**Supplementary Table 3.** Main characteristics of randomized controlled trials included in systematic literature review and network meta-analysis

| Study | Acronym | Clinical trial registration no. | Duration of intervention, mo | No. of randomized patients | Baseline HbA1c, % | Duration of diabetes, yr | Male sex, % | Age, yr | BMI, kg/m$^2$ (BW$^a$, kg) | Intervention (change in HbA1c after 6 months, %) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 1st | 2nd | 3rd | 4th |
| Abdullah et al. (2021) [1] | | NA | 6 | 220 | NA | New | NA | 51.6 | 30.6 | M+D | M+S | | |
| | | | | | | | | | | (only HbA1c target achievement rates are available) | | | |
| Aroda et al. (2019) [2] | PIONEER-1 | NCT02906930 | 6 | 703 | 8.0 | 3.5 | 50.8 | 55.0 | 31.8 | P (–0.3) | G (–1.2) | | |
| Aschner et al. (2010) [3] | | NCT00449930 | 6 | 1,050 | 7.2 | 2.4 | 46.0 | 56.0 | 30.8 | M (–0.6) | D (–0.4) | | |
| Bailey et al. (2012) [4] | | NA | 6 | 136 | 7.9 | 1.4 | 50.1 | 53.0 | 31.8 | P (0.0) | S (–0.8) | | |
| Birkeland et al. (1994) [5] | | NA | 15 | 46 | 8.0 | 3.5 | NA | 59.0 | 26.4 | P (0.1) | U (–0.6) | | |
| Bi et al. (2013) [6] | | ChiCTRTRC 10000941 | 6 | 138 | 8.1 | New | NA | 54.3 | 24.9 | M (–1.7) | U (–2.0) | | |
| Chen et al. (2018) [7] | | NCT01644500 | 6 | 737 | 8.0 | 3.7 | 54.3 | 52.8 | 25.9 | U (–0.6) | G (–1.0) | | |
| de Boer et al. (2017) [8] | RELEASE | NCT02015299 | 6 | 45 | 6.3 | 1.0 | 61.4 | 63.0 | 30.4 | P (0.1) | D (–0.3) | | |
| Defronzo et al. (2008) [9] | | NCT00286455 | 6 | 195 | 7.9 | Drug naïve | 53.2 | 53.4 | NA | P (0.0) | D (–0.6) | | |
| Dejager et al. (2007) [10] | | NCT00099905 | 6 | 594 | 8.4 | 2.0 | 47.3 | 54.0 | 32.8 | P (–0.3) | D (–0.8) | | |
| Del Prato et al. (2011) [11] | | NCT00621140 | 6 | 503 | 8.0 | Drug naïve | 48.3 | 55.7 | 29.1 | P (0.3) | D (–0.4) | | |
| Deng et al. (2017) [12] | | NA | 6 | 72 | 7.4 | <2 | 75.0 | 63.9 | 22.5 | P (–0.4) | D (–0.7) | | |
| Derosa et al. (2013) [13] | | NA | 12 | 171 | 8.0 | 0.6 | NA | 57.1 | 31.9 | M (–0.2) | M+G (–0.6) | | |
| Erem et al. (2014) [14] | | NA | 12 | 57 | 8.3 | New | 31.6 | 53.2 | 32.5 | M (–1.2) | U (–1.3) | T (–1.2) | |
| Esposito et al. (2011) [15] | | NA | 6 | 110 | 8.1 | New | 52.7 | 54.6 | 29.0 | M (–0.9) | T (–0.9) | | |
| Ferrannini et al. (2010) [16] | | NCT00528372 | 6 | 485 | 7.9 | 0.5 | 51.2 | 52.5 | 32.5 | P (–0.2) | S (–0.8) | | |
| Frederich et al. (2012) [17] | | NCT00316082 | 6 | 365 | 8.0 | 1.7 | 46.1 | 55.0 | 30.5 | P (–0.3) | D (–0.7) | | |
| Gautam et al. (2023) [18] | | CTRI/ 2020/12/030147 | 6 | 114 | 8.3 | New | 51.8 | 41.0 | NA | M+D (–1.3) | M+S (–1.2) | | |
| Hallsten et al. (2002) [19] | | NA | 6 | 41 | 6.6 | New | 68.1 | 58.0 | 29.8 | P (–0.2) | M (–0.7) | T (–0.3) | |
| Ishii et al. (2020) [20] | J-BOND | jRCTs 051180165 | 6 | 253 | 7.9 | 3.3 | 59.7 | 54.3 | 28.4 | D (–1.0) | S (–0.9) | | |
| Ishtiaque et al. (2022) [21] | | NA | 6 | 180 | 7.6 | New | NA | 47.0 | 29.4 | M+D (–1.2) | M+S (–1.0) | | |
| Jianfang et al. (2023) [22] | | NCT03796975 | 6 | 120 | 8.2 | New | 71.7 | 59.0 | 26.0 | M (–1.7) | M+T (–1.8) | | |
| Kadoglou et al. (2011) [23] | | NA | 6 | 136 | 7.6 | 2.3 | 27.2 | 62.4 | 29.9 | M (–0.7) | M+T (–1.0) | | |
| Kahn et al. (2006) [24] | | NCT00279045 | 60 | 4,360 | 7.4 | Drug naïve | 57.7 | 56.9 | 32.2 | M (–0.7) | U (–0.9) | T (–0.6) | |
| Kawazu et al. (2017) [25] | JEDIS | NA | 36 | 95 | 6.6 | New | 64.4 | 59.4 | 23.8 | P (0.0) | M (–0.2) | U (–0.1) | D (–0.4) |
| Kiyici et al. (2009) [26] | | NA | 12 | 50 | 6.7 | Drug naïve | 44.0 | 51.7 | 31.0 | P (0.1) | M (–0.3) | T (–0.7) | |
| Lambadiari et al. (2018) [27] | | NCT03010683 | 6 | 60 | 8.5 | New | 66.7 | 51.0 | 30.3 | M (–0.7) | G (–1.6) | | |
| Lee et al. (1998) [28] | | NA | 6 | 48 | 8.4 | 3.5 | 0.0 | 60.0 | 39.8 | P (–0.1) | M (–1.0) | | |
| Lewin et al. (2015) [29] | | NCT01422876 | 12 | 667 | 8.0 | Drug naïve | 53.8 | 54.6 | 31.6 | D (–0.7) | S (–0.9) | D+S (–1.2) | |
| Linong et al. (2014) [30] | | NCT01095653 | 6 | 393 | 8.3 | 1.4 | 65.4 | 51.4 | 25.6 | P (–0.3) | S (–1.1) | | |
| Li et al. (2021) [31] | | NA | 6 | 326 | 7.4 | New | 51.8 | 49.8 | 24.5 | M (–2.0) | M+D (–2.3) | | |
| Matthews et al. (2019) [32] | VERIFY | NCT01528254 | 60 | 2,001 | 6.7 | 3.4 | 47.0 | 54.4 | 31.1 | M | M+D | | |
| | | | | | | | | | | (only HbA1c target achievement rates are available) | | | |

(*Continued to the next page*)

**Supplementary Table 3.** Continued

| Study | Acronym | Clinical trial registration no. | Duration of intervention, mo | No. of randomized patients | Baseline HbA1c, % | Duration of diabetes, yr | Male sex, % | Age, yr | BMI, kg/m$^2$ (BW[a], kg) | Intervention (change in HbA1c after 6 months, %) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 1st | 2nd | 3rd | 4th |
| Mita et al. (2019) [33] | | UMIN 000022953 | 6 | 43 | 7.3 | 3.4 | 60.5 | 59.2 | 26.0 | M (–0.5) | D (–0.5) | | |
| Moretto et al. (2008) [34] | | NCT00381342 | 6 | 233 | 7.8 | 1.3 | 56.3 | 54.0 | 31.7 | P (–0.2) | G (–0.8) | | |
| Nauck et al. (2016) [35] | | NCT01183013 | 6 | 936 | 8.1 | Drug naïve | 54.8 | 57.1 | 32.6 | D (–0.4) | T (–0.7) | D+T (–1.1) | |
| Nie et al. (2017) [36] | | NA | 6 | 240 | 7.1 | 1.0 | 70.0 | 50.5 | 28.5 | M (–0.6) | T (–0.5) | M+T (–0.9) | |
| Pan et al. (2012) [37] | | NCT00698932 | 6 | 568 | 8.2 | 1.0 | 55.5 | 51.4 | 25.9 | P (–0.3) | D (–0.8) | | |
| Park et al. (2017) [38] | | NCT02946541 | 6 | 160 | 7.2 | 4.5 | 53.1 | 57.2 | 25.5 | P (0.0) | D (–0.2) | | |
| Pi-Sunyer et al. (2007) [39] | | NCT00120536 | 6 | 354 | 8.4 | 2.2 | 55.1 | 51.2 | 32.2 | P (–0.1) | D (–0.8) | | |
| Pratley et al. (2014) [40] | | NCT 01023581 | 6 | 784 | NA | 2.4 | 47.7 | 53.5 | 30.7 | P (0.2) | M (–0.9) | D (–0.5) | M+D (–1.4) |
| Roden et al. (2013) [41] | EMPA-MONO | NCT01289990 | 18 | 899 | 7.9 | Drug naïve | 63.3 | 55.0 | 28.4 | P (0.1) | D (–0.7) | S (–0.7) | |
| Rosenstock et al. (2009) [42] | | NCT00121641 | 6 | 401 | 8.0 | 2.6 | 50.3 | 53.5 | 31.7 | P (0.2) | D (–0.5) | | |
| Russell-Jones et al. (2012) [43] | DURATION-4 | NCT00676338 | 6 | 820 | 8.5 | 2.7 | 59.0 | 54.0 | (87.0*) | M (–1.5) | T (–1.6) | D (–1.2) | G (–1.5) |
| Scherbaum et al. (2008) [44] | | NCT00101712 | 12 | 306 | 6.8 | 2.6 | 59.5 | 63.1 | 30.2 | P (0.0) | D (–0.3) | | |
| Schweizer et al. (2009) [45] | | NCT00246619 | 6 | 335 | 7.7 | 3.0 | 48.7 | 70.9 | 29.6 | M (–0.8) | D (–0.6) | | |
| Sorli et al. (2017) [46] | SUSTAIN-1 | NCT02054897 | 6 | 388 | 8.1 | 4.2 | 54.0 | 53.7 | 32.9 | P (0.0) | G (–1.5) | | |
| Stenlof et al. (2013) [47] | | NCT01081834 | 6 | 587 | 8.0 | 4.3 | 46.2 | 55.4 | 31.6 | P (0.1) | S (–0.9) | | |
| Teramoto et al. (2007) [48] | | NA | 6 | 92 | 8.2 | Drug naïve | 73.9 | 56.7 | 25.0 | U (–1.4) | T (–0.8) | | |
| Terra et al. (2017) [49] | VERTIS-MONO | NCT01958671 | 6 | 461 | 8.2 | 5.0 | 56.6 | 56.4 | 33.0 | P (–0.1) | S (–0.9) | | |
| Umpierrez et al. (2014) [50] | AWARD-3 | NCT01126580 | 12 | 807 | 7.6 | 3.0 | 43.7 | 55.3 | 33.3 | M (–0.6) | G (–0.8) | | |
| Wang et al. (2024) [51] | PIONEER-11 | NCT04109547 | 6 | 521 | 8.0 | 2.2 | 63.7 | 52.0 | 28.3 | P (–0.2) | G (–1.5) | | |
| Wang et al. (2016) [52] | | NA | 6 | 28 | 8.2 | New | 40.5 | 60.2 | NA | P (–0.7) | S (–1.4) | | |
| Wu et al. (2015) [53] | | NA | 6 | 57 | 8.0 | New | 57.9 | 51.9 | 24.2 | P (–0.4) | D (–1.2) | | |
| Xiao et al. (2016) [54] | | NA | 6 | 41 | 7.3 | New | 52.9 | 62.1 | 28.1 | M+U (–0.8) | M+D (–1.1) | | |
| Xu et al. (2015) [55] | CONFIDENCE | NCT01147627 | 12 | 278 | 8.0 | New | 61.3 | <50 | 25.9 | T (–1.3) | G (–1.8) | | |
| Yang et al. (2015) [56] | | NA | 6 | 109 | 7.1 | 3.6 | 54.3 | 56.2 | 25.0 | P (0.2) | D (–0.5) | | |
| Yang et al. (2013) [57] | | NA | 6 | 182 | 8.3 | 3.1 | 58.0 | 53 | 26.1 | P (–0.1) | D (–0.7) | | |
| Yoon et al. (2011) [58] | PEAM | NA | 12 | 349 | 7.8 | Drug naïve | 55.3 | 50.9 | 25.6 | M (–1.0) | U (–1.0) | T (–0.9) | |
| Zhang et al. (2023) [59] | | ChiCTR 2000037951 | 6 | 64 | 8.3 | New | 56.4 | 47.0 | 26.4 | M+U (–1.2) | M+S (–1.5) | | |
| Zografou et al. (2015) [60] | | NA | 6 | 64 | 8.1 | Drug naïve | 59.4 | 54.4 | 31.9 | M (–1.2) | M+D (–1.7) | | |

HbA1c, glycosylated hemoglobin; BMI, body mass index; BW, body weight; NA, not available; M, metformin; D, dipeptidyl peptidase-4 inhibitor; S, sodium-glucose cotransporter-2 inhibitor; P, placebo or lifestyle management only; G, glucagon-like peptide-1 receptor agonist; U, sulfonylureas; T, thiazolidinedione.
[a]In cases where BMI was unavailable in the literature and only BW was provided, BW was indicated, with the value presented in parentheses.

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