;50(11):1176-1224. <https://doi.org/10.1055/s-0032-1325479>
- [22] Frulloni L, Falconi M, Gabbriellini A, Gaia E, et al. Italian consensus guidelines for chronic pancreatitis. *Dig Liver Dis*. 2010;42(Suppl. 6): S381-406. [https://doi.org/10.1016/S1590-8658\(10\)60682-2](https://doi.org/10.1016/S1590-8658(10)60682-2)
- [23] Halm U, Löser C, Lohr M, et al. A double-blind, randomized, multicentre, crossover study to prove equivalence of pancreatin minimicrospheres versus microspheres in exocrine pancreatic insufficiency. *Aliment Pharmacol Ther*. 1999;13(7):951-957.
- [24] Dominguez-Munoz JE. Pancreatic enzyme therapy for pancreatic exocrine insufficiency. *Curr Gastroenterol Rep*. 2007;9:116-122.
- [25] Bruno MJ, Rauws EA, Hoek FJ, Tytgat GN. Comparative effects of adjuvant cimetidine and omeprazole during pancreatic enzyme replacement therapy. *Dig Dis Sci*. 1994;39(5):988-992.
- [26] Sander-Struckmeier S, Beckmann K, Janssen-van Solingen G, Pollack P. Retrospective analysis to investigate the effect of concomitant use of gastric acid-suppressing drugs on the efficacy and safety of pancrelipase/pancreatin (CREON) in patients with pancreatic exocrine insufficiency. *Pancreas*. 2013;42(6):983-989. <https://doi.org/10.1097/MPA.0b013e31828784ef>
- [27] Vecht J, Symersky T, Lamers CB, Masclee AA. Efficacy of lower than standard doses of pancreatic enzyme supplementation therapy during acid inhibition in patients with pancreatic exocrine insufficiency. *J Clin Gastroenterol*. 2006;40:721-725.
- [28] Dominguez-Munoz JE. Chronic pancreatitis and persistent steatorrhea: what is the correct dose of enzymes? *Clin Gastroenterol Hepatol*. 2011;9(7):541-546. <https://doi.org/10.1016/j.cgh.2011.02.027>
- [29] Lerch MM, Pezzilli R, Vasileva G, Pap A, Varga M, Friess H. Randomised clinical trial: a 1-week, double-blind, placebocontrolled study of pancreatin 25 000 Ph. Eur. Minimicrospheres (Creon 25000 MMS) for pancreatic exocrine insufficiency after pancreatic surgery, with a 1-year open-label extension. *Aliment Pharmacol Ther*. 2013;37(7):691-702. <https://doi.org/10.1111/apt.12236>

- [30] Sikkens EC, Cahen DL, Kuipers EJ, Bruno MJ. Pancreatic enzyme replacement therapy in chronic pancreatitis. *Best Pract Res Clin Gastroenterol*. 2010;24(3):337-347. <https://doi.org/10.1016/j.bpg.2010.03.006>
- [31] Bordin D, Vinokurova L, Dubtsova E, Osipenko Yu. Chronic pancreatitis and the syndrome of excessive bacterial growth. *Vrach*. 2011;13:5-10. (In Russ.).
- [32] Fieker A, Philpott J, Armand M. Enzyme replacement therapy for pancreatic insufficiency: present and future. *Clin Exp Gastroenterol*. 2011;4:55-73. <https://doi.org/10.2147/CEG.S17634>
- [33] Quian Z, Fields CJ, Yu Y, Lutz S. Recent progress in engineering alpha/beta hydrolase-fold family members. *Biotechnol J*. 2007; 2(2):192-200.
- [34] Gheorghe C, Seicean A, Saftoiu A, Tantau M, Dumitru E, Jinga M, Negreanu L, Mateescu B, Gheorghe L, Ciocirlan M, Cijevschi C, Constantinescu G, Dima S, Diculescu M. Romanian Guidelines on the Diagnosis and Treatment of Exocrine Pancreatic Insufficiency. *J Gastrointestin Liver Dis*. 2015;24(1):117-123. <https://doi.org/10.15403/jgld.2014.1121.app>
- [35] Ramesh H, Reddy N, Bhatia S, et al. A 51-week, open-label clinical trial in India to assess the efficacy and safety of pancreatin 40000 enteric-coated minimicrospheres in patients with pancreatic exocrine insufficiency due to chronic pancreatitis. *Pancreatol*. 2013;13:133-139. <https://doi.org/10.1016/j.pan.2013.01.009>
- [36] Whitcomb DC, Lehman GA, Vasileva G et al. Pancrelipase delayed-release capsules (CREON) for exocrine pancreatic insufficiency due to chronic pancreatitis or pancreatic surgery: A double-blind randomized trial. *Am J Gastroenterol*. 2010;105:2276-2286. <https://doi.org/10.1038/ajg.2010.201>
- [37] Somaraju UR, Solis-Moya A. Pancreatic enzyme replacement therapy for people with cystic fibrosis. *Cochrane Database Syst Rev*. 2014;10:CD008227. <https://doi.org/10.1002/14651858.CD008227.pub2>
- [38] Pezzilli R, Andriulli A, Bassi C, Balzano G, Cantore M, Delle Fave G, Falconi M, Frulloni L. Exocrine pancreatic insufficiency in adults: A shared position statement of the Italian association for the study of the pancreas; the Exocrine Pancreatic Insufficiency collaborative (EPIc) Group. *World J Gastroenterol*. 2013;19(44): 7930-7946. <https://doi.org/10.3748/wjg.v19.i44.7930>
- [39] Bansi DS, Price A, Russell C, Sarner M. Fibrosing colonopathy in an adult owing to over use of pancreatic enzyme supplements. *Gut*. 2000;46(2):283-285.
- [40] Prescott P, Bakowski MT. Pathogenesis of fibrosing colonopathy: the role of methacrylic acid copolymer. *Pharmacoepidemiol Drug Saf*. 1999;8(6):377-384. [https://doi.org/10.1002/\(SICI\)1099-1557\(199910/11\)8:6377::AID-PDS448>3.0.CO;2-C](https://doi.org/10.1002/(SICI)1099-1557(199910/11)8:6377::AID-PDS448>3.0.CO;2-C)
- [41] Sack J, Blau H, Goldfarb D, Ben-Zaray S, Katznelson D. Hyperuricosuria in cystic fibrosis patients treated with pancreatic enzyme supplements. A study of 16 patients in Israel. *Isr J Med Sci*. 1980;16:417-419.
- [42] Ewald N, Kaufmann C, Raspe A, et al. Prevalence of diabetes mellitus secondary to pancreatic diseases (type 3c). *Diabetes Metab Res Rev*. 2012;28(4):338-342. <https://doi.org/10.1002/dmrr.2260>
- [43] Weitgasser R, Abrahamian H, Clodi M, Fortunat W, Hammer H. Position paper: Exocrine pancreatic insufficiency and diabetes mellitus. *Wien Klin Wochenschr*. 2012;124(Suppl.2):100-103. <https://doi.org/10.1007/s00508-01-0290-2>
- [44] Maev IV, Kucheryavyy YuA, Moskaleva AB. Chronic pancreatitis: myths and realities. *Pharmateka*. 2010;12:24-31. (In Russ.).
- [45] Frulloni L, Falconi M, Gabbriellini A et al. Italian consensus guidelines for chronic pancreatitis. *Dig Liver Dis*. 2010;42(suppl. 6):381-406. [https://doi.org/10.1016/S1590-8658\(10\)60682-2](https://doi.org/10.1016/S1590-8658(10)60682-2)