

1. Nassar DT, Habib OS, Mansour AA. Predictors of hypoglycemia in insulin-treated patients with type 2 diabetes mellitus in Basrah. *World J Diabetes*. 2016;7(18):470.
2. Seufert J, Pegelow K, Bramlage P. Efficacy and safety of insulin glargine added to a fixed-dose combination of metformin and a dipeptidyl peptidase-4 inhibitor: Results of the GOLD observational study. *Vasc Health Risk Manag*. 2013;9(1):711–7.
3. Shin S, Kim H. The effect of sitagliptin on cardiovascular risk profile in Korean patients with type 2 diabetes mellitus: A retrospective cohort study. *Ther Clin Risk Manag*. 2016;12:435–44.
4. Birkeland KI, Jørgensen ME, Carstensen B, Persson F, Gulseth HL, Thuresson M, et al. Cardiovascular mortality and morbidity in patients with type 2 diabetes following initiation of sodium-glucose co-transporter-2 inhibitors versus other glucose-lowering drugs (CVD-REAL Nordic): a multinational observational analysis. *Lancet Diabetes Endocrinol*. 2017;5(9):709–17.
5. Quah HMJ, Teo SHS, Yap HBG, Lim HB, Chow MH. Clinical audit on hypoglycaemic symptoms in type 2 diabetic patients in SingHealth Polyclinics. *Proc Singapore Healthc*. 2011;20(2):89–96.
6. Aloumanis K, Benroubi M, Sourmeli S, Drossinos V. Clinical outcomes and costs for patients with type 2 diabetes mellitus initiating insulin therapy in Greece: Two-year experience from the INSTIGATE study. *Prim Care Diabetes*. 2013;7(3):235–42.
7. Berntorp K, Haglund M, Larsen S, Petrukevitch A, Landin-Olsson M. Initiation of biphasic insulin aspart 30/70 in subjects with type 2 diabetes mellitus in a largely primary care-based setting in Sweden. *Prim Care Diabetes*. 2011;5(2):89–94.
8. Chen YJ, Yang CC, Huang LC, Chen L, Hwu CM. Increasing trend in emergency department visits for hypoglycemia from patients with type 2 diabetes mellitus in Taiwan. *Prim Care Diabetes*. 2015;9(6):490–6.
9. Cigrovski Berković M, Herman Mahečić D, Gradišer M, Bilić-Ćurčić I. Impact of health policy and practice on finding the best fit for patients with type 2 diabetes after metformin failure: Croatian pilot study. *Prim Care Diabetes*. 2017;11(3):265–72.
10. Bron M, Marynchenko M, Yang H, Yu AP, Wu EQ. Hypoglycemia, treatment discontinuation, and costs in patients with type 2 diabetes mellitus on oral antidiabetic drugs. *Postgrad Med*. 2012;124(1):124–32.
11. Digenio A, Karve S, Candrilli SD, Dalal M. Prandial insulin versus glucagon-like peptide-1 added to basal insulin: Comparative effectiveness in the community practice setting. *Postgrad Med*. 2014;126(6):49–59.
12. Lopez JMS, Bailey RA, Rupnow MFT. Demographic Disparities among Medicare Beneficiaries with Type 2 Diabetes Mellitus in 2011: Diabetes Prevalence, Comorbidities, and Hypoglycemia Events. *Popul Health Manag*. 2015;18(4):283–9.
13. Cobden D, Lee WC, Balu S, Joshi A V, Pashos CL. Health outcomes and economic impact of therapy conversion to a biphasic insulin analog pen among privately insured patients with type 2 diabetes mellitus. *Pharmacotherapy [Internet]*. 2007;27(7):948–62. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17594200>
14. Besen DB, Surucu HA, Koşar C. Self-reported frequency, severity of, and awareness of hypoglycemia in type 2 diabetes patients in Turkey. *PeerJ*. 2016;2016(12):1–14.
15. Walz L, Pettersson B, Rosenqvist U, Deleskog A, Journath G, Wändell P. Impact of symptomatic hypoglycemia on medication adherence, patient satisfaction with treatment, and glycemic control in patients with type 2 diabetes. *Patient Prefer Adherence*. 2014;8:593–601.
16. Lopez JMS, Annunziata K, Bailey RA, Rupnow MFT, Morisky DE. Impact of hypoglycemia on patients with type 2 diabetes mellitus and their quality of life, work productivity, and medication adherence. *Patient Prefer Adherence*. 2014;8:683–92.
17. Miao R, Wei W, Baser O, Xie L. Real world outcomes of adding rapid-acting insulin versus switching to analog premix insulin among US patients with type 2 diabetes treated with insulin glargine. *Patient Prefer Adherence*. 2013;7:951–60.
18. Montilla S, Marchesini G, Sammarco A, Trotta MP, Siviero PD, Tomino C, et al. Drug utilization, safety, and effectiveness of exenatide, sitagliptin, and vildagliptin for type 2 diabetes in the real world: Data from the Italian AIFA Anti-diabetics Monitoring Registry. *Nutr Metab Cardiovasc Dis*. 2014;24(12):1346–53.
19. Luk AOY, Ho TST, Lau ESH, Ko GTC, Ozaki R, Tsang CC, et al. Association of self-reported recurrent mild hypoglycemia with incident cardiovascular disease and all-cause mortality in patients with type 2 diabetes Prospective analysis of the Joint Asia Diabetes Evaluation Registry. *Med (United States)*. 2016;95(45):1–7.
20. Kim HM, Seong J-M, Kim J. Risk of hospitalization for hypoglycemia among older Korean people with diabetes mellitus. *Medicine (Baltimore)*. 2016;95(42):e5016.
21. Mondal SK, Dasgupta S, Mondal S, Das N. Incidence of and risk factors for severe hypoglycaemia in treated type 2 diabetes mellitus patients in. *Kathmandu Univ Med J*. 2014;5(3):18–23.
22. Mehta HB, Mehta V, Goodwin JS. Association of Hypoglycemia with Subsequent Dementia in Older Patients with Type 2 Diabetes Mellitus. *Journals Gerontol - Ser A Biol Sci Med Sci*. 2017;72(8):1110–6.
23. Mahar SA, Hasan MI, Khan MIH, Fawwad A, Hussain S, Maheshwary N, et al. Comparison of hypoglycaemia episodes in people with type-2 diabetes fasting in Ramadan, Treated with vildagliptin or sulphonylurea: Results of the Pakistani cohort of the VIRTUE study. *J Pak Med Assoc*. 2014;64(11):1297–302.
24. Abbatecola AM, Bo M, Barbagallo M, Incalzi RA, Pilotto A, Bellelli G, et al. Severe Hypoglycemia Is Associated With Antidiabetic Oral Treatment Compared With Insulin Analogs in Nursing Home Patients With Type 2 Diabetes and Dementia: Results From the DIMORA Study. *J Am Med Dir Assoc*. 2015;16(4):349.e7-349.e12.
25. Pandya N, Wei W, Meyers JL, Kilpatrick BS, Davis KL. Burden of sliding scale insulin use in elderly long-term care residents with type 2 diabetes mellitus. *J Am Geriatr Soc*. 2013;61(12):2103–10.

26. Curkendall SM, Zhang B, Oh KS, Williams SA, Pollack MF, Graham J. States : Analysis of a Health Insurance Database. *J Med Chem.* 2011;18(10):455–62.
27. Raju A, Shetty S, Cai B, D'Souza AO. Hypoglycemia incidence rates and associated health care costs in patients with type 2 diabetes mellitus treated with second-line linagliptin or sulfonylurea after metformin monotherapy. *J Manag Care Spec Pharm.* 2016;22(5):483–92.
28. Lin CH, Sheu WHH. Hypoglycaemic episodes and risk of dementia in diabetes mellitus: 7-year follow-up study. *J Intern Med.* 2013;273(1):102–10.
29. Min JY, Griffin MR, Hung AM, Grijalva CG, Greevy RA, Liu X, et al. Comparative Effectiveness of Insulin versus Combination Sulfonylurea and Insulin: a Cohort Study of Veterans with Type 2 Diabetes. *J Gen Intern Med.* 2016;31(6):638–46.
30. Sarkar U, Karter AJ, Liu JY, Moffet HH, Adler NE, Schillinger D. Hypoglycemia is more common among type 2 diabetes patients with limited health literacy: The diabetes study of northern California (distance). *J Gen Intern Med.* 2010;25(9):962–8.
31. Qiao Q, Johnsson K, Grandy S, Kostev K. Treatment Outcomes and Tolerability Following Initiation of GLP-1 Receptor Agonists among Type 2 Diabetes Patients in Primary Care Practices in Germany. *J Diabetes Sci Technol.* 2017;11(2):272–7.
32. Gehlert RR, Dogbey GY, Schwartz FL, Marling CR, Shubrook JH. Hypoglycemia in type 2 diabetes - More common than you think: A continuous glucose monitoring study. *J Diabetes Sci Technol.* 2015;9(5):999–1005.
33. Bo M, Gallo S, Zancocci M, Maina P, Balcet L, Bonetto M, et al. Prevalence , Clinical Correlates , and Use of Glucose-Lowering Drugs among Older Patients with Type 2 Diabetes Living in Long-Term Care Facilities. *J Diabetes Res.* 2015;2015:2–7.
34. Sakane N, Kotani K, Tsuzaki K, Nishi M, Takahashi K, Murata T, et al. Fear of hypoglycemia and its determinants in insulin-treated patients with type 2 diabetes mellitus. *J Diabetes Investig.* 2015;6(5):567–70.
35. Kobuke K, Yoneda M, Nakanishi S, Ohno H, Maeda S, Egusa G. Efficacy and safety of insulin degludec in Japanese patients with type 1 and type 2 diabetes: 24-week results from the observational study in routine clinical practice. *J Diabetes Investig.* 2016;7(1):94–9.
36. Candrilli SD, Meyers JL, Boye K, Bae JP. Health care resource utilization and costs during episodes of care for type 2 diabetes mellitus-related comorbidities. *J Diabetes Complications.* 2015;29(4):529–33.
37. Murata GH, Duckworth WC, Shah JH, Wendel CS, Mohler MJ, Hoffman RM. Hypoglycemia in stable, insulin-treated veterans with type 2 diabetes: A prospective study of 1662 episodes. *J Diabetes Complications.* 2005;19(1):10–7.
38. Alemayehu B, Liu J, Rajpathak S, Engel SS. Healthcare resource use and associated costs of hypoglycemia in patients with type 2 diabetes prescribed sulfonylureas. *J Diabetes Complications.* 2017;31(11):1620–3.
39. Ross S, Dzida G, Ji Q, Kaiser M, Ligthelm R, Meneghini L, et al. Safety of once-daily insulin detemir in patients with type 2 diabetes treated with oral hypoglycemic agents in routine clinical practice. *J Diabetes.* 2014;6(3):243–50.
40. Fukuda M, Doi K, Sugawara M, Naka Y, Mochizuki K. Survey of Hypoglycemia in Elderly People With Type 2 Diabetes Mellitus in Japan. *J Clin Med Res.* 2015;7(12):967–78.
41. Davis TME, Brown SGA, Jacobs IG, Bulsara M, Bruce DG, Davis WA. Determinants of severe hypoglycemia complicating type 2 diabetes: The Fremantle diabetes study. *J Clin Endocrinol Metab.* 2010;95(5):2240–7.
42. Kumar S, Pathak AK, Saikia D, Kumar A. Efficacy, safety and treatment satisfaction of glimepiride vs sitagliptin in combination with metformin in type 2 diabetes mellitus. *J Clin Diagnostic Res.* 2015;9(12):FC07-FC10.
43. Rao P V., Bhattacharyya A, Sahay RK. Initiation of insulin aspart to Indian subjects on OADs show significant improvement in glycaemic outcomes: The A1chieve® observational study. *J Assoc Physicians India.* 2013;61(SPL. 1):21–3.
44. Sharma SK, Joshi SR, Kumar A, Unnikrishnan AG, Hoskote SS, Moharana AK, et al. Efficacy, safety and acceptability of biphasic insulin aspart 30 in Indian patients with type 2 diabetes: Results from the PRESENT study. *J Assoc Physicians India.* 2008;56(NOV.):859–63.
45. Prinz N, Ebner S, Grünerbel A, Henkelüdecke U, Hermanns N, Hummel M, et al. Female sex, young age, northern German residence, hypoglycemia and disabling diabetes complications are associated with depressed mood in the WHO-5 questionnaire – A multicenter DPV study among 17,563 adult patients with type 2 diabetes. *J Affect Disord.* 2017;208(October 2016):384–91.
46. McCoy RG, Lipska KJ, Yao X, Ross JS, Montori VM, Shah ND. Intensive treatment and severe hypoglycemia among adults with type 2 diabetes. *JAMA Intern Med.* 2016;176(7):969–78.
47. Karter AJ, Warton EM, Lipska KJ, Ralston JD, Moffet HH, Jackson GG, et al. Development and validation of a tool to identify patients with type 2 diabetes at high risk of hypoglycemia-related emergency department or hospital use. *JAMA Intern Med.* 2017;177(10):1461–70.
48. Huang ES, Laiteerapong N, Liu JY, John PM, Moffet HH, Karter AJ. Rates of complications and mortality in older patients with diabetes mellitus : the diabetes and aging study. *JAMA Intern Med.* 2014;174(2):251–8.
49. Whitmer RA, Karter AJ, Yaffe K, Quesenberry CPJ, Selby J V. Hypoglycemic episodes and risk of dementia in older patients with type 2 diabetes mellitus. *JAMA.* 2009;301(15):1565–72.
50. Landgraf R, Frank M, Bauer C, Leyck Dieken M. Prandial glucose regulation with repaglinide: its clinical and lifestyle impact in a large cohort of patients with Type 2 diabetes. *Int J Obes.* 2000;24:S38–44.
51. Gallwitz B, Kusterer K, Hildemann S, Fresenius K. Type II diabetes and its therapy in clinical practice - Results from the standardised non-interventional registry SIRTA. *Int J Clin Pract.* 2014;68(12):1442–53.

52. Almansari A, Khader S, Kharawagh A, Abdelfattah W, Badawy T. Safety and efficacy of biphasic insulin aspart 30 in type 2 diabetes patients switched from either biphasic or basal human insulin: Results from the Gulf cohort of the A1chieve study. *Int J Clin Pract.* 2014;68(7):850–6.
53. Valensi P, Benroubi M, Borzi V, Gumprecht J, Kawamori R, Shaban J, et al. Initiating insulin therapy with, or switching existing insulin therapy to, biphasic insulin aspart 30/70 (NovoMix® 30) in routine care: Safety and effectiveness in patients with type 2 diabetes in the IMPROVE™ observational study. *Int J Clin Pract.* 2009;63(3):522–31.
54. El-Naggar N, Almansari A, Khudada K, Salman S, Mariswamy N, Abdelfattah W, et al. The A1chieve study - An observational non-interventional study of patients with type 2 diabetes mellitus initiating or switched to insulin analogue therapy: Subgroup analysis of the Gulf population. *Int J Clin Pract.* 2013;67(2):128–38.
55. Al-Arouj M, Hassoun AAK, Medlej R, Pathan MF, Shaltout I, Chawla MS, et al. The effect of vildagliptin relative to sulphonylureas in Muslim patients with type 2 diabetes fasting during Ramadan: The VIRTUE study. *Int J Clin Pract.* 2013;67(10):957–63.
56. Shah S, Benroubi M, Borzi V, Gumprecht J, Kawamori R, Shaban J, et al. Safety and effectiveness of biphasic insulin aspart 30/70 (NovoMix® 30) when switching from human premix insulin in patients with type 2 diabetes: Subgroup analysis from the 6-month IMPROVE™ observational study. *Int J Clin Pract.* 2009;63(4):574–82.
57. Delgado E. Outcomes with insulin glargine in patients with type 2 diabetes previously on NPH insulin: Evidence from clinical practice in Spain. *Int J Clin Pract.* 2012;66(3):281–8.
58. Munro N, Barnett AH. Incidence, worry and discussion about dosing irregularities and self-treated hypoglycaemia amongst HCPs and patients with type 2 diabetes: Results from the UK cohort of the Global Attitudes of Patient and Physicians (GAPP2) survey. *Int J Clin Pract.* 2014;68(6):692–9.
59. Gumprecht J, Benroubi M, Borzi V, Kawamori R, Shaban J, Shah S, et al. Intensification to biphasic insulin aspart 30/70 (BIAsp 30, NovoMix® 30) can improve glycaemic control in patients treated with basal insulins: A subgroup analysis of the IMPROVE™ observational study. *Int J Clin Pract.* 2009;63(6):966–72.
60. Pirāgs V, El Damassy H, Dąbrowski M, Gönen MS, Račická E, Martinka E, et al. Low risk of severe hypoglycaemia in patients with type 2 diabetes mellitus starting insulin therapy with premixed insulin analogues BID in outpatient settings. *Int J Clin Pract.* 2012;66(11):1033–41.
61. Tada Y, Kanazawa I, Notsu M, Tanaka KI, Kiyohara N, Sasaki M, et al. Long-term efficacy and safety of sitagliptin in elderly patients with type 2 diabetes mellitus. *Intern Med.* 2016;55(10):1275–8.
62. Shriiram V, Mahadevan S, Anitharani M, Jagadeesh N, Kurup S, Vidya T, et al. Reported hypoglycemia in Type 2 diabetes mellitus patients: Prevalence and practices-a hospital-based study. *Indian J Endocrinol Metab.* 2017;21(1):148–53.
63. El Shiekh A, Farrag H, Ashour T, Alshali K, Abdelfattah W. Clinical safety of insulin detemir in patients with Type 2 diabetes in the Gulf countries: The multicenter, noninterventional, open-label LevSafe study. *Indian J Endocrinol Metab.* 2016;20(4):443–50.
64. Das AK, Kalra S, Akhtar S, Shetty R, Kumar A. Clinical experience of switching from biphasic human insulin to biphasic insulin aspart 30 in Indian patients with type 2 diabetes in the A1chieve study. *Indian J Endocrinol Metab.* 2015;19(1):110–5.
65. Rombopoulos G, Hatzikou M, Latsou D, Yfantopoulos J. The prevalence of hypoglycemia and its impact on the quality of life (QoL) of type 2 diabetes mellitus patients (The HYPO Study). *Hormones.* 2013;12(4):550–8.
66. Jermendy G, Erdesz D, Nagy L, Yin D, Phatak H, Karve S, et al. Outcomes of adding second hypoglycemic drug after metformin monotherapy failure among type 2 diabetes in Hungary. *Health Qual Life Outcomes.* 2008;6:1–8.
67. Stargardt T, Gonder-Frederick L, Krobot KJ, Alexander CM. Fear of hypoglycaemia: Defining a minimum clinically important difference in patients with type 2 diabetes. *Health Qual Life Outcomes.* 2009;7:1–8.
68. Tago M, Oyama JI, Sakamoto Y, Shiraki A, Uchida F, Chihara A, et al. Efficacy and safety of sitagliptin in elderly patients with type 2 diabetes mellitus. *Geriatr Gerontol Int.* 2018;18(4):631–9.
69. Doucet JA, Bauduceau B, Le Floch JP, Verny C. Medical treatments of elderly, French patients with type 2 diabetes: Results at inclusion in the GERODIAB Cohort. *Fundam Clin Pharmacol.* 2016;30(1):76–81.
70. Perriello G, Caputo S, De Pergola G, Di Carlo A, Grassi G, Lapolla A, et al. Improved glycemic control with weight loss and a low risk of hypoglycemia with insulin detemir: Insights from the Italian cohort of the PREDICTIVE study after 6-month observation in type 2 diabetic subjects. *Expert Opin Pharmacother.* 2011;12(16):2449–55.
71. Siegmund T, Weber S, Blankenfeld H, Oeffner A, Schumm-Draeger PM. Comparison of Insulin Glargine Versus NPH Insulin in People with Type 2 Diabetes Mellitus Under Outpatient-Clinic Conditions for 18 Months Using a Basal-Bolus Regimen with a Rapid-Acting Insulin Analogue as Mealtime Insulin. *Exp Clin Endocrinol Diabetes.* 2007;115:349–53.
72. Echtay A, Andari E, Atallah P, Moufarrege R, Nemr R. Insulin Detemir in Combination with Oral Antidiabetic Drugs Improves Glycemic Control in Persons with Type 2 Diabetes in Near East Countries: Results from the Lebanese Subgroup. *Ethn Dis.* 2017;27(1):45–55.
73. Ampudia-Blasco FJ, Galán M, Brod M. A cross-sectional survey among patients and prescribers on insulin dosing irregularities and impact of mild (self-treated) hypoglycemia episodes in Spanish patients with type 2 diabetes as compared to other European patients. *Endocrinol y Nutr (English Ed).* 2014;61(8):426–33.
74. DePablos-Velasco P, Salguero-Chaves E, Mata-Poyo J, DeRivas-Otero B, García-Sánchez R, Viguera-Ester P. Quality of life and satisfaction with treatment in subjects with type 2 diabetes: Results in Spain of the PANORAMA study. *Endocrinol y Nutr (English Ed).* 2014;61(1):18–26.

75. Sicras-Mainar A, Navarro-Artieda R, Morano R, Ruíz L. Use of healthcare resources and costs associated to the start of treatment with injectable drugs in patients with type 2 diabetes mellitus. *Endocrinol y Nutr (English Ed)*. 2016;63(10):527–35.
76. Bell DSH, Yumuk V. Frequency of severe hypoglycemia in patients with non-insulin-dependent diabetes mellitus treated with sulfonylureas or insulin. *Endocr Pract*. 1997;3(5):281.
77. Delal MR, Xie L, Baser O, DiGenio A. Adding rapid-acting insulin or GLP-1 receptor agonist to basal insulin: outcomes in a community setting. *Endocr Pract*. 2015;21(1):68–76.
78. Mitchell BD, He X, Sturdy IM, Cagle AP, Settles JA. Glucagon prescription patterns in patients with either type 1 or 2 diabetes with newly prescribed insulin. *Endocr Pract*. 2016;22(2):123–35.
79. Davis SN, Wei W, Garg S. Clinical impact of initiating insulin glargine therapy with disposable pen versus vial in patients with type 2 diabetes mellitus in a managed care setting. *Endocr Pract*. 2011;17(6):845–52.
80. Patell R, Nigmatoulline D, Bena J, Kim DG, Messinger-Rapport B, Lansang MC. Hypoglycemia and Hypoglycemia in Patients with Diabetes in Skilled Nursing Facilities. *Endocr Pract*. 2017;23(4):458–65.
81. Sicras-Mainar A, Navarro-Artieda R. Use of metformin and vildagliptin for treatment of type 2 diabetes in the elderly. *Drug Des Devel Ther*. 2014;8:811–7.
82. Odawara M, Kadowaki T, Naito Y. Incidence and predictors of hypoglycemia in Japanese patients with type 2 diabetes treated by insulin glargine and oral antidiabetic drugs in real-life: ALOHA post-marketing surveillance study sub-analysis. *Diabetol Metab Syndr*. 2014;6(1):6–7.
83. Tentolouris N, Kyriazopoulou V, Makrigiannis D, Baroutsou B. Intensification of insulin therapy in patients with type 2 diabetes: A retrospective non-interventional cohort study of patients treated with insulin glargine or biphasic human insulin in daily clinical practice. *Diabetol Metab Syndr*. 2013;5(1):1–8.
84. Heller SR, Choudhary P, Davies C, Emery C, Campbell MJ, Freeman J, et al. Risk of hypoglycaemia in types 1 and 2 diabetes: Effects of treatment modalities and their duration. *Diabetologia*. 2007;50(6):1140–7.
85. Mogensen UM, Andersson C, Fosbøl EL, Schramm TK, Vaag A, Scheller NM, et al. Sulfonylurea in combination with insulin is associated with increased mortality compared with a combination of insulin and metformin in a retrospective Danish nationwide study. *Diabetologia*. 2015;58(1):50–8.
86. Bonke FC, Donnachie E, Schneider A, Mehring M. Association of the average rate of change in HbA1c with severe adverse events: a longitudinal evaluation of audit data from the Bavarian Disease Management Program for patients with type 2 diabetes mellitus. *Diabetologia*. 2016;59(2):286–93.
87. Henderson JN, Allen K V, Deary IJ, Frier BM. Hypoglycaemia in insulin-treated Type 2 diabetes: frequency, symptoms and impaired awareness. *Diabet Med*. 2004;21(2):103–13.
88. Akram K, Pedersen-Bjergaard U, Carstensen B, Borch-Johnsen K, Thorsteinsson B. Frequency and risk factors of severe hypoglycaemia in insulin-treated Type 2 diabetes: a cross-sectional survey. *Diabet Med*. 2006;23(7):750–6.
89. Hajos TRS, Pouwer F, de Grooth R, Holleman F, Twisk JWR, Diamant M, et al. Initiation of insulin glargine in patients with Type2 diabetes in suboptimal glycaemic control positively impacts health-related quality of life. A prospective cohort study in primary care. *Diabet Med*. 2011;28(9):1096–102.
90. Quilliam BJ, Ozbay AB, Sill BE, Kogut SJ. The association between adherence to oral anti-diabetic drugs and hypoglycaemia in persons with Type 2 diabetes. *Diabet Med*. 2013;30(11):1305–13.
91. Jaap AJ, Jones GC, McCrimmon RJ, Deary IJ, Frier BM. Perceived symptoms of hypoglycaemia in elderly Type 2 diabetic patients treated with insulin. *Diabet Med*. 1998;15(5):398–401.
92. Wendel CS, Fotieo GG, Shah JH, Felicetta J, Curtis BH, Murata GH. Incidence of non-severe hypoglycaemia and intensity of treatment among veterans with Type 2 diabetes in the USA: A prospective observational study. *Diabet Med*. 2014;31(12):1524–31.
93. Aung PP, Strachan MWJ, Frier BM, Butcher I, Deary IJ, Price JF. Severe hypoglycaemia and late-life cognitive ability in older people with Type2 diabetes: The Edinburgh Type2 Diabetes Study. *Diabet Med*. 2012;29(3):328–36.
94. Luk AO, Li X, Zhang Y, Guo X, Jia W, Li W, et al. Quality of care in patients with diabetic kidney disease in Asia: The Joint Asia Diabetes Evaluation (JADE) Registry. *Diabet Med*. 2016;33(9):1230–9.
95. Müller N, Lehmann T, Gerste B, Adler JB, Kloos C, Hartmann M, et al. Increase in the incidence of severe hypoglycaemia in people with Type 2 diabetes in spite of new drugs: analysis based on health insurance data from Germany. *Diabet Med*. 2017;34(9):1212–8.
96. Holstein A, Plaschke A, Egberts EH. Lower incidence of severe hypoglycaemia in patients with type 2 diabetes treated with glimepiride versus glibenclamide. *Diabetes Metab Res Rev*. 2001;17(6):467–73.
97. Schloot NC, Haupt A, Schütt M, Nicolay C, Reaney M, Fink K, et al. Risk of severe hypoglycemia in sulfonylurea-treated patients from diabetes centers in Germany/Austria: How big is the problem? Which patients are at risk? *Diabetes Metab Res Rev*. 2016;32:316–24.
98. Verges B, Brun JM, Tawil C, Alexandre B, Kerlan V. Strategies for insulin initiation: insights from the French LIGHT observational study. *Diabetes Metab Res Rev*. 2012;28:97–105.
99. Meneghini LF, Rosenberg KH, Koenen C, Merilainen MJ, Lüddecke HJ. Insulin detemir improves glycaemic control with less hypoglycaemia and no weight gain in patients with type 2 diabetes who were insulin naive or treated with NPH or insulin glargine: Clinical practice experience from a German subgroup of the PREDICTIVE st. *Diabetes, Obes Metab*. 2007;9(3):418–27.
100. Persson F, Nyström T, Jørgensen ME, Carstensen B, Gulseth HL, Thuresson M, et al. Dapagliflozin is associated with lower risk of cardiovascular events and all-cause mortality in people with type 2 diabetes (CVD-REAL Nordic) when compared with dipeptidyl

- peptidase-4 inhibitor therapy: A multinational observational study. *Diabetes, Obes Metab.* 2018;20(2):344–51.
101. Rhoads GG, Dain MP, Zhang Q, Kennedy L. Two-year glycaemic control and healthcare expenditures following initiation of insulin glargine versus neutral protamine Hagedorn insulin in type 2 diabetes. *Diabetes, Obes Metab.* 2011;13:711–7.
102. Vexiau P, Mavros P, Krishnarajah G, Lyu R, Yin D. Hypoglycaemia in patients with type 2 diabetes treated with a combination of metformin and sulphonylurea therapy in France. *Diabetes, Obes Metab.* 2008;10(SUPPL.1):16–24.
103. Jang HC, Lee SR, Vaz JA. Biphasic insulin aspart 30 in the treatment of elderly patients with type 2 diabetes: A subgroup analysis of the PRESENT Korea NovoMix® study. *Diabetes, Obes Metab.* 2009;11(1):20–6.
104. Mauricio D, Meneghini L, Seufert J, Liao L, Wang H, Tong L, et al. Glycaemic control and hypoglycaemia burden in patients with type 2 diabetes initiating basal insulin in Europe and the USA. *Diabetes, Obes Metab.* 2017;19(8):1155–64.
105. Johnston SS, Conner C, Aagren M, Ruiz K, Bouchard J. Association between hypoglycaemic events and fall-related fractures in Medicare-covered patients with type 2 diabetes. *Diabetes, Obes Metab.* 2012;14(7):634–43.
106. Marrett E, Stargardt T, Mavros P, Alexander CM. Patient-reported outcomes in a survey of patients treated with oral antihyperglycaemic medications: Associations with hypoglycaemia and weight gain. *Diabetes, Obes Metab.* 2009;11(12):1138–44.
107. Nyström T, Bodegard J, Nathanson D, Thuresson M, Norhammar A, Eriksson JW. Novel oral glucose-lowering drugs are associated with lower risk of all-cause mortality, cardiovascular events and severe hypoglycaemia compared with insulin in patients with type 2 diabetes. *Diabetes, Obes Metab.* 2017;19(6):831–41.
108. Conceição J, Doreis J, Araújo F, Laires PA, Carr RD, Brodovicz K, et al. Severe hypoglycaemia among patients with type 2 diabetes requiring emergency hospital admission: The Hypoglycaemia In Portugal Observational Study–Emergency Room (HIPOS–ER). *Diabetes, Obes Metab.* 2018;20(1):50–9.
109. Khunti K, Caputo S, Damci T, Dzida GJ, Ji Q, Kaiser M, et al. The safety and efficacy of adding once-daily insulin detemir to oral hypoglycaemic agents in patients with type 2 diabetes in a clinical practice setting in 10 countries. *Diabetes Obes Metab.* 2011;14:1129–36.
110. Yee M, Siaw L, Ek D, Chew K, Dalan R, Abdul S, et al. Investigators from Tan Tock Seng Hospital Release New Data on Hypoglycemia (Evaluating the Effect of Ramadan Fasting on Muslim Patients with Diabetes in relation to Use of Medication and Lifestyle Patterns: A Prospective Study). *Diabetes Week.* 2014;2014:171.
111. Khattab M, Mahmoud K, Shaltout I. Effect of Vildagliptin Versus Sulfonylurea in Muslim Patients with Type 2 Diabetes Fasting During Ramadan in Egypt: Results from VIRTUE Study. *Diabetes Ther.* 2016;7(3):551–60.
112. Khamseh ME, Haddad J, Yang W, Zilov A, Bech OM, Hasan MI. Safety and effectiveness of biphasic insulin aspart 30 in different age-groups: A1chieve sub-analysis. *Diabetes Ther.* 2013;4(2):347–61.
113. Chen Y, Liu L, Gu L, Babineaux S, Colclough H, Curtis B. Glycemic Control in Chinese Patients with Type 2 Diabetes Mellitus Receiving Oral Antihyperglycemic Medication-Only or Insulin-Only Treatment: A Cross-Sectional Survey. *Diabetes Ther.* 2015;6(2):197–211.
114. Mulligan CM, Harper R, Harding J, McIlwaine W, Petrukevitch A, McLaughlin DM. A retrospective audit of type 2 diabetes patients prescribed liraglutide in real-life clinical practice. *Diabetes Ther.* 2013;4(1):147–51.
115. Majanovic SK, Janez A, Lefterov I, Tasic S, Cikac T. The Real-Life Effectiveness and Care Patterns of Diabetes Management Study for Balkan Region (Slovenia, Croatia, Serbia, Bulgaria): A Multicenter, Observational, Cross-Sectional Study. *Diabetes Ther.* 2017;8(4):929–40.
116. Brod M, Galstyan G, Unnikrishnan AG, Harman-Boehm I, Prusty V, Lavalle F, et al. Self-Treated Hypoglycemia in Type 2 Diabetes Mellitus: Results from the Second Wave of an International Cross-Sectional Survey. *Diabetes Ther.* 2016;7(2):279–93.
117. Simon D, Detournay B, Eschwege E, Bouée S, Bringer J, Attali C, et al. Use of Vildagliptin in Management of Type 2 Diabetes: Effectiveness, Treatment Persistence and Safety from the 2-Year Real-Life VILDA Study. *Diabetes Ther.* 2014;5(1):207–24.
118. Balkau B, Charbonnel B, Penformis A, Chraïbi N, Lahouegue A, Faure C, et al. The Use of Saxagliptin in People with Type 2 Diabetes in France: The Diapazon Epidemiological Study. *Diabetes Ther.* 2017;8(5):1147–62.
119. Ectay A, Tsur A, Hasan MI, Abu-Hijleh MO, Khatib N Al, Andari E, et al. Clinical experience with insulin detemir in patients with type 2 diabetes from the near East Countries. *Diabetes Ther.* 2013;4(2):399–408.
120. Matsuba I, Sawa T, Kawata T, Kanamori A, Jiang D, Machimura H, et al. Cross-National Variation in Glycemic Control and Diabetes-Related Distress Among East Asian Patients Using Insulin: Results from the MOSAIC Study. *Diabetes Ther.* 2016;7(2):349–60.
121. Halimi S, Levy M, Huet D, Quéré S, Dejager S. Experience with vildagliptin in type 2 diabetic patients fasting during Ramadan in France: Insights from the VERDI study. *Diabetes Ther.* 2013;4(2):385–98.
122. Sicras-Mainar A, Navarro-Artieda R. Healthcare costs of the combination of metformin/dipeptidyl peptidase-4 inhibitors compared with metformin/other oral antidiabetes agents in patients with type 2 diabetes and metabolic syndrome. *Diabetes Technol Ther.* 2014;16(11):722–7.
123. Xie L, Zhou S, Pinsky BW, Buysman EK, Baser O. Impact of initiating insulin glargine disposable pen versus vial/syringe on real-world glycemic outcomes and persistence among patients with type 2 diabetes mellitus in a large managed care plan: A claims database analysis. *Diabetes Technol Ther.* 2014;16(9):567–75.

124. Guan X, Mu Y, Zhou X, Chen S, Dong J, Liao L. Efficacy and Safety of Insulin Therapy in Patients with Type 2 Diabetes Treated at Different Grades of Hospitals in China: Subgroup Analysis of the Real-World SEAS Study. *Diabetes Technol Ther.* 2017;19(1):34–40.
125. Ji L, Zhang P, Weng J, Lu J, Guo X, Jia W, et al. Observational Registry of Basal Insulin Treatment (ORBIT) in Patients with Type 2 Diabetes Uncontrolled by Oral Hypoglycemic Agents in China - Study Design and Baseline Characteristics. *Diabetes Technol Ther.* 2015;17(10):735–44.
126. Kesavadev J, Shankar A, Pillai PBS, Krishnan G, Jothydev S. Cost-effective use of telemedicine and self-monitoring of blood glucose via Diabetes Tele Management System (DTMS) to achieve target glycosylated hemoglobin values without serious symptomatic hypoglycemia in 1,000 subjects with type 2 diabetes mellitus. *Diabetes Technol Ther.* 2012;14(9):772–6.
127. Pettersson B, Rosenqvist U, Deleskog A, Journath G, Wändell P. Self-reported experience of hypoglycemia among adults with type 2 diabetes mellitus (Exhype). *Diabetes Res Clin Pract.* 2011;92(1):19–25.
128. Murata GH, Duckworth WC, Shah JH, Wendel CS, Hoffman RM. Factors affecting hypoglycemia awareness in insulin-treated type 2 diabetes: The Diabetes Outcomes in Veterans Study (DOVES). *Diabetes Res Clin Pract.* 2004;65(1):61–7.
129. Nunes AP, Yang J, Radican L, Engel SS, Kurtyka K, Tunceli K, et al. Assessing occurrence of hypoglycemia and its severity from electronic health records of patients with type 2 diabetes mellitus. *Diabetes Res Clin Pract.* 2016;121:192–203.
130. Bebakar WMW, Lim-Abrahan MA, Jain AB, Seah D, Soewondo P. Safety and effectiveness of insulin aspart in type 2 diabetic patients: Results from the ASEAN cohort of the A1chieve study. *Diabetes Res Clin Pract.* 2013;100(SUPPL.1):17–23.
131. Lim-Abrahan MA, Jain AB, Bebakar WMW, Seah D, Soewondo P. Safety and effectiveness of biphasic insulin aspart 30 in type 2 diabetes: Results from the ASEAN cohort of the A1chieve study. *Diabetes Res Clin Pract.* 2013;100(SUPPL.1):S3–9.
132. Chraïbi A, Ajdi F, Belkhadir J, El Ansari N, Marouan F, Farouqi A. Safety and effectiveness of insulin analogues in Moroccan patients with type 2 diabetes: A sub-analysis of the A1chieve study. *Diabetes Res Clin Pract.* 2013;101(SUPPL.1):S27–36.
133. Prinz N, Stingl J, Dapp A, Denking MD, Fasching P, Jehle PM, et al. High rate of hypoglycemia in 6770 type 2 diabetes patients with comorbid dementia: A multicenter cohort study on 215,932 patients from the German/Austrian diabetes registry. *Diabetes Res Clin Pract.* 2016;112:73–81.
134. Almustafa M, Yeo JP, Khutsoane D. Glycaemic control and hypoglycaemia in the PRESENT study. *Diabetes Res Clin Pract.* 2008;81(SUPPL.1).
135. Reaney M, Cypryk K, Tentolouris N, Jecht M, Cleall S, Petzinger U, et al. Resource utilisation and clinical data before and after switching between short-acting human insulin and rapid-acting insulin analogues in patients with type 2 diabetes: The SWING study. *Diabetes Res Clin Pract.* 2012;97(2):231–41.
136. Soewondo P, Mohamed M, Jain AB, Sy RAG, Khoo CM. Safety and effectiveness of insulin detemir in type 2 diabetes: Results from the ASEAN cohort of the A1chieve study. *Diabetes Res Clin Pract.* 2013;100(SUPPL.1):S10–6.
137. Malek R, Arbouche Z, Dahaoui A, Bachaoui M. Safety and effectiveness of insulin analogues in type 2 diabetic patients from Algeria: A sub-analysis of the A1chieve study. *Diabetes Res Clin Pract [Internet].* 2013;101(SUPPL.1):S15–26.
138. Shestakova M, Bech OM, Momani MS. Study design and baseline characteristics of patients in the PRESENT study. *Diabetes Res Clin Pract.* 2008;81(SUPPL.1):3–9.
139. Belhadj M, Dahaoui A, Jamoussi H, Farouqi A. Exploring insulin analogue safety and effectiveness in a Maghrebian cohort with type 2 diabetes: Results from the A1chieve study. *Diabetes Res Clin Pract.* 2013;101(SUPPL.1):S4–14.
140. Bourdel-Marchasson I, Druet C, Helmer C, Eschwege E, Lecomte P, Le-Goff M, et al. Correlates of health-related quality of life in French people with type 2 diabetes. *Diabetes Res Clin Pract [Internet].* 2013;101(2):226–35.
141. Eriksson JW, Bodegard J, Nathanson D, Thuresson M, Nyström T, Norhammar A. Sulphonylurea compared to DPP-4 inhibitors in combination with metformin carries increased risk of severe hypoglycemia, cardiovascular events, and all-cause mortality. *Diabetes Res Clin Pract.* 2016;117:39–47.
142. Soewondo P, Kshanti IA, Pramono RB, Langi YA, Dalem-Pemayun TG. Clinical experience with insulin detemir: Results from the Indonesian cohort of the international A1chieve study. *Diabetes Res Clin Pract.* 2013;100(SUPPL.1):S47–53.
143. Schopman JE, Geddes J, Frier BM. Prevalence of impaired awareness of hypoglycaemia and frequency of hypoglycaemia in insulin-treated Type 2 diabetes. *Diabetes Res Clin Pract.* 2010;87(1):64–8.
144. Pilemann-Lyberg S, Thorsteinsson B, Snorgaard O, Zander M, Vestergaard H, Røder ME. Severe hypoglycaemia during treatment with sulphonylureas in patients with type 2 diabetes in the Capital Region of Denmark. *Diabetes Res Clin Pract.* 2015;110(2):202–7.
145. Solomon MD, Vijan S, Forma FM, Conrad RM, Summers NT, Lakdawalla DN. The impact of insulin type on severe hypoglycaemia events requiring inpatient and emergency department care in patients with type 2 diabetes. *Diabetes Res Clin Pract.* 2013;102(3):175–82.
146. Chin SO, Rhee SY, Chon S, Baik SH, Park Y, Nam MS, et al. Hypoglycemia is associated with dementia in elderly patients with type 2 diabetes mellitus: An analysis based on the Korea National Diabetes Program Cohort. *Diabetes Res Clin Pract.* 2016;122:54–61.
147. El Naggat NK, Soewondo P, Khamseh ME, Chen JW, Haddad J. Switching from biphasic human insulin 30 to biphasic insulin aspart 30 in type 2 diabetes is associated with improved glycaemic control and a positive safety profile: Results from the A1chieve study. *Diabetes Res Clin Pract.* 2012;98(3):408–13.
148. Sugarman JR. Hypoglycemia associated hospitalizations in a population with a high prevalence of non-insulin-dependent diabetes mellitus. *Diabetes Re.* 1991;14:139–48.

149. Nunes A, Iglay K, Radican L, Engel SS, Yang J, Doherty MC, et al. Hypoglycaemia seriousness and weight gain as determinants of cardiovascular disease outcomes among sulfonylurea users. *Diabetes Obes Metab*. 2017;19:1425–35.
150. Zhao Y, Campbell CR, Fonseca V, Shi L. Impact of hypoglycemia associated with antihyperglycemic medications on vascular risks in veterans with type 2 diabetes. *Diabetes Care*. 2012;35(5):1126–32.
151. Feinkohl I, Aung PP, Keller M, Robertson CM, Morling JR, McLachlan S, et al. Severe hypoglycemia and cognitive decline in older people with type 2 diabetes: The Edinburgh type 2 diabetes study. *Diabetes Care*. 2014;37(2):507–15.
152. Punthakee Z, Miller ME, Launer LJ, Williamson JD, Lazar RM, Cukierman-Yaffe T, et al. Poor cognitive function and risk of severe hypoglycemia in type 2 diabetes: Post hoc epidemiologic analysis of the ACCORD trial. *Diabetes Care*. 2012;35(4):787–93.
153. Lipska KJ, Yao X, Herrin J, McCoy RG, Ross JS, Steinman MA, et al. Trends in drug utilization, glycemic control, and rates of severe hypoglycemia, 2006–2013. *Diabetes Care*. 2017;40(4):468–75.
154. Bedenis R, Price AH, Robertson CM, Morling JR, Frier BM, Strachan MWJ, et al. Association between severe hypoglycemia, adverse macrovascular events, and inflammation in the Edinburgh type 2 diabetes study. *Diabetes Care*. 2014;37(12):3301–8.
155. Yun JS, Kim JH, Song KH, Ahn YB, Yoon KH, Yoo KD, et al. Cardiovascular autonomic dysfunction predicts severe hypoglycemia in patients with type 2 diabetes: A 10-year follow-up study. *Diabetes Care*. 2014;37(1):235–41.
156. Douros A, Yin H, Yu OHY, Filion KB, Azoulay L, Suissa S. Pharmacologic differences of sulfonylureas and the risk of adverse cardiovascular and hypoglycemic events. *Diabetes Care*. 2017;40(11):1506–13.
157. Davis WA, Bruce DG, Davis TM. Is self-monitoring of blood glucose appropriate for all type 2 diabetic patients? The Fremantle Diabetes Study. *Diabetes Care*. 2006;29(8):1764–70.
158. Lipska KJ, Warton EM, Huang ES, Moffet HH, Inzucchi SE, Krumholz HM, et al. HbA1c and risk of severe hypoglycemia in type 2 diabetes: the diabetes and aging study. *Diabetes Care*. 2013;36(11):3535–42.
159. Salti I, Bénard E, Detournay B, Bianchi-Biscay M, Le Brigand C, Voinet C, et al. A population-based study of diabetes and its characteristics during the fasting month of Ramadan in 13 countries: Results of the epidemiology of diabetes and Ramadan 1422/2001 (EPIDIAR) study. *Diabetes Care*. 2004;27(10):2306–11.
160. Hsu PF, Sung SH, Cheng HM, Yeh JS, Liu WL, Chan WL, et al. Association of clinical symptomatic hypoglycemia with cardiovascular events and total mortality in type 2 diabetes: A nationwide population-based study. *Diabetes Care*. 2013;36(4):894–900.
161. Johnston SS, Conner C, Aagren M, Smith DM, Bouchard J, Brett J. Evidence linking hypoglycemic events to an increased risk of acute cardiovascular events in patients with type 2 diabetes. *Diabetes Care*. 2011;34(5):1164–70.
162. Bajaj HS, Venn K, Ye C, Patrick A, Kalra S, Khandwala H, et al. Lowest glucose variability and hypoglycemia are observed with the combination of a GLP-1 receptor agonist and basal insulin (VARIATION Study). *Diabetes Care*. 2017;40(2):194–200.
163. Bodmer M, Meier C, Jick S, Meier CR, Krahenbuhl S. Antidiabetes Drugs and the Risk of Lactic Acidosis or Hypoglycemia. *Diabetes Care* [Internet]. 2008;31(11):p2086-91.
164. Tschöpe D, Bramlage P, Schneider S, Gitt AK. Incidence, characteristics and impact of hypoglycaemia in patients receiving intensified treatment for inadequately controlled type 2 diabetes mellitus. *Diabetes Vasc Dis Res*. 2016;13(1):2–12.
165. Penforis A, Bourdel-Marchasson I, Quere S, Dejager S. Real-life comparison of DPP4-inhibitors with conventional oral antidiabetics as add-on therapy to metformin in elderly patients with type 2 diabetes: The HYPOCRAS study. *Diabetes Metab*. 2012;38(6):550–7.
166. Valensi P, de Pouvourville G, Benard N, Chanut-Vogel C, Kempf C, Eymard E, et al. Treatment maintenance duration of dual therapy with metformin and sitagliptin in type 2 diabetes: The ODYSSEE observational study. *Diabetes Metab*. 2015;41(3):231–8.
167. Tanaka S, Kawasaki R, Tanaka-Mizuno S, Jimuro S, Matsunaga S, Moriya T, et al. Severe hypoglycaemia is a major predictor of incident diabetic retinopathy in Japanese patients with type 2 diabetes. *Diabetes Metab*. 2017;43(5):424–9.
168. Maggi S, Noale M, Pilotto A, Tiengo A, Cavallo Perin P, Crepaldi G. The METABOLIC Study: Multidimensional assessment of health and functional status in older patients with type 2 diabetes taking oral antidiabetic treatment. *Diabetes Metab*. 2013;39(3):236–
169. Porne C, Bourdel-Marchasson I, Lecomte P, Eschwège E, Romon I, Fosse S, et al. Évolution de 2001 à 2007 de la qualité des soins reçue par les personnes âgées atteintes de diabète de type 2 (études Entred) renforcer sécurité et qualité. *Diabetes Metab*. 2011;37(2):152–61.
170. Buysschaert M, Preumont V, Oriot PR, Paris I, Ponchon M, Scarnière D, et al. Évolution Métabolique Après Un an De Patients Diabétiques De Type 2 Traités Par Exénatide Et Suivis En Routine Clinique. *Diabetes Metab*. 2010;36(5):381–8.
171. Bordier L, Buysschaert M, Bauduceau B, Doucet J, Verny C, Lassmann Vague V, et al. Predicting factors of hypoglycaemia in elderly type 2 diabetes patients: Contributions of the GERODIAB study. *Diabetes Metab*. 2015;41(4):301–3.
172. Chandrakumar A, Vikas P V., Tharakan PG, Aravind C. Prevalence of hypoglycemia among diabetic old age home residents in South India. *Diabetes Metab Syndr Clin Res Rev*. 2016;10(1):S144–6.
173. Cha SA, Yun JS, Lim TS, Hwang S, Yim EJ, Song KH, et al. Severe Hypoglycemia and Cardiovascular or All-Cause Mortality in Patients with Type 2 Diabetes. *Diabetes Metab J*. 2016;6087:202–10.
174. Aravind SR, Tayeb K Al, Ismail SB, Shehadeh N, Kaddaha G, Liu R, et al. Hypoglycaemia in sulphonylurea-treated subjects with type 2 diabetes undergoing Ramadan fasting: A five-country observational study. *Curr Med Res Opin*. 2011;27(6):1237–42.

175. Nobels F, D'Hooge D, Crenier L. Switching to biphasic insulin aspart 30/50/70 from biphasic human insulin 30/50 in patients with type 2 diabetes in normal clinical practice: Observational study results. *Curr Med Res Opin.* 2012;28(6):1017–26.
176. Oguz A, Benroubi M, Brismar K, Melo P, Morar C, Cleall SP, et al. Clinical outcomes after 24 months of insulin therapy in patients with type 2 diabetes in five countries: Results from the TREAT study. *Curr Med Res Opin.* 2013;29(8):911–20.
177. Dalal MR, Kazemi MR, Ye F. Hypoglycemia in patients with type 2 diabetes newly initiated on basal insulin in the US in a community setting: impact on treatment discontinuation and hospitalization. *Curr Med Res Opin.* 2017;33(2):209–14.
178. Shestakova M, Sharma SK, Almufatah M, Min KW, Ayad N, Azar ST, et al. Transferring type 2 diabetes patients with uncontrolled glycaemia from biphasic human insulin to biphasic insulin aspart 30: Experiences from the PRESENT study. *Curr Med Res Opin.* 2007;23(12):3209–14.
179. Davis KL, Tangirala M, Meyers JL, Wei W. Real-world comparative outcomes of US type 2 diabetes patients initiating analog basal insulin therapy. *Curr Med Res Opin.* 2013;29(9):1083–91.
180. Ayvaz G, Keskin L, Akin TF, Dokmetas HS, Tasan E, Ar IB, et al. Real-life safety and efficacy of vildagliptin as add-on to metformin in patients with type 2 diabetes in Turkey - GALATA study. *Curr Med Res Opin.* 2015;31(4):623–32.
181. Rombopoulos G, Panitti E, Varounis C, Katsinas C, Stefanidis I, Goumenos D. A multicenter, epidemiological study of the treatment patterns, comorbidities and hypoglycemia events of patients with type 2 diabetes and moderate or severe chronic kidney disease - The LEARN study. *Curr Med Res Opin.* 2016;32(5):939–47.
182. Brod M, Rana A, Barnett AH. Impact of self-treated hypoglycaemia in type 2 diabetes: a multinational survey in patients and physicians. *Curr Med Res Opin.* 2012;28(12):1947–58.
183. Shelbaya S, Rakha S. Effectiveness and safety of vildagliptin and vildagliptin add-on to metformin in real-world settings in Egypt—results from the GUARD study. *Curr Med Res Opin.* 2017;33(5):797–801.
184. Nisa L, Giger R. Practice Clinical images - *Lingua plicata*. *Cmaj.* 2012;184(3):2012.
185. Baser O, Tangirala K, Wei W, Xie L. Real-world outcomes of initiating insulin glargine-based treatment versus premixed analog insulins among US patients with type 2 diabetes failing oral antidiabetic drugs. *Clin Outcomes Res.* 2013;5(1):497–505.
186. Lopez JMS, Bailey RA, Rupnow MFT, Annunziata K. Characterization of type 2 diabetes mellitus burden by age and ethnic groups based on a nationwide survey. *Clin Ther.* 2014;36(4):494–506.
187. Davis KL, Wei W, Meyers JL, Kilpatrick BS, Pandya N. Use of basal insulin and the associated clinical outcomes among elderly nursing home residents with type 2 diabetes mellitus: A retrospective chart review study. *Clin Interv Aging.* 2014;9:1815–22.
188. De Pablos-Velasco P, Parhofer KG, Bradley C, Eschwège E, Gönder-Frederick L, Maheux P, et al. Current level of glycaemic control and its associated factors in patients with type 2 diabetes across Europe: Data from the PANORAMA study. *Clin Endocrinol (Oxf).* 2014;80(1):47–56.
189. Svensson A-M, Miftaraj M, Franzén S, Eliasson B. Clinical effects, cardiovascular and renal outcomes associated with rapid-acting insulin analogs among individuals with type 2 diabetes: a nation-wide observational cohort study. *Clin Diabetes Endocrinol.* 2017;3(1):1–8.
190. Gitt AK, Bramlage P, Schneider S, Tschöpe D. A real world comparison of sulfonylurea and insulin vs. incretin-based treatments in patients not controlled on prior metformin monotherapy. *Cardiovasc Diabetol.* 2015;14(1):1–8.
191. Rodríguez Á, Reviriego J, Karamanos V, del Cañizo FJ, Vlachogiannis N, Drossinos V. Management of cardiovascular risk factors with pioglitazone combination therapies in type 2 diabetes: An observational cohort study. *Cardiovasc Diabetol.* 2011;10(1):18.
192. Bramlage P, Gitt AK, Binz C, Krekler M, Deeg E, Tschöpe D. Oral antidiabetic treatment in type-2 diabetes in the elderly: balancing the need for glucose control and the risk of hypoglycemia. *Cardiovasc Diabetol [Internet].* 2012;11(1):122.
193. Kawamori R, Node K, Hanafusa T, Atsumi Y, Naito Y, Oka Y. Baseline and 1-year interim follow-up assessment of Japanese patients initiating insulin therapy who were enrolled in the cardiovascular risk evaluation in people with type 2 diabetes on insulin therapy study: An international, multicenter, observational . *Cardiovasc Diabetol.* 2013;12(1):1. Available from: *Cardiovascular Diabetology*
194. Eby EL, Curtis BH, Gelwicks SC, Hood RC, Idris I, Peters AL, et al. Initiation of human regular U-500 insulin use is associated with improved glycemic control: a real-world US cohort study. *BMJ Open Diabetes Res Care.* 2015;3(1):e000074.
195. Wang L, Wei W, Miao R, Xie L, Baser O. Real-world outcomes of US employees with type 2 diabetes mellitus treated with insulin glargine or neutral protamine Hagedorn insulin: A comparative retrospective database study. *BMJ Open.* 2013;3(4).
196. Rauh SP, Rutters F, Thorsted BL. Self-reported hypoglycaemia in patients with type 2 diabetes treated with insulin in the Hoorn Diabetes Care System Cohort, the Netherlands: a prospective cohort study. *BMJ Open.* 2016;6(9):e012793.
197. Hippisley-Cox J, Coupland C. Diabetes treatments and risk of amputation, blindness, severe kidney failure, hyperglycaemia, and hypoglycaemia: Open cohort study in primary care. *BMJ.* 2016;352.
198. Romley JA, Gong C, Jena AB, Goldman DP, Williams B, Peters A. Association between use of warfarin with common sulfonylureas and serious hypoglycemic events: Retrospective cohort analysis. *BMJ.* 2015;351.
199. Marrett E, Radican L, Davies MJ, Zhang Q. Assessment of severity and frequency of self-reported hypoglycemia on quality of life in patients with type 2 diabetes treated with oral antihyperglycemic agents: A survey study. *BMC Res Notes.* 2011;4(1):251.



200. Tschöpe D, Bramlage P, Binz C, Krekler M, Deeg E, Gitt AK. Incidence and predictors of hypoglycaemia in type 2 diabetes - an analysis of the prospective DiaRegis registry. *BMC Endocr Disord*. 2012;12:1–9.
201. Mitchell BD, Vietri J, Zagar A, Curtis B, Reaney M. Hypoglycaemic events in patients with type 2 diabetes in the United Kingdom: Associations with patient-reported outcomes and self-reported HbA1c. *BMC Endocr Disord*. 2013;13.
202. Medagama AB, Bandara R, Abeysekera RA, Imbulpitiya B, Pushpakumari T. Use of complementary and alternative medicines (CAMs) among type 2 diabetes patients in Sri Lanka: A cross sectional survey. *BMC Complement Altern Med*. 2014;14(1):1–5.
203. Klen J, Goričar K, Janež A, Dolžan V. The role of genetic factors and kidney and liver function in glycaemic control in type 2 diabetes patients on long-term metformin and sulphonylurea cotreatment. *Biomed Res Int*. 2014;2014.
204. Akkineni S, Mathews AM, Apuroopa G, Neha Sridhar N, Rodrigues PA. A study on patients' awareness, recognition management and prevalence of hypoglycemic episodes in type 2 diabetes mellitus in a tertiary care hospital. *Asian J Pharm Clin Res*. 2015;8(2):390–4.
205. Miller CD, Phillips LS, Ziemer DC, Gallina DL, Cook CB, El-Kebbi IM. Hypoglycemia in patients with type 2 diabetes mellitus. *Arch Intern Med*. 2001;161(13):1653–9.
206. Bullano MF, Fisher MD, Grochulski WD, Menditto L, Willey VJ. Hypoglycemic events and glycosylated hemoglobin values in patients with type 2 diabetes mellitus newly initiated on insulin glargine or premixed insulin combination products. *Am J Heal Pharm*. 2006;63(24):2473–82.
207. Quilliam BJ, Simeone JC, Ozbay B, Kogut S. The Incidence and Costs of Hypoglycemia in Type 2 Diabetes. *Am J Manag Care*. 2011;17(10):673–80.
208. Gautier JF, Martinez L, Penforis A, Eschwège E, Charpentier G, Huret B, et al. Effectiveness and Persistence with Liraglutide Among Patients with Type 2 Diabetes in Routine Clinical Practice—EVIDENCE: A Prospective, 2-Year Follow-Up, Observational, Post-Marketing Study. *Adv Ther*. 2015;32(9):838–53.
209. Xie L, Wei W, Pan C, Du J, Baser O. A real-world study of patients with type 2 diabetes initiating basal insulins via disposable pens. *Adv Ther*. 2011;28(11):1000–11.
210. Dalal MR, Kazemi M, Ye F, Xie L. Hypoglycemia After Initiation of Basal Insulin in Patients with Type 2 Diabetes in the United States: Implications for Treatment Discontinuation and Healthcare Costs and Utilization. *Adv Ther*. 2017;34(9):2083–92.
211. Wei W, Zhou S, Miao R, Pan C, Xie L, Baser O, et al. Much ado about nothing? A real-world study of patients with type 2 diabetes switching basal insulin analogs. *Adv Ther*. 2014;31(5):539–60.
212. Chitnis AS, Ganz ML, Benjamin N, Langer J, Hammer M. Clinical Effectiveness of Liraglutide Across Body Mass Index in Patients with Type 2 Diabetes in the United States: A Retrospective Cohort Study. *Adv Ther*. 2014;31(9):986–99.
213. Bellia A, Babini AC, Marchetto PE, Arsenio L, Lauro D, Lauro R. Effects of switching from NPH insulin to insulin glargine in patients with type 2 diabetes: The retrospective, observational LAUREL study in Italy. *Acta Diabetol*. 2014;51(2):269–75.
214. Weitgasser R, Lopes S. Self-reported frequency and impact of hypoglycaemic events in insulin-treated diabetic patients in Austria. *Wien Klin Wochenschr*. 2015;127(1–2):36–44.
215. Tabaei BP, Shillnovak J, Brandle M, Burke R, Kaplan RM, Herman WH. Glycemia and the quality of well-being in patients with diabetes. *Qual Life Res*. 2004;13(6):1153–61.
216. Dømggaard M, Bagger M, Rhee NA, Burton CM, Thorsteinnsson B. Individual and societal consequences of hypoglycemia: A cross-sectional survey. *Postgrad Med*. 2015;127(5):438–45.
217. Polonsky WH, Peters AL, Hessler D. The Impact of Real-Time Continuous Glucose Monitoring in Patients 65 Years and Older. *J Diabetes Sci Technol*. 2016;10(4):892–7.
218. Malkani S, Kotwal A. Frequency and Predictors of Self-Reported Hypoglycemia in Insulin-Treated Diabetes. *J Diabetes Res*. 2017;2017.
219. Ohashi Y, Wolden ML, Hyllested-Winge J, Brod M. Diabetes management and daily functioning burden of non-severe hypoglycemia in Japanese people treated with insulin. *J Diabetes Investig*. 2017;8(6):776–82.
220. Mantovani A, Grani G, Chioma L, Vancieri G, Giordani I, Rendina R, et al. Severe hypoglycemia in patients with known diabetes requiring emergency department care: A report from an Italian multicenter study. *J Clin Transl Endocrinol*. 2016;5:46–52.
221. Rawdaree P, Sarinnapakorn V, Pattanaungkul S, Khovidhunkit W, Tannirandom P, Peerpatdit T. A Prospective, Longitudinal, Multicenter, Observational Study to Assess Insulin Treatment Patterns in Diabetic Patients in Thailand: Results From the TITAN Study. *J Med Assoc Thai*. 2014;97(11):1140–50.
222. Dornhorst A, Lüddecke HJ, Sreenan S, Kozlovski P, Hansen JB, Looij BJ, et al. Insulin detemir improves glycaemic control without weight gain in insulin-naïve patients with type 2 diabetes: Subgroup analysis from the PREDICTIVE™ study. *Int J Clin Pract*. 2008;62(4):659–65.
223. Sämann A, Lehmann T, Heller T, Müller N, Hartmann P, Wolf GB, et al. A retrospective study on the incidence and risk factors of severe hypoglycemia in primary care. *Fam Pract*. 2013;30(3):290–3.
224. Leese G, Wang J, Broomhall J, Kelly P, Marsden A, Morrison W, et al. Frequency of Severe Hypoglycemia in Patients With Non-Insulin-Dependent Diabetes Mellitus Treated With Sulfonylureas or Insulin. *Endocr Pract*. 2003;26(4):1176–80.
225. McCoy RG, Van Houten HK, Ziegenfuss JY, Shah ND, Wermers RA, Smith SA. Self-report of hypoglycemia and health-related quality of life in patients with type 1 and type 2 diabetes. *Endocr Pract*. 2013;19(5):792–9.
226. Bruce DG, Davis WA, Casey GP, Clarnette RM, Brown SGA, Jacobs IG, et al. Severe hypoglycaemia and cognitive impairment in older patients with diabetes: The Fremantle Diabetes Study. *Diabetologia*. 2009;52(9):1808–15.
227. Östenson CG, Geelhoed-Duijvestijn P, Lahtela J, Weitgasser R, Markert Jensen M, Pedersen-Bjerggaard U. Self-reported non-

- severe hypoglycaemic events in Europe. *Diabet Med.* 2014;31(1):92–101.
228. Frier BM, Jensen MM, Chubb BD. Hypoglycaemia in adults with insulin-treated diabetes in the UK: self-reported frequency and effects. *Diabet Med.* 2016;33(8):1125–32.
229. Laubner K, Molz K, Kerner W, Karges W, Lang W, Dapp A, et al. Daily insulin doses and injection frequencies of neutral protamine hagedorn (NPH) insulin, insulin detemir and insulin glargine in type 1 and type 2 diabetes: a multicenter analysis of 51 964 patients from the German/Austrian DPV-wiss database K. *Diabetes Metab Res Rev.* 2014;30:395–404.
230. Lüddecke HJ, Sreenan S, Aczel S, Maxeiner S, Yenigun M, Kozlovski P, et al. PREDICTIVE™ - A global, prospective observational study to evaluate insulin detemir treatment in types 1 and 2 diabetes: Baseline characteristics and predictors of hypoglycaemia from the European cohort. *Diabetes, Obes Metab.* 2007;9(3):428–34.
231. Sreenan S, Andersen M, Thorsted BL, Wolden ML, Evans M. Increased Risk of Severe Hypoglycemic Events with Increasing Frequency of Non-severe Hypoglycemic Events in Patients with Type 1 and Type 2 Diabetes. *Diabetes Ther.* 2014;5(2):447–58.
232. Orozco-Beltrán D, Mezquita-Raya P, Ramírez de Arellano A, Galán M. Self-Reported Frequency and Impact of Hypoglycemic Events in Spain. *Diabetes Ther.* 2014;5(1):155–68.
233. Bohn B, Kerner W, Seufert J, Kempe HP, Jehle PM, Best F, et al. Trend of antihyperglycaemic therapy and glycaemic control in 184,864 adults with type 1 or 2 diabetes between 2002 and 2014: Analysis of real-life data from the DPV registry from Germany and Austria. *Diabetes Res Clin Pract.* 2016;115(May 2015):31–8.
234. Emral R, Pathan F, Cortés CAY, El-Hefnawy MH, Goh SY, Gómez AM, et al. Self-reported hypoglycemia in insulin-treated patients with diabetes: Results from an international survey on 7289 patients from nine countries. *Diabetes Res Clin Pract.* 2017;134:17–28.
235. Donnelly L, Morris A, Frier B, Ellis J, Donnan P, Durrant R, et al. Frequency and predictors of hypoglycaemia in Type 1 and insulintreated Type 2 diabetes: a population-based study. *Diabetes Med.* 2005;22(6):749–55.
236. McCoy RG, Van Houten HK, Ziegenfuss JY, Shah ND, Wermers RA, Smith SA. Increased mortality of patients with diabetes reporting severe hypoglycemia. *Diabetes Care.* 2012;35(9):1897–901.
237. Cox D, Penberthy J, Zrebiec J, Weinger K, Aikens J, Frier B, et al. Diabetes and driving mishaps. *Diabetes Care.* 2003;26(8):2329–2329.
238. Khunti K, Davies M, Majeed A, Thorsted BL, Wolden ML, Paul SK. Hypoglycemia and risk of cardiovascular disease and all-Cause mortality in insulin-treated people with type 1 and type 2 diabetes: A cohort study. *Diabetes Care.* 2015;38(2):316–22.
239. Monnier L, Colette C, Wojtuszczyńska A, Dejager S, Renard E, Molinari N, et al. Toward defining the threshold between low and high glucose variability in diabetes. *Diabetes Care.* 2017;40(7):832–8.
240. Marre M, Pinget M, Gin H, Thivolet C, Hanair H, Robert JJ, et al. Insulin detemir improves glycaemic control with less hypoglycaemia and no weight gain: 52-week data from the PREDICTIVE™ study in a cohort of French patients with type 1 or type 2 diabetes. *Diabetes Metab.* 2009;35(6):469–75.
241. Cariou B, Fontaine P, Eschwege E, Lièvre M, Gouet D, Huet D, et al. Frequency and predictors of confirmed hypoglycaemia in type 1 and insulin-treated type 2 diabetes mellitus patients in a real-life setting: Results from the DIALOG study. *Diabetes Metab.* 2015;41(2):116–25.
242. Morgan CL, Evans M, Toft AD, Jenkins-Jones S, Poole CD, Currie CJ. Clinical Effectiveness of Biphasic Insulin Aspart 30:70 Versus Biphasic Human Insulin 30 in UK General Clinical Practice: A Retrospective Database Study. *Clin Ther.* 2011;33(1):27–35.
243. Aronson R, Goldenberg R, Boras D, Skovgaard R, Bajaj H. The Canadian Hypoglycemia Assessment Tool Program: Insights Into Rates and Implications of Hypoglycemia From an Observational Study. *Can J Diabetes.* 2018;42(1):11–7.