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Supplementary Table 1. Read codes and SNOMED-CT Concept IDs for Non-alcoholic fatty liver disease

CPRD GOLD

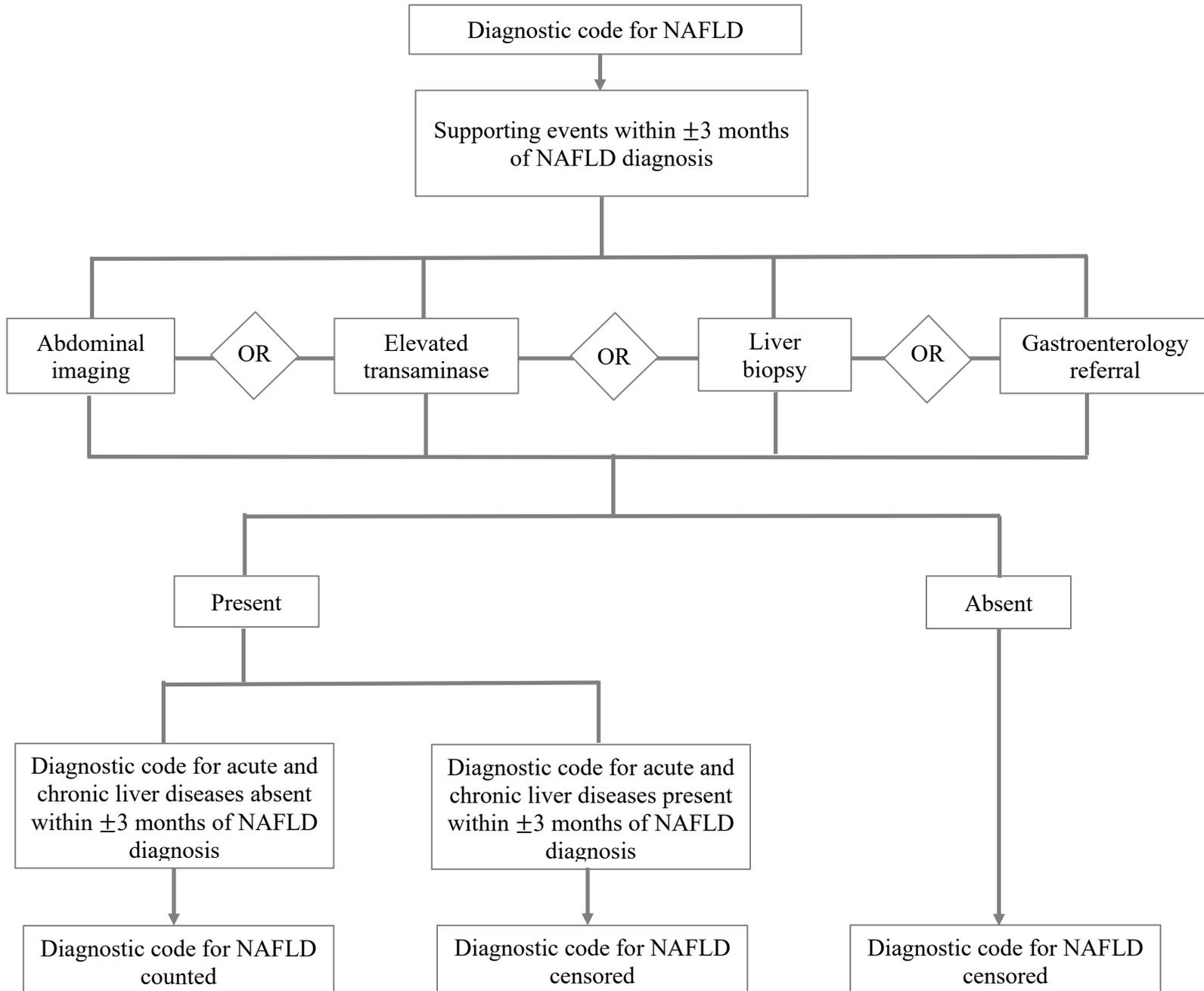
Medical term	Read code
Non-alcoholic fatty liver	J61y100
Nonalcoholic steatohepatitis	J61y800

CPRD Aurum

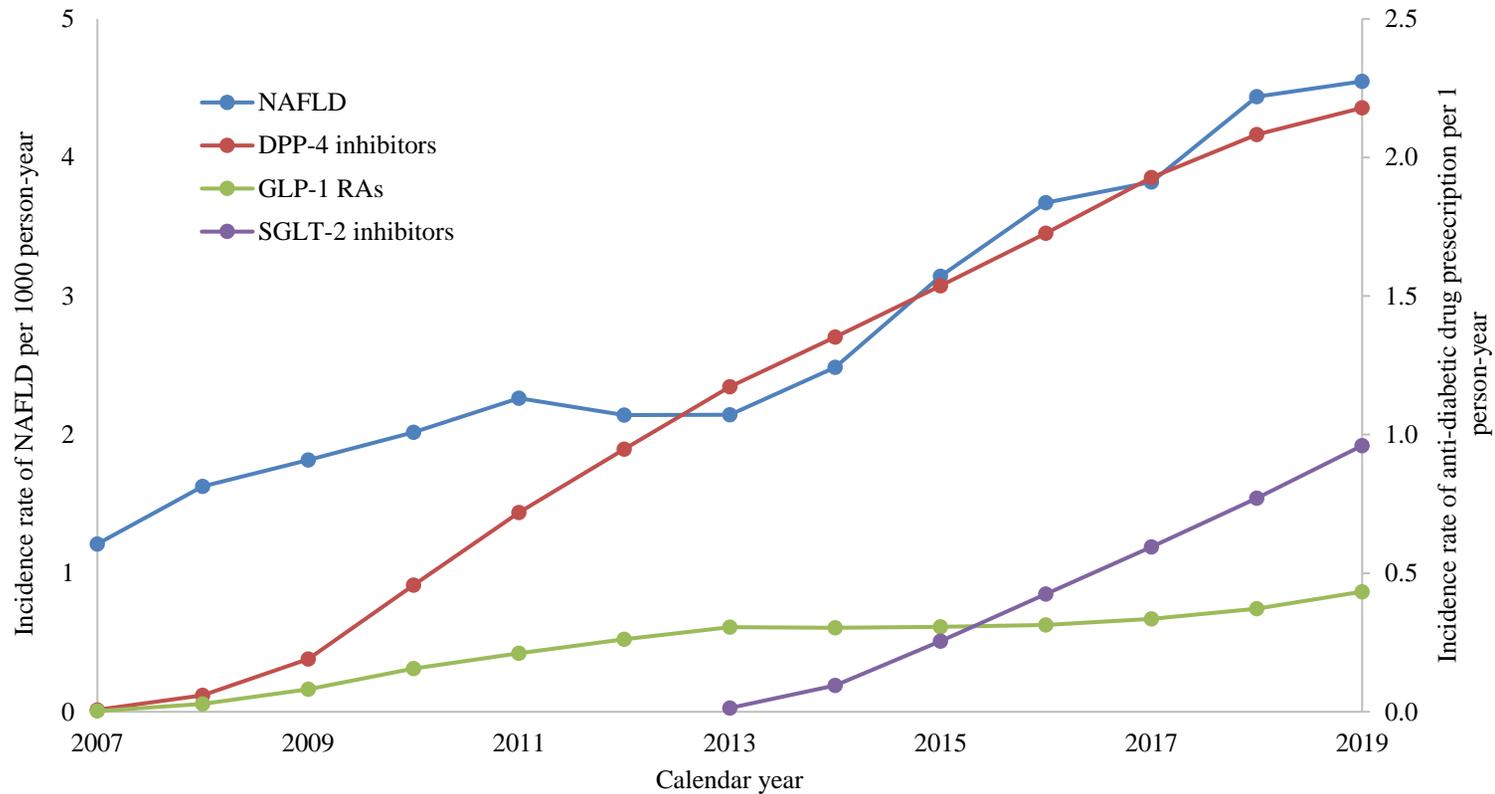
Medical Term	SNOMED CT Concept ID
NAFLD - Nonalcoholic fatty liver disease	197315008
Non-alcoholic fatty liver	197315008
NASH - Nonalcoholic steatohepatitis	442685003
Nonalcoholic steatohepatitis	442685003

Abbreviations: CPRD, Clinical Practice Research Datalink; ID, Identifiers; SNOMED CT, Systematized Nomenclature of Medicine Clinical Terms.

Supplementary Figure 1. Algorithm for Alternative Outcome Definition for NAFLD

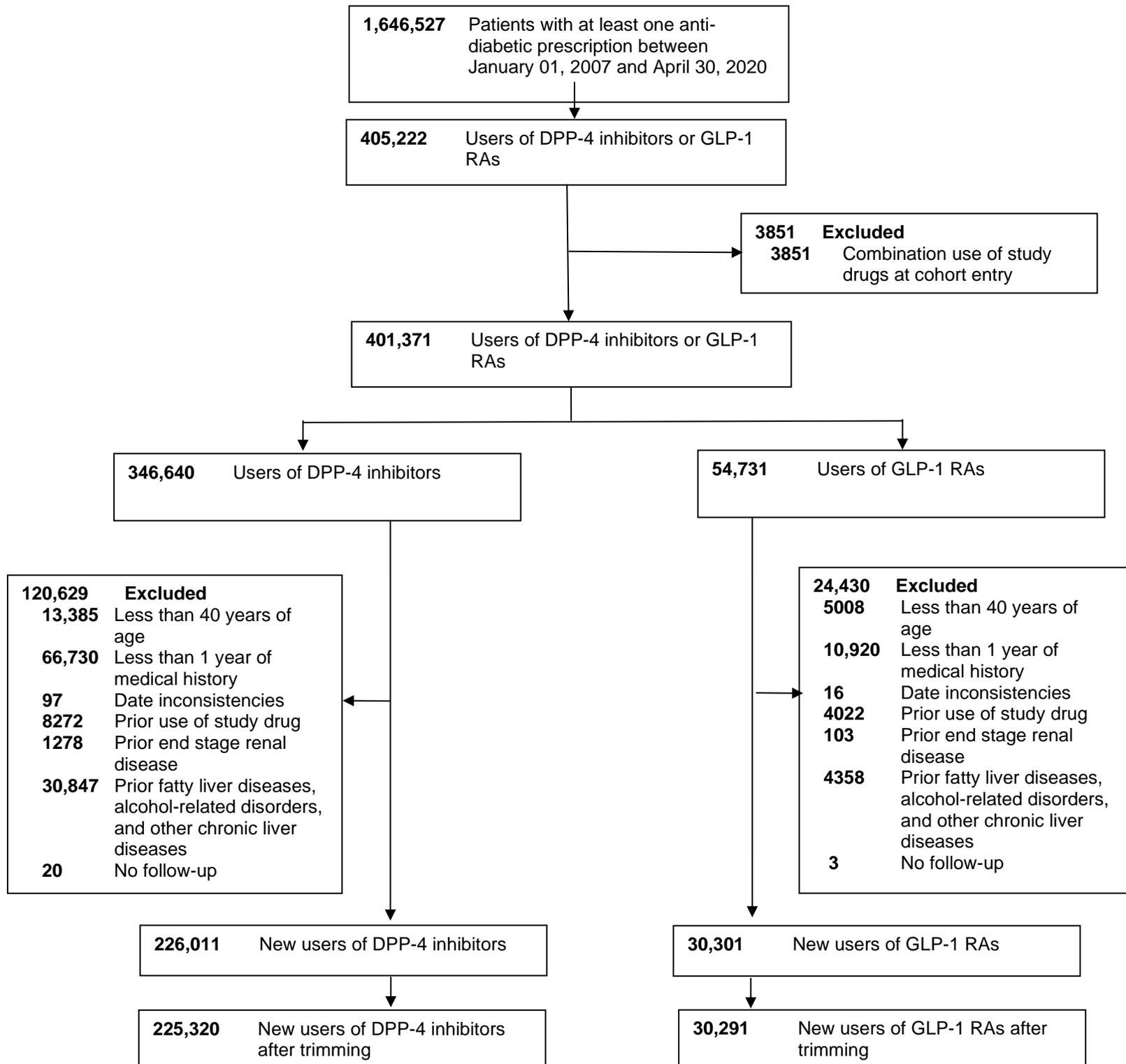


Supplementary Figure 2. Incidence of Non-Alcoholic Fatty Liver Disease and Prescribing Patterns of Study Drugs Between 2007-2019

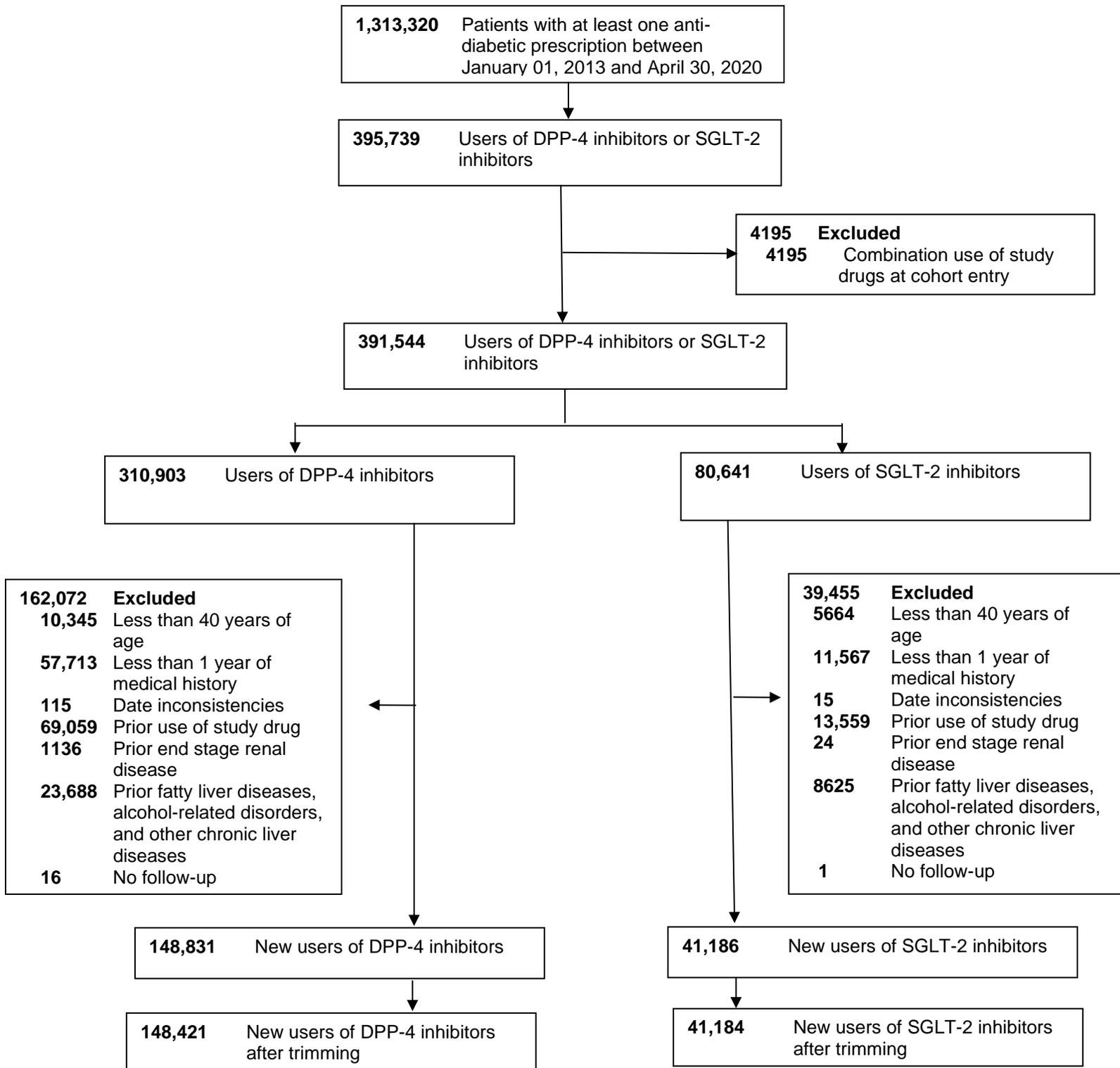


Among the patients with at least one anti-diabetic prescription between 2007 and 2019, excluding those less than 40 years of age, less than 1 year of, medical history, date inconsistencies, prior use of study drugs, prior end stage renal disease, prior alcohol-related disorders, NAFLD, and chronic liver diseases. Year 2020 was excluded as rates differed because of COVID-19 pandemic. Abbreviations: GLP-1 RA, glucagon-like peptide-1 receptor agonist; SGLT, sodium-glucose co-transporter; DPP, dipeptidyl peptidase

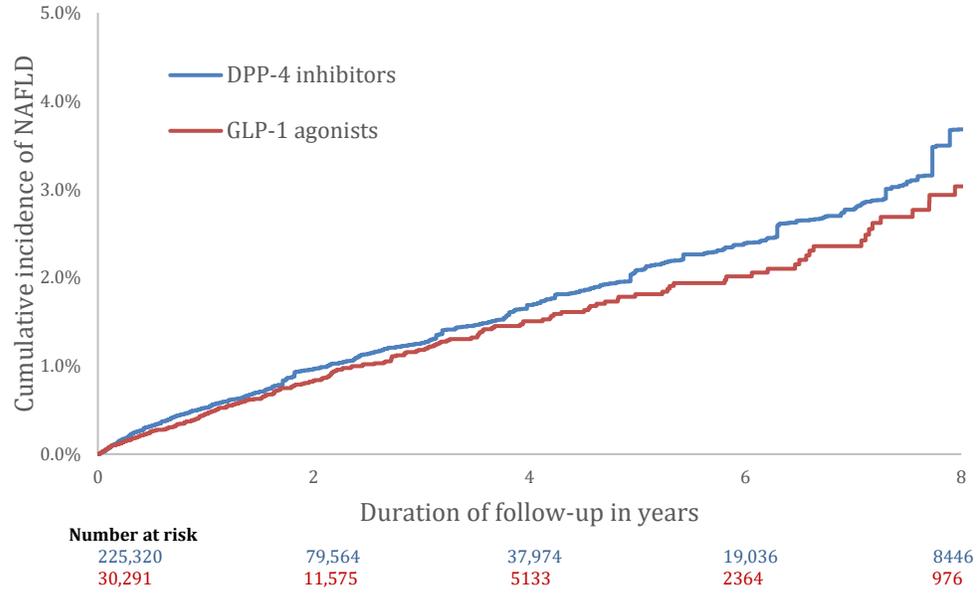
Supplementary Figure 3. Study Flow Chart for Comparison Between Users of Glucagon-like-Peptide-1 Receptor Agonists and Dipeptidyl Peptidase-4 Inhibitors



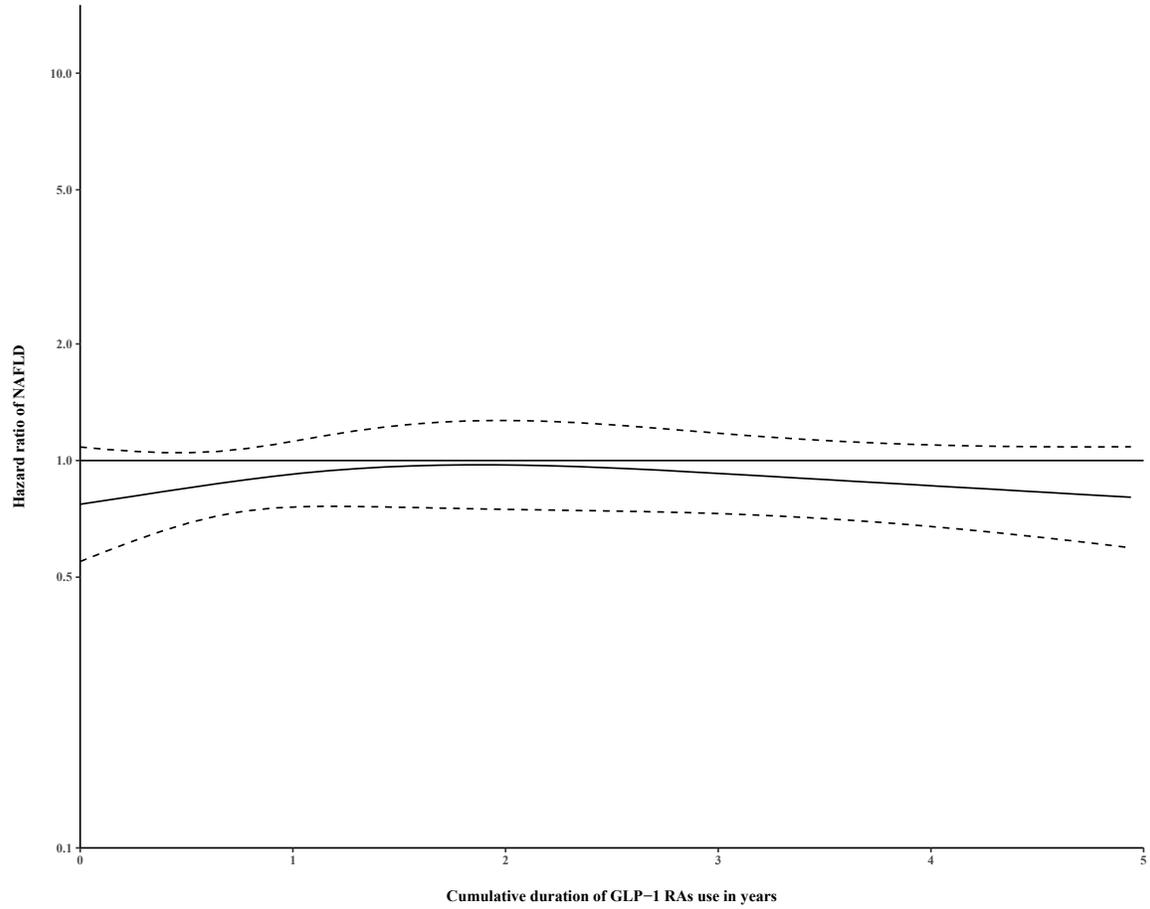
Supplementary Figure 4. Study Flow Chart for Comparison Between Users of Sodium-Glucose Co-Transporter-2 Inhibitors and Dipeptidyl Peptidase-4 Inhibitors



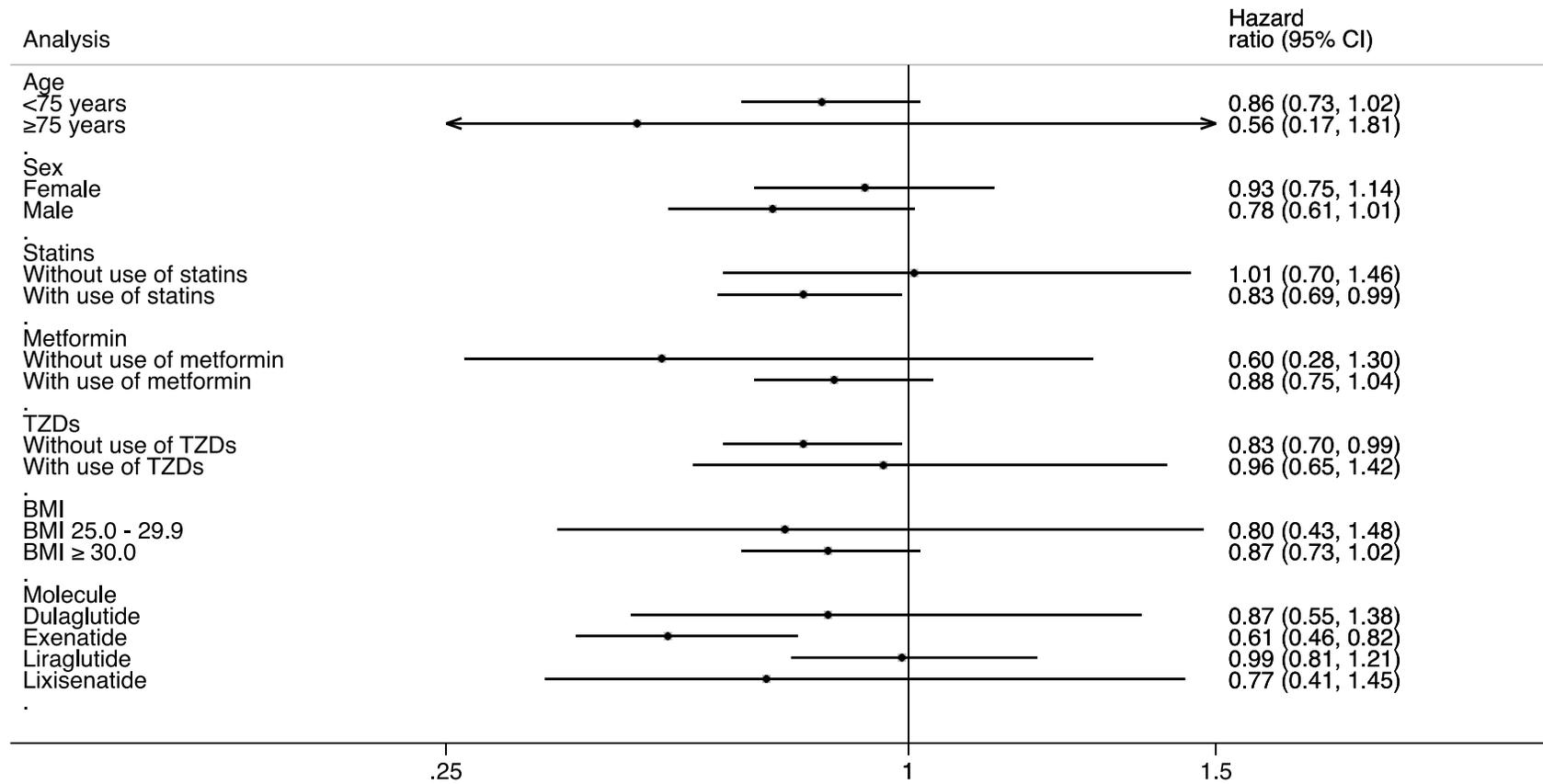
Supplementary Figure 5. Weighted cumulative incidence curves of non-alcoholic fatty liver disease in the glucagon-like peptide-1 receptor agonist vs. dipeptidyl peptidase-4inhibitor cohort



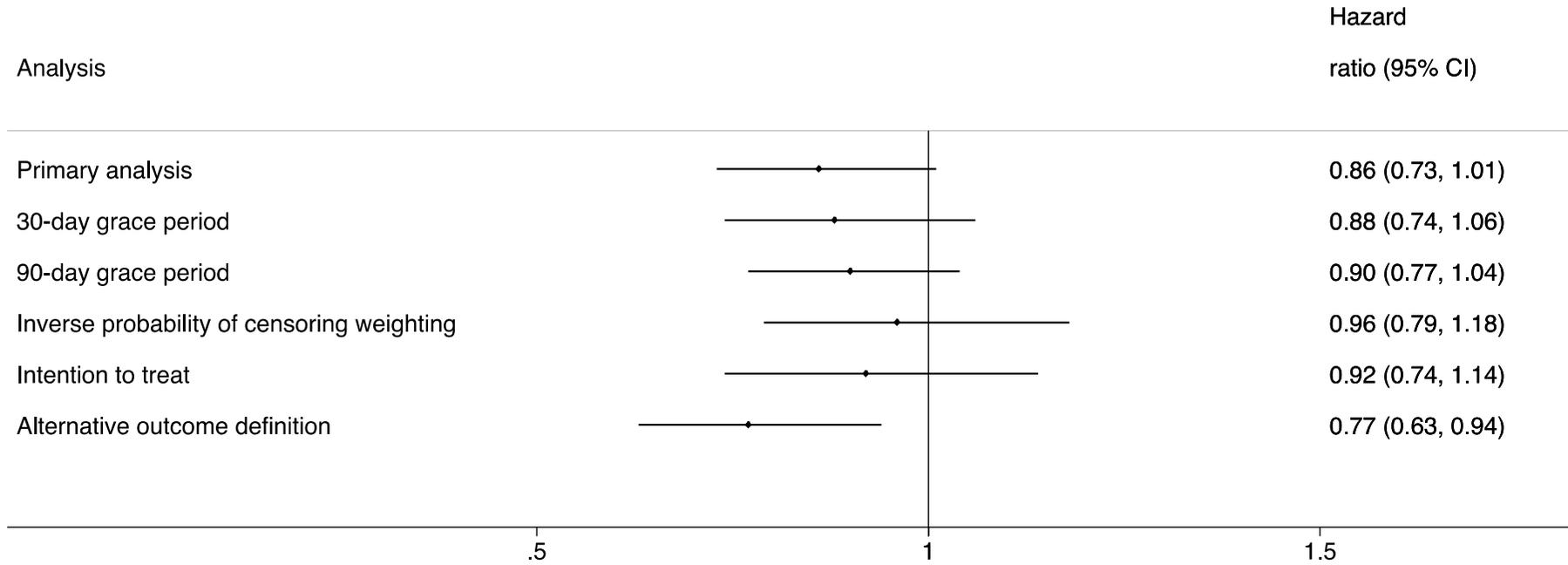
Supplementary Figure 6. Restricted Cubic Spline of Continuous Duration of Glucagon-Like-Peptide-1 Receptor Agonist Use on the Incidence of Non-Alcoholic Fatty Liver Disease.



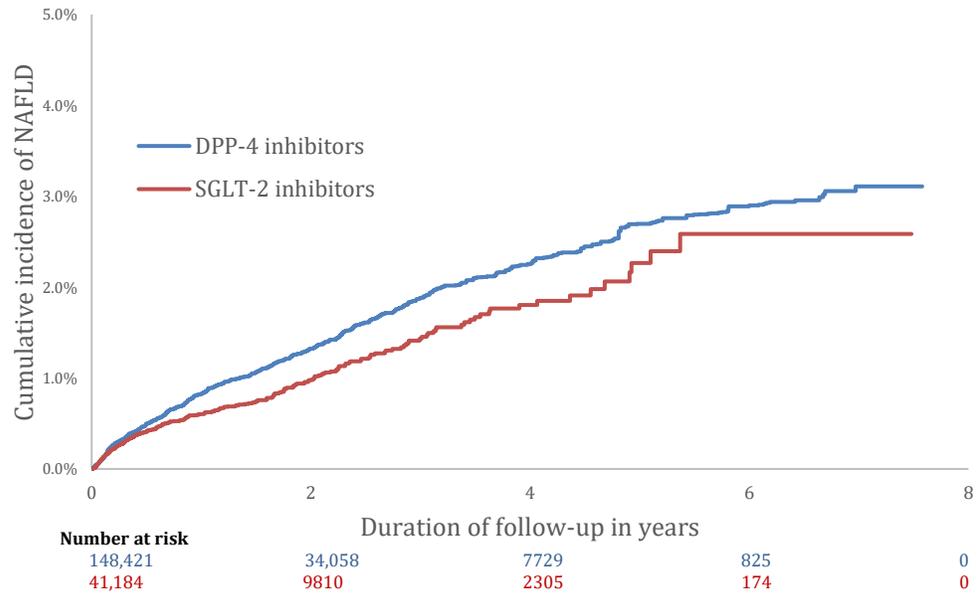
Supplementary Figure 7. Forest Plot Depicting Secondary Analyses Comparing GLP-1 RAs with DPP-4 Inhibitors



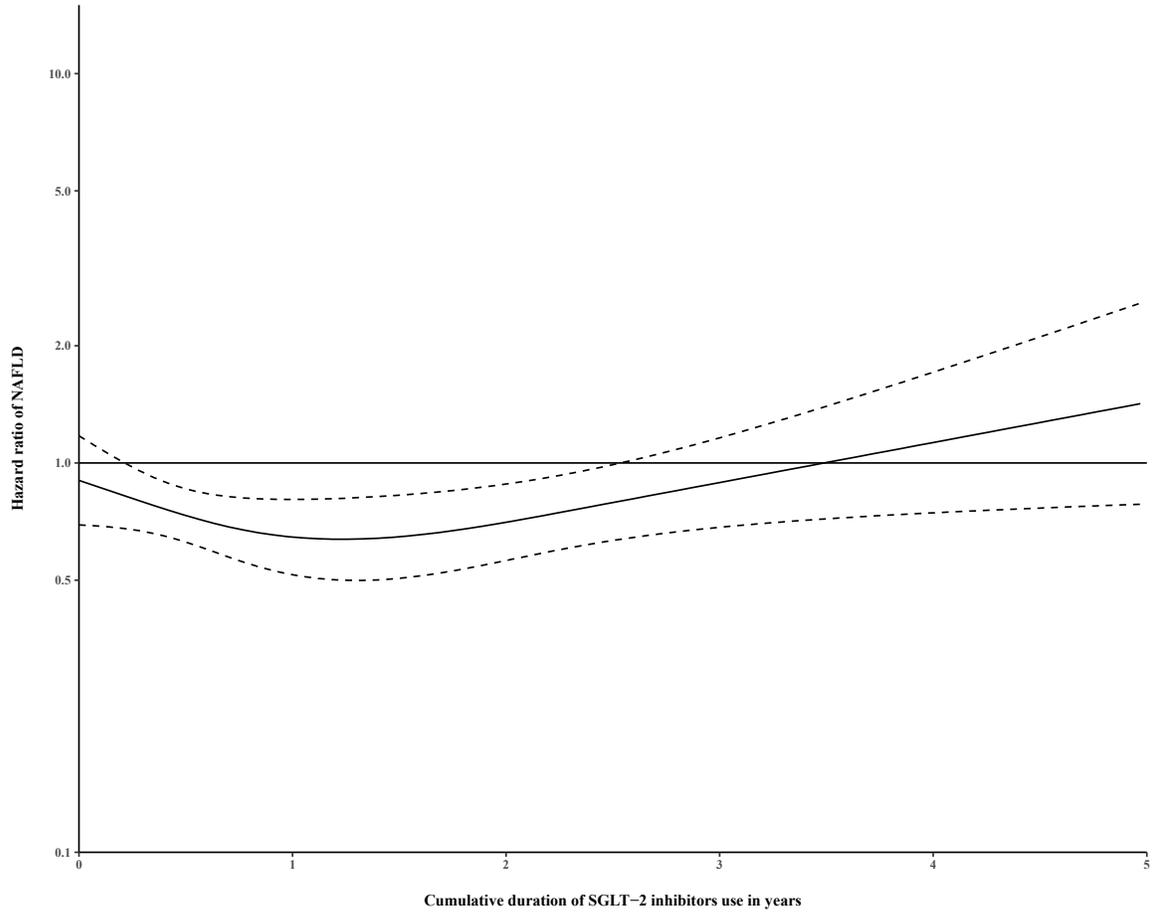
Supplementary Figure 8. Forest Plot Depicting Sensitivity Analyses Comparing GLP-1 RAs with DPP-4 Inhibitors



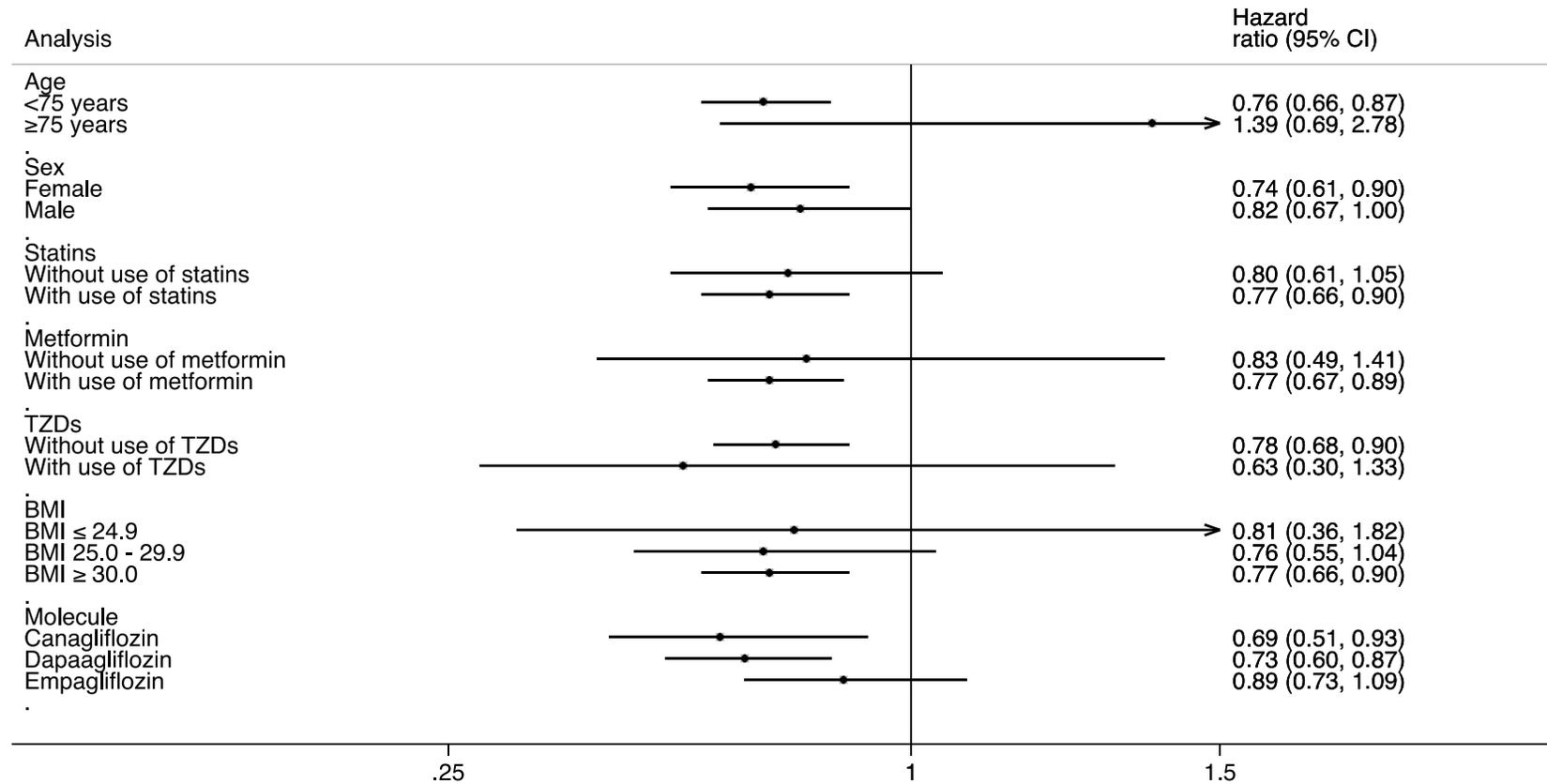
Supplementary Figure 9. Weighted cumulative incidence of non-alcoholic fatty liver disease in the sodium-glucose cotransporter-2 inhibitor vs. the dipeptidyl peptidase-4 inhibitor cohort



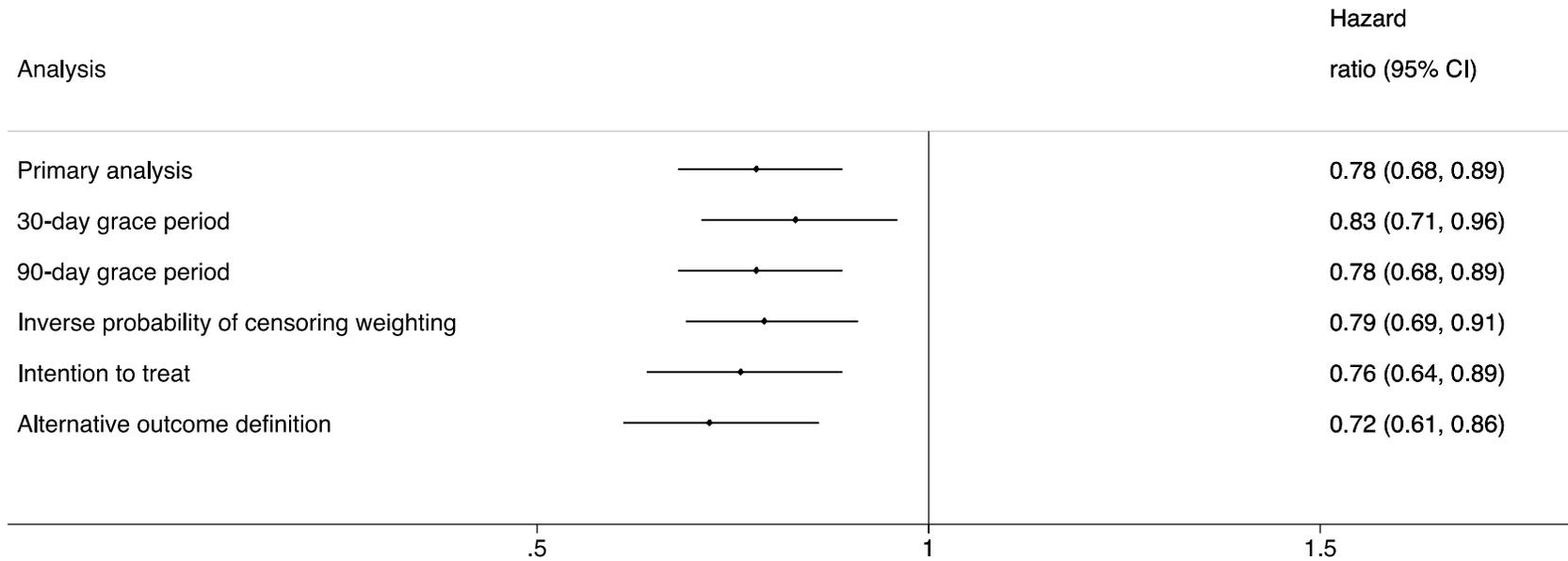
Supplementary Figure 10. Restricted Cubic Spline of Continuous Duration of Sodium-Glucose Co-Transporter-2 Inhibitors Use on the Incidence of Non-Alcoholic Fatty Liver Disease.



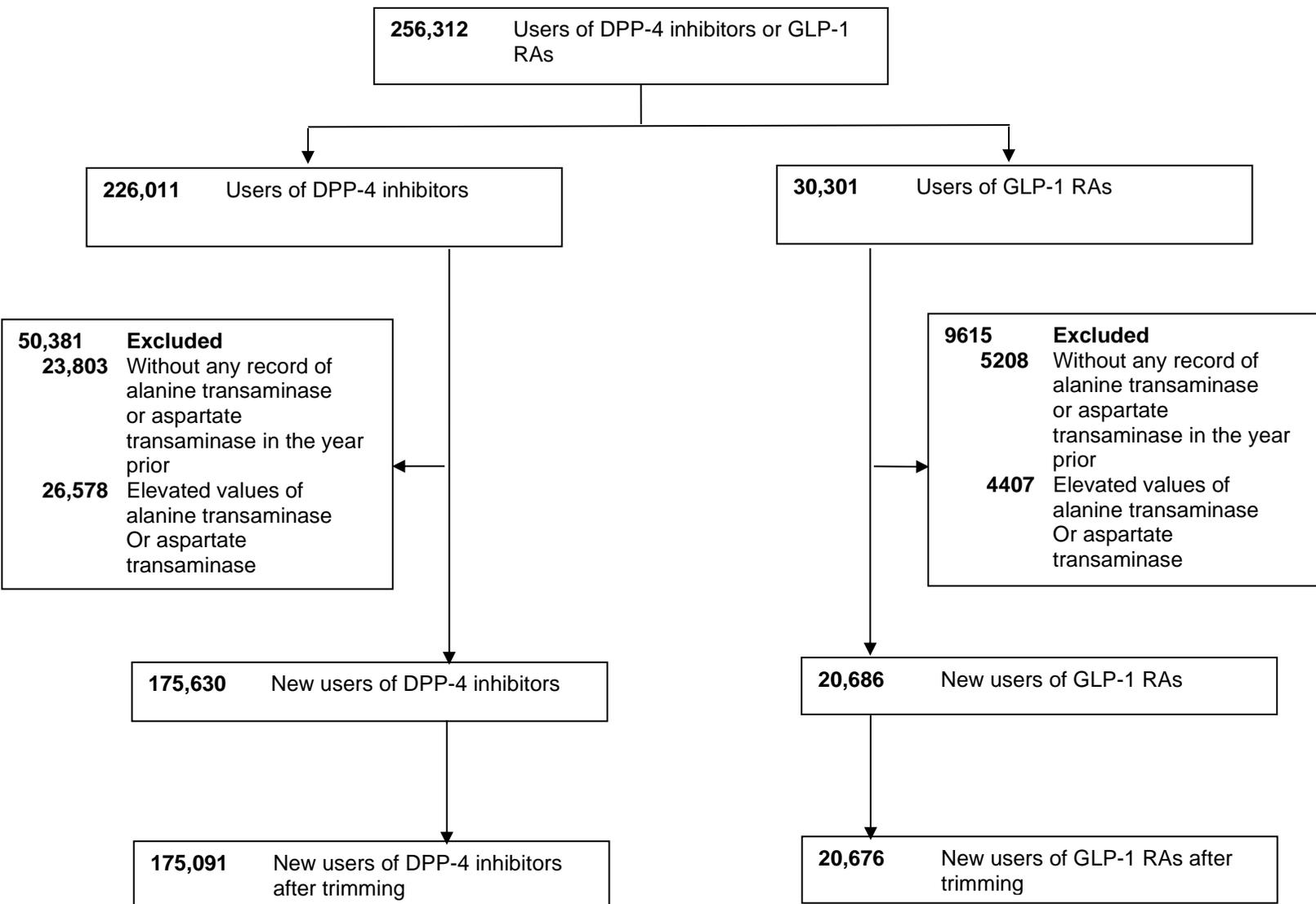
Supplementary Figure 11. Forest Plot Depicting Secondary Analyses Comparing SGLT-2 Inhibitors with DPP-4 Inhibitors



Supplementary Figure 12. Forest Plot Depicting Sensitivity Analyses Comparing SGLT-2 Inhibitors with DPP-4 Inhibitors

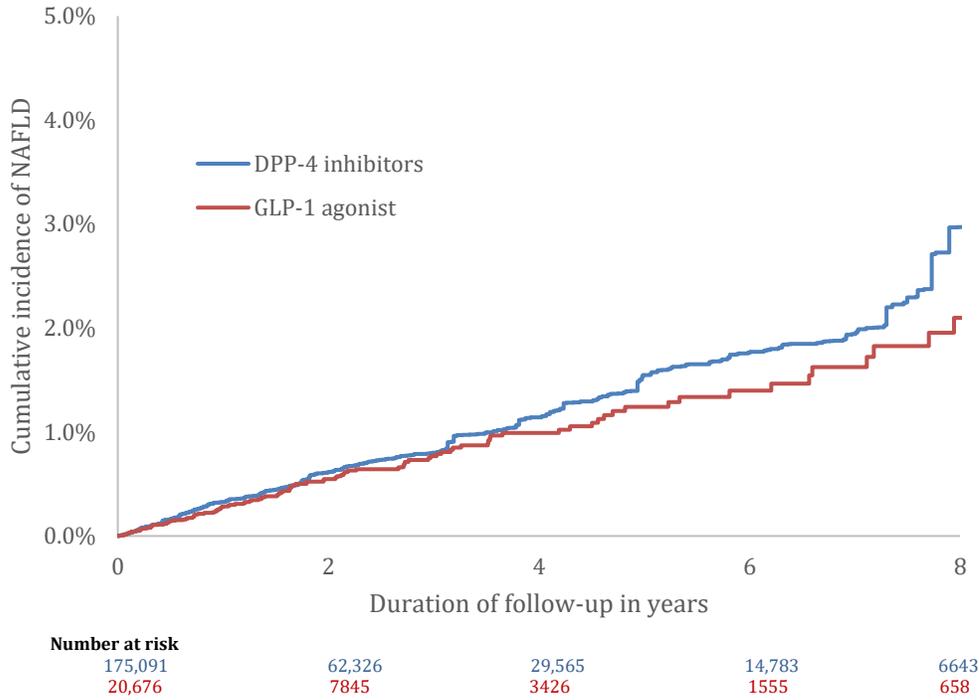


Supplementary Figure 13. Study Flow Chart for Restricted Sub-Cohort Comparison Between Users of Glucagon-like-Peptide-1 Receptor Agonists and Dipeptidyl Peptidase-4 Inhibitors

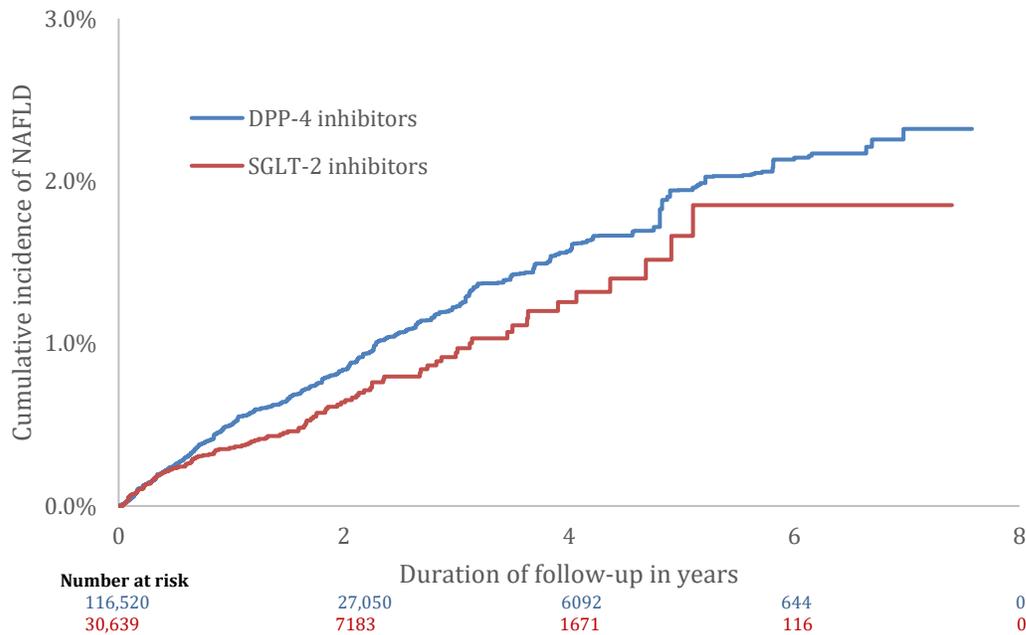


Supplementary Figure 14: Weighted cumulative incidence curves of non-alcoholic fatty liver disease in A. the glucagon-like peptide-1 receptor agonist vs. dipeptidyl peptidase-4 inhibitor restricted sub-cohort and B. the sodium-glucose cotransporter-2 inhibitor vs. dipeptidyl peptidase-4 inhibitor restricted sub-cohort

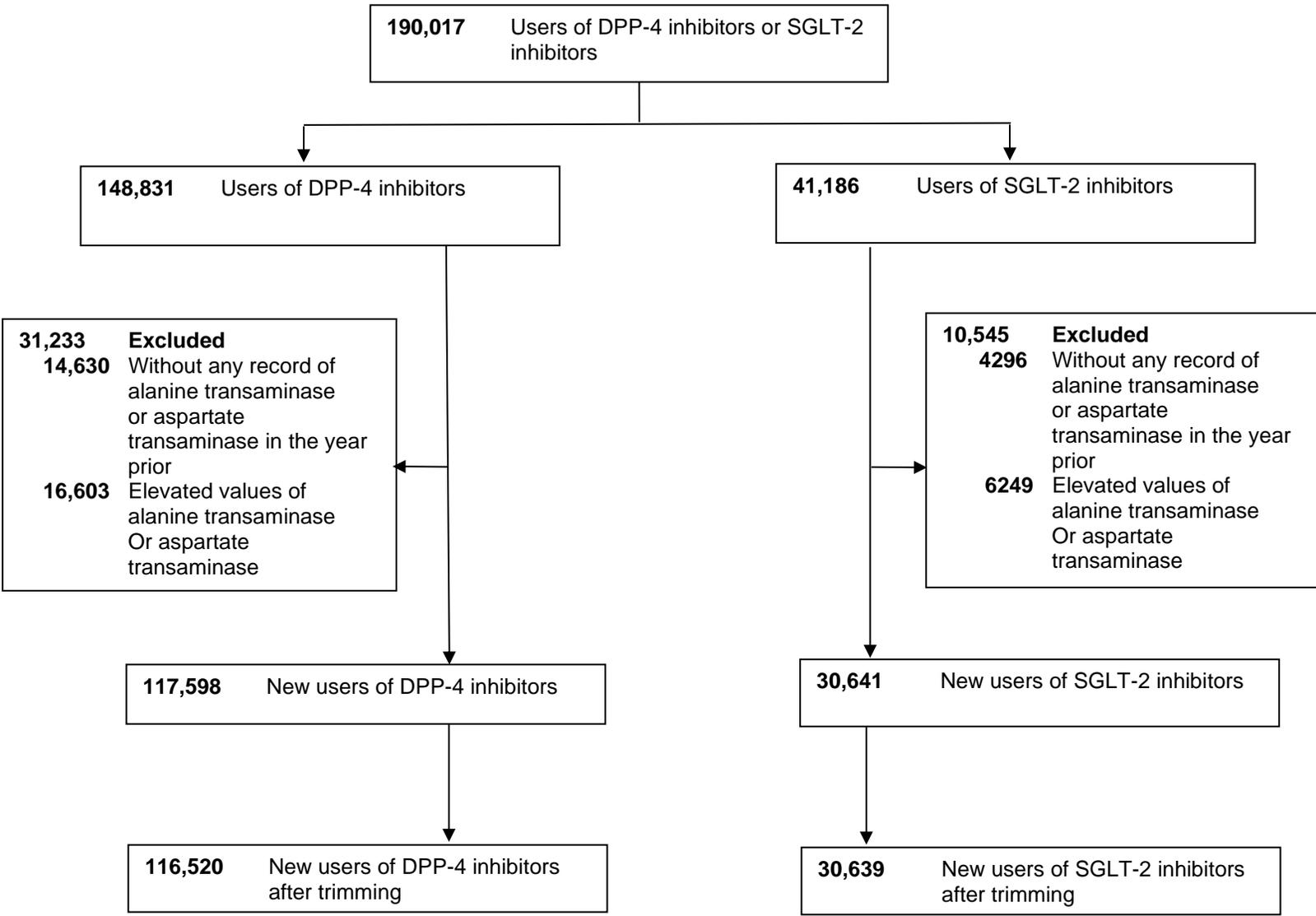
14A



14B

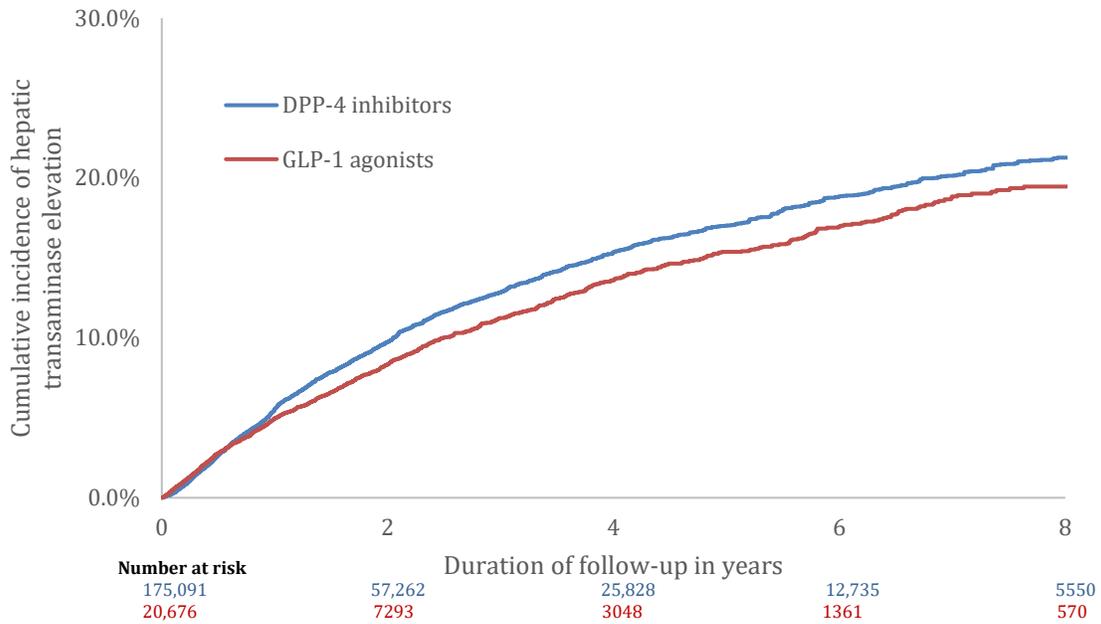


Supplementary Figure 15. Study Flow Chart for Restricted Sub-Cohort Comparison Between Users of Sodium-Glucose Co-Transporter-2 Inhibitors and Dipeptidyl Peptidase-4 Inhibitors



Supplementary Figure 16: Weighted cumulative incidence curves of hepatic transaminase elevation in A. the glucagon-like peptide-1 receptor agonist vs. dipeptidyl peptidase-4 inhibitor restricted sub-cohort and B. the sodium-glucose cotransporter-2 inhibitor vs. the dipeptidyl peptidase-4 inhibitor restricted sub-cohort

16A



16B

