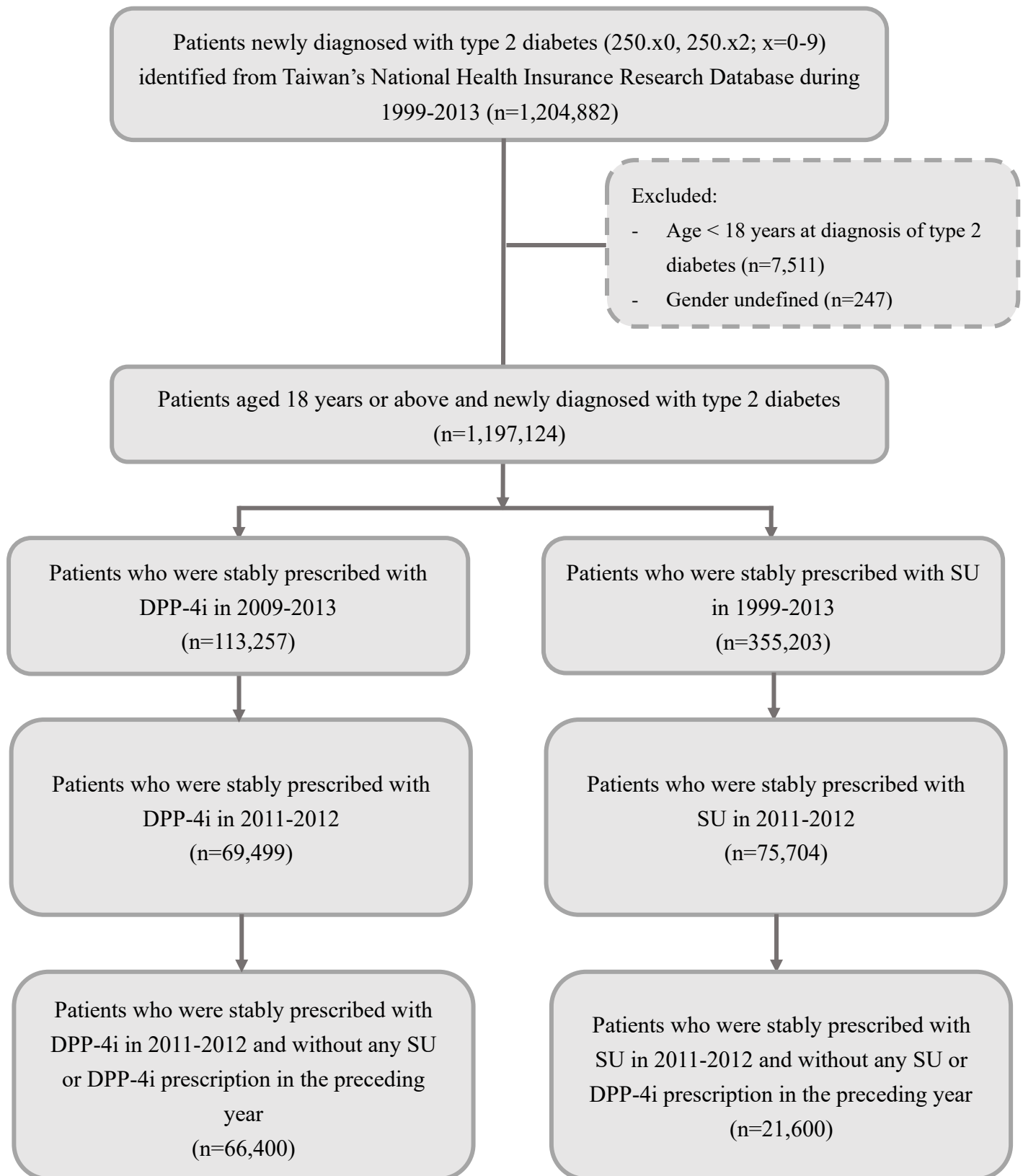


Figure S1: Patient selection flow

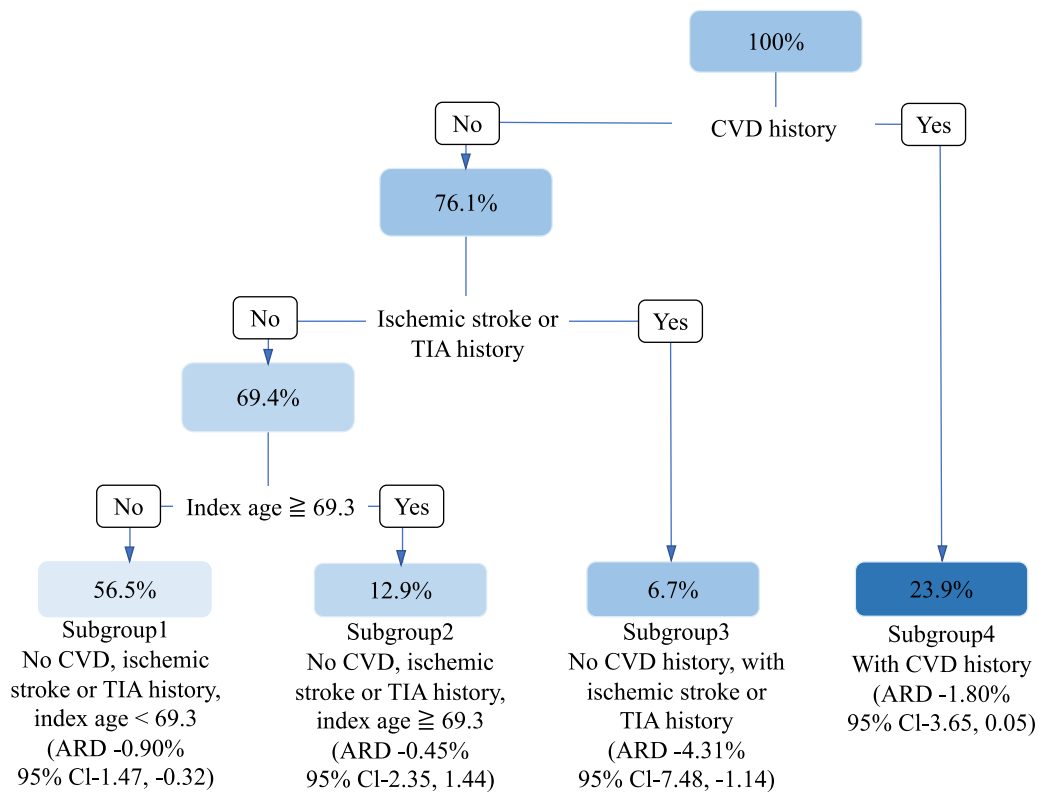


Note: Type 2 diabetes cases were the patients who had any of the following criteria: 1) at least two outpatient visits with a type 2 diabetes diagnosis (the International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9 CM] codes: 250.x0, 250.x2, x=0-9) within a given year, 2) at least one inpatient visit with a type 2 diabetes diagnosis, or 3) at least one outpatient visit with a type 2 diabetes diagnosis and any prescriptions of a GLA within a given year. The incidence year of type 2 diabetes patients

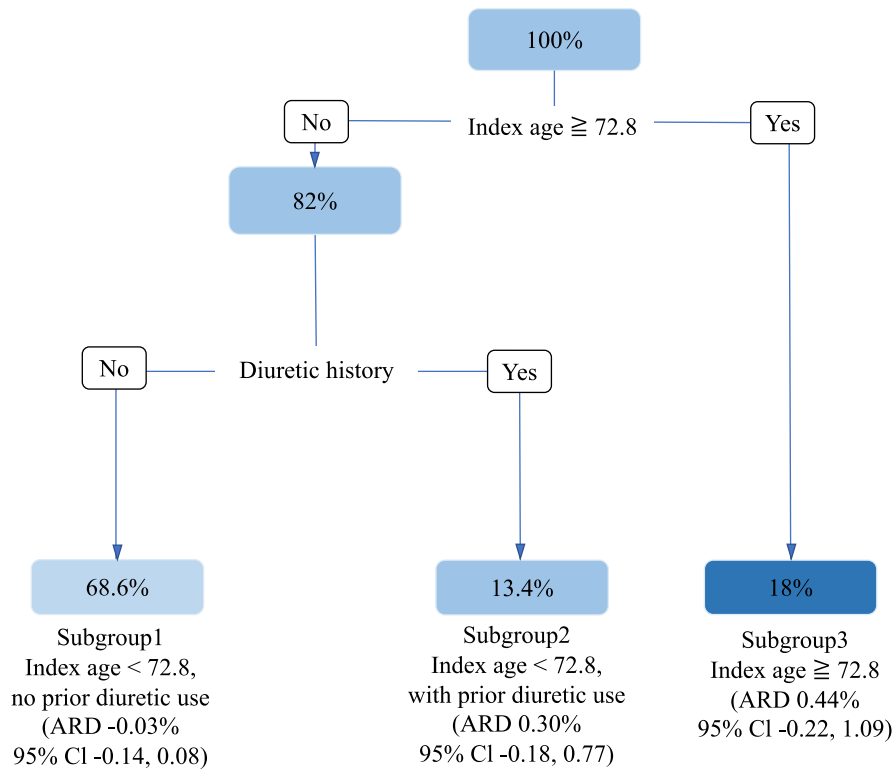
was determined as the first date of diabetes diagnosis during 1999-2012 without any diabetes diagnoses in the previous 3 years.

Figure S2: Subgroups classified by the tree analysis (analysis of primary cohort under as-treated scenario)

(a)



(b)



(c)

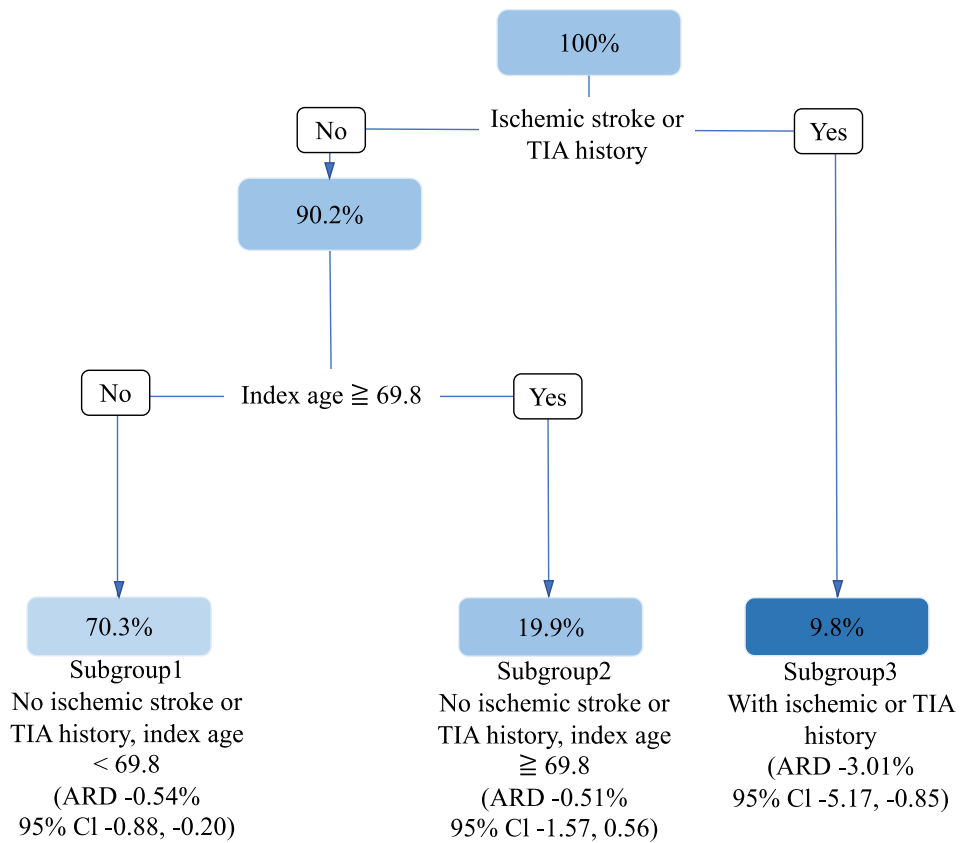


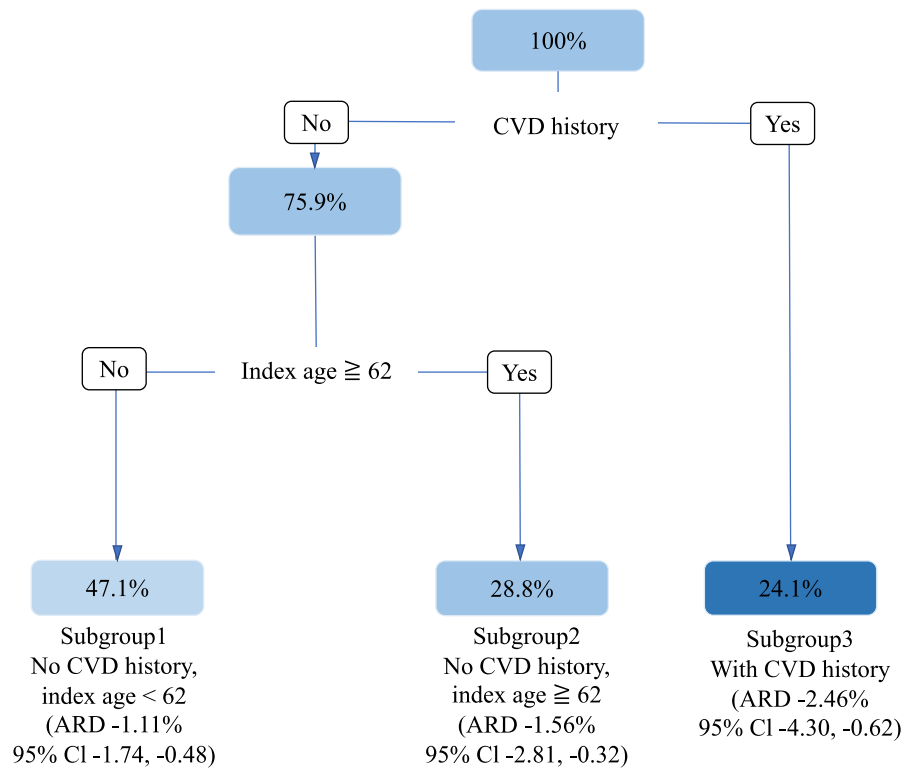
Figure legend: (a) Composite cardiovascular disease event as the outcome, (b) all-cause death as the outcome, and (c) three-point major adverse cardiovascular event as the outcome.

Each node/subgroup specifies the percentage of the subjects partitioned by the significant factors identified by the tree analysis. For example, in Supplementary Figure 2(a), Subgroup 1 included 56.5% of patients in the primary cohort who did not have CVD, ischemic stroke, or transient ischemic attack (TIA) history and were aged below 69.3 years when initiating treatments. The absolute risk difference (ARD) with its 95% CI indicates the difference in the event rate of composite cardiovascular disease (CVD) between treatments. For example, Subgroup 1 had a significant reduction in the ARD for composite CVD with DPP-4i versus SU use of 0.90% (95% CI 0.32% to 1.47% decrease).

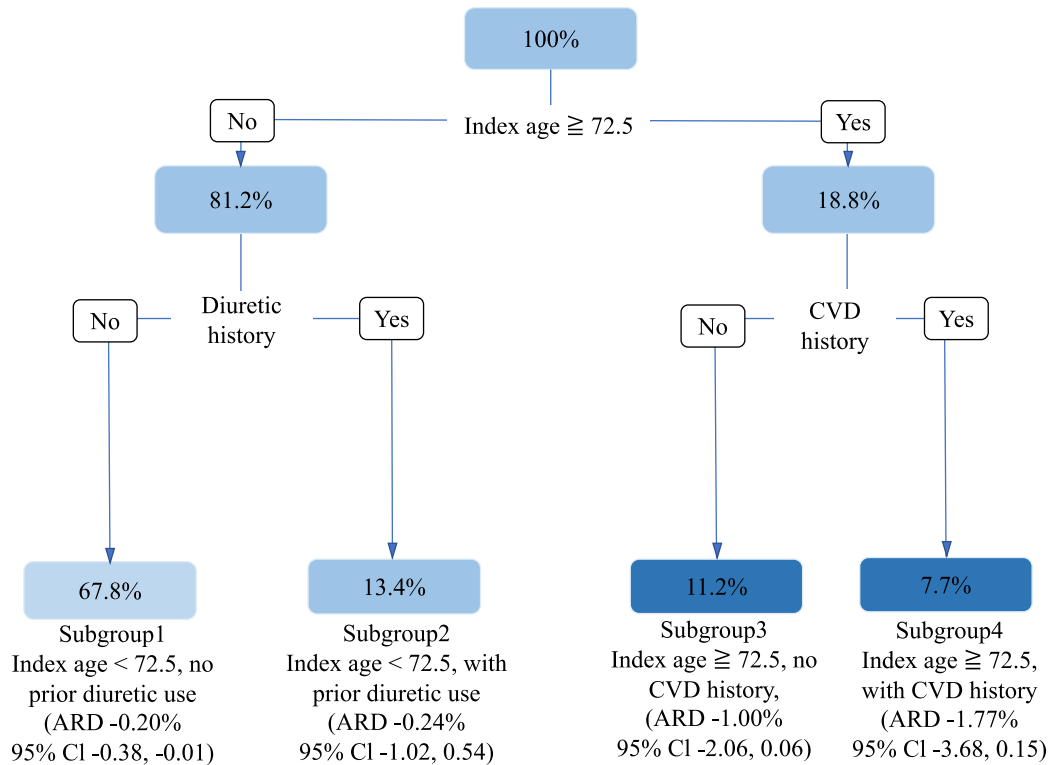
Abbreviations: CVD, cardiovascular; TIA, transient ischemic attack; ARD, absolutely risk reduction.

Figure S3: Subgroups classified by the tree analysis (analysis of secondary cohort under intention-to-treat scenario)

(a)



(b)



(c)

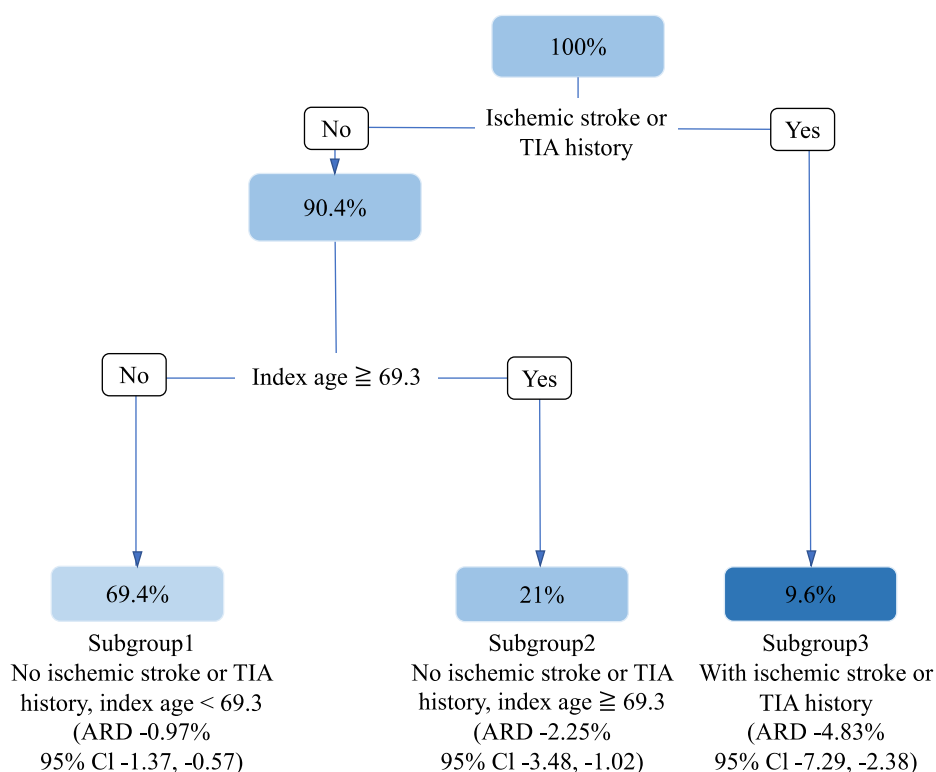


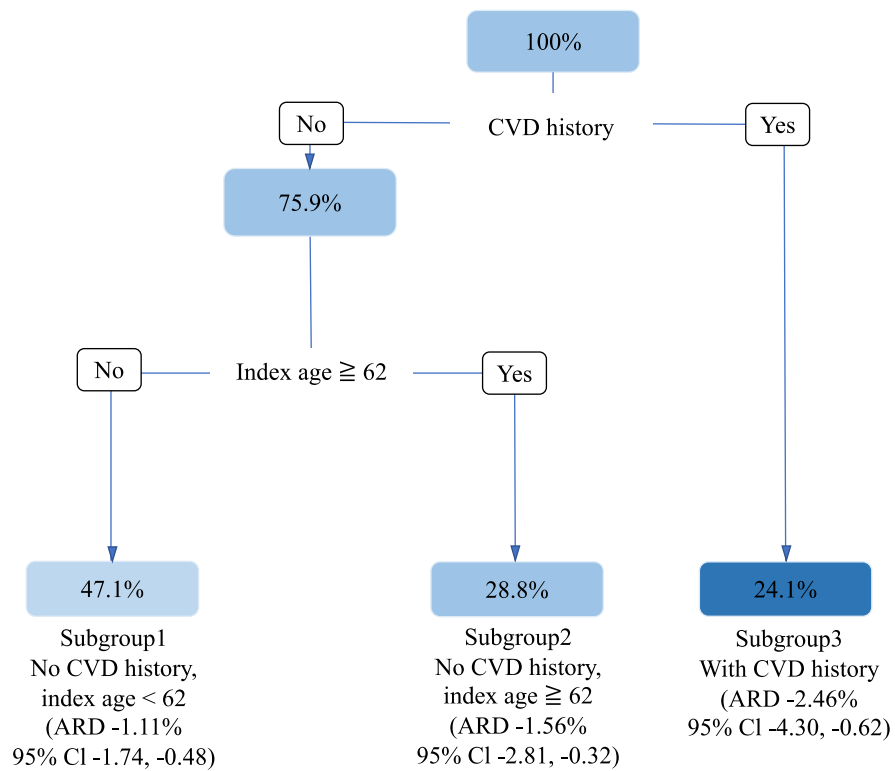
Figure legend: (a) Composite cardiovascular disease event as the outcome, (b) all-cause death as the outcome, and (c) three-point major adverse cardiovascular event as the outcome.

Each node/subgroup specifies the percentage of the subjects partitioned by the significant factors identified by the tree analysis. For example, in Supplementary Figure 3(a), Subgroup 1 included 47.1% of patients in the primary cohort who did not have CVD, ischemic stroke, or transient ischemic attack (TIA) history and were aged below 62 years when initiating treatments. The absolute risk difference (ARD) with its 95% CI indicates the difference in the event rate of composite cardiovascular disease (CVD) between treatments. For example, Subgroup 1 had a significant reduction in the ARD for composite CVD with DPP-4i versus SU use of 1.11% (95% CI 0.48% to 1.74% decrease).

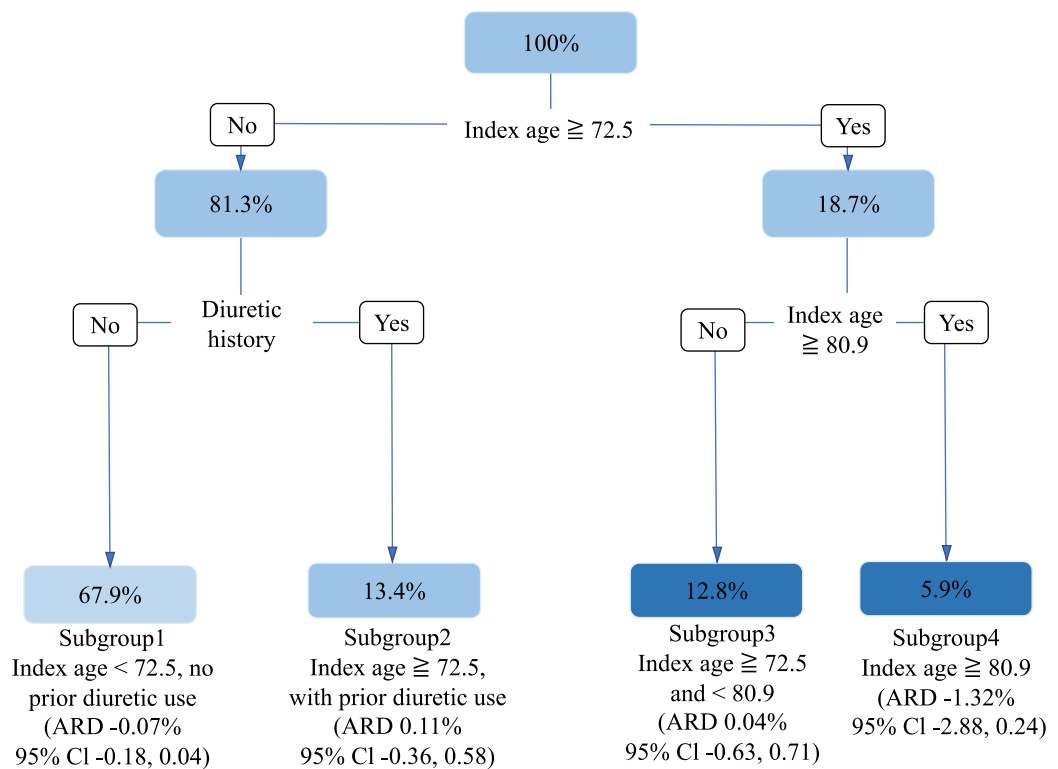
Abbreviations: CVD, cardiovascular; TIA, transient ischemic attack; ARD, absolutely risk reduction.

Figure S4: Subgroups classified by the tree analysis (analysis of secondary cohort under as-treated scenario)

(a)



(b)



(c)

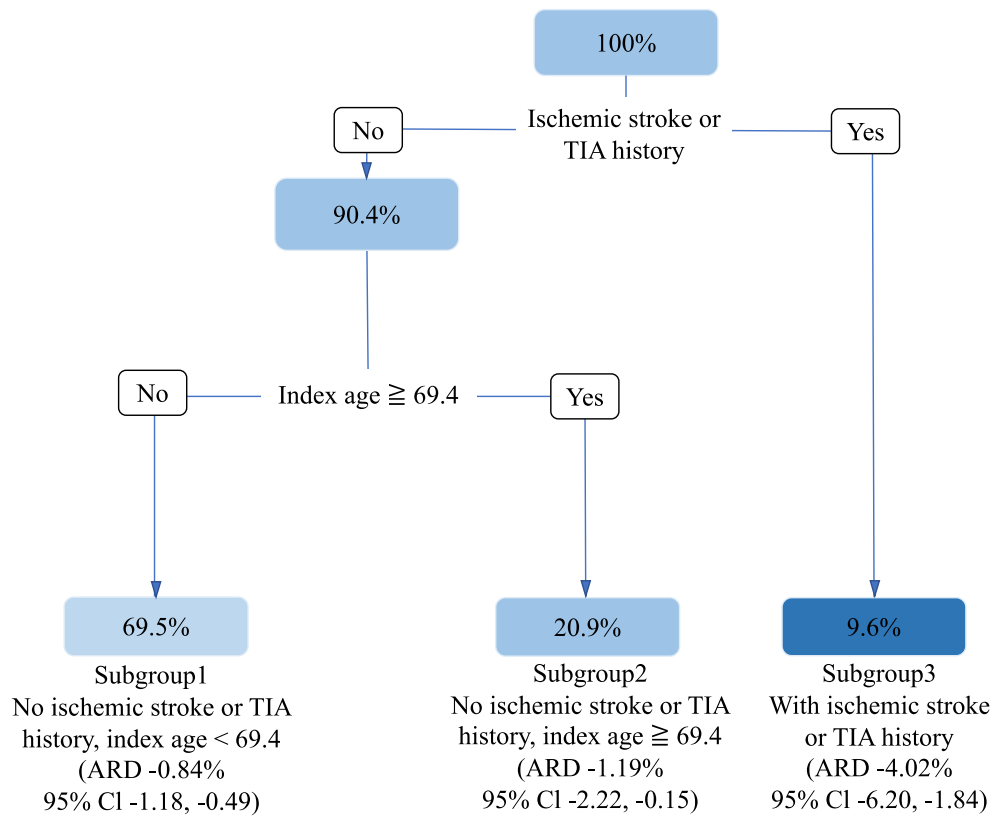


Figure legend: (a) Composite cardiovascular disease event as the outcome, (b) all-cause death as the outcome, and (c) three-point major adverse cardiovascular event as the outcome.

Each node/subgroup specifies the percentage of the subjects partitioned by the significant factors identified by the tree analysis. For example, in Supplementary Figure 4(a), Subgroup 1 included 47.1% of patients in the primary cohort who did not have CVD, ischemic stroke, or transient ischemic attack (TIA) history and were aged below 62 years when initiating treatments. The absolute risk difference (ARD) with its 95% CI indicates the difference in the event rate of composite cardiovascular disease (CVD) between treatments. For example, Subgroup 1 had a significant reduction in the ARD for composite CVD with DPP-4i versus SU use of 1.11% (95% CI 0.48% to 1.74% decrease).

Abbreviations: CVD, cardiovascular; TIA, transient ischemic attack; ARD, absolutely risk reduction.