Are Diabetes and Glucose-Lowering Drugs Equivalently Reco(r)ded in CPRD GOLD and Aurum?

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BACKGROUND

- In England, many primary care practices migrated from VISION to EMIS software. In 2017, Clinical Practice Research Datalink (CPRD) launched Aurum, incorporating some of these migrating practices from GOLD and new practices using EMIS.
- Studies using Aurum data are ongoing.[1,2] Code lists and algorithms to define variables are being adapted from previous experience in GOLD studies.

OBJECTIVES

- To compare the recording of diabetes diagnoses, diabetes medications, and glycosylated hemoglobin (HbA1c) values before migration in GOLD with Aurum by adapting existing GOLD algorithms to Aurum
- To compare the recording of diabetes diagnoses, diabetes medications, and HbA1c 1 year before the migration date and 1 year after the first collection date (fcd) in Aurum

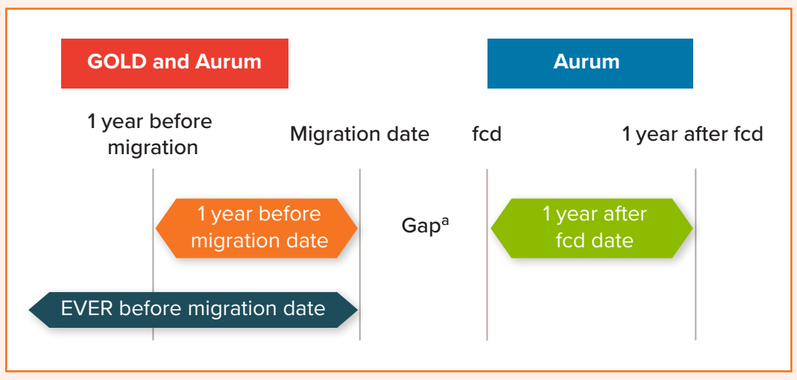
DISCLOSURES

RTI Health Solutions receives institutional funding for projects from public and private entities.

METHODS

- Among practices migrating from GOLD to Aurum, 7 were randomly selected, and adult patients registered in the practice at least 1 year before the last collection date or migration date for GOLD were included.
- For both GOLD and Aurum, prevalence of diabetes diagnoses ever before migration, diabetes control (HbA1c), prescription of glucose-lowering drugs (GLDs), and availability of duration of GLD prescriptions within 1 year before migration were evaluated and, for Aurum, also within 1 year after fcd (Figure 1).
  - Among patients with diabetes, HbA1c control was defined as controlled (≤ 53 mmol/mol [≤ 7%]) or uncontrolled (> 53 mmol/mol [> 7%]).

Figure 1. Evaluation Periods



[a] Period of time where historical data is only available in Aurum, due to large number of practices joining around the same time in Aurum and the data collection starting in stages.

fcd (minimum = 27 September 2017, maximum = 22 August 2018); migration date (minimum = 26 March 2014, maximum = 15 July 2018).

RESULTS

- A total of 40,196 adults in GOLD and 40,706 in Aurum were included in this study.
- The prevalence of a recorded diagnosis of diabetes any time before the migration was 9.2% in GOLD and 9.6% in Aurum. In Aurum, comparing prevalence of diabetes diagnoses within 1 year before and 1 year after migration, no differences were observed (Figure 2).
  - HbA1c data were available for 86.1% of patients with diabetes in GOLD and 83.5% in Aurum within 1 year before migration, and within 1 year after fcd these data were available for 84.9% of patients with diabetes in Aurum. The prevalence of diabetes control was similar in GOLD and Aurum within 1 year before migration but differed in Aurum within 1 year after fcd (Figure 3).
- Distribution of use of diabetes medications (Figure 4) and duration of these prescriptions (Figure 5) within 1 year before and after migration were very similar across both data sources.
  - The main differences in use of diabetes medications were observed for dipeptidyl peptidase-4 inhibitors (DPP-4i) (15.6% in GOLD within 1 year before migration, and 18.5% and 22.3% in Aurum within 1 year before and after migration, respectively) and for sodium-glucose cotransporter 2 inhibitors (SGLT2i) (5.8% in GOLD 1 year prior to migration, and 8.4% and 13.4% in Aurum within 1 year before and after migration, respectively).
  - Duration of treatment within 1 year prior to migration was less frequently available in GOLD compared with Aurum. Greater differences were observed in insulin prescriptions (3.6% in GOLD within 1 year before migration, and 23.8% and 61.1% in Aurum within 1 year before and after migration, respectively) and glucagon-like peptide-1 (GLP-1) analogues (16.1% in GOLD within 1 year prior to migration, and 43.1% and 90.1% in Aurum within 1 year before and after migration, respectively).

Figure 2. Prevalence of Diagnosis of Diabetes by Period in Each Data Source

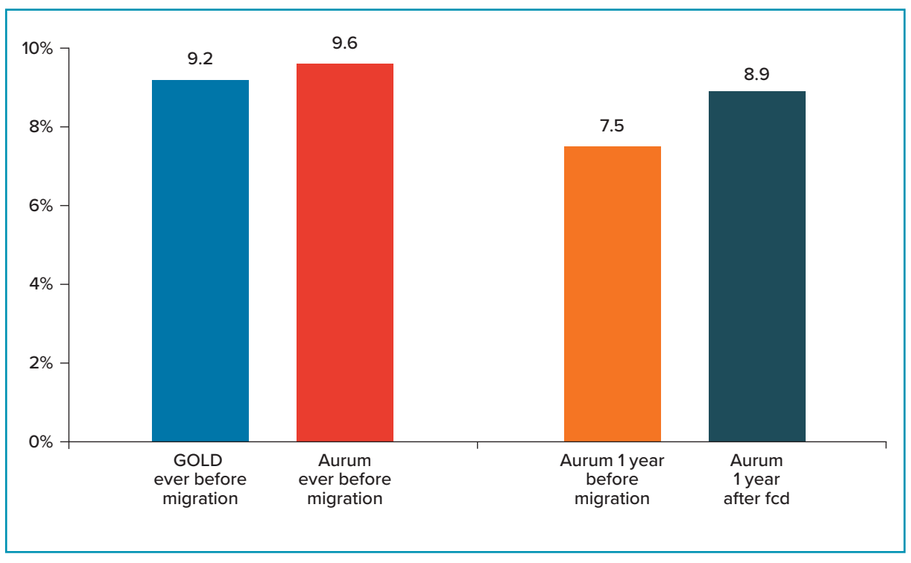


Figure 3. The Distribution of Diabetes Control by Period in Each Data Source

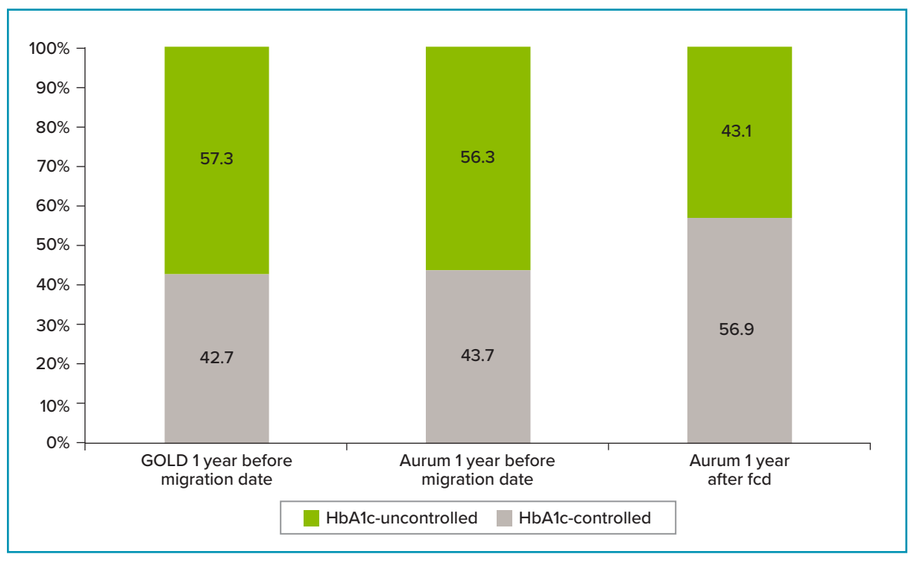


Figure 4. Diabetes Medication Prescriptions

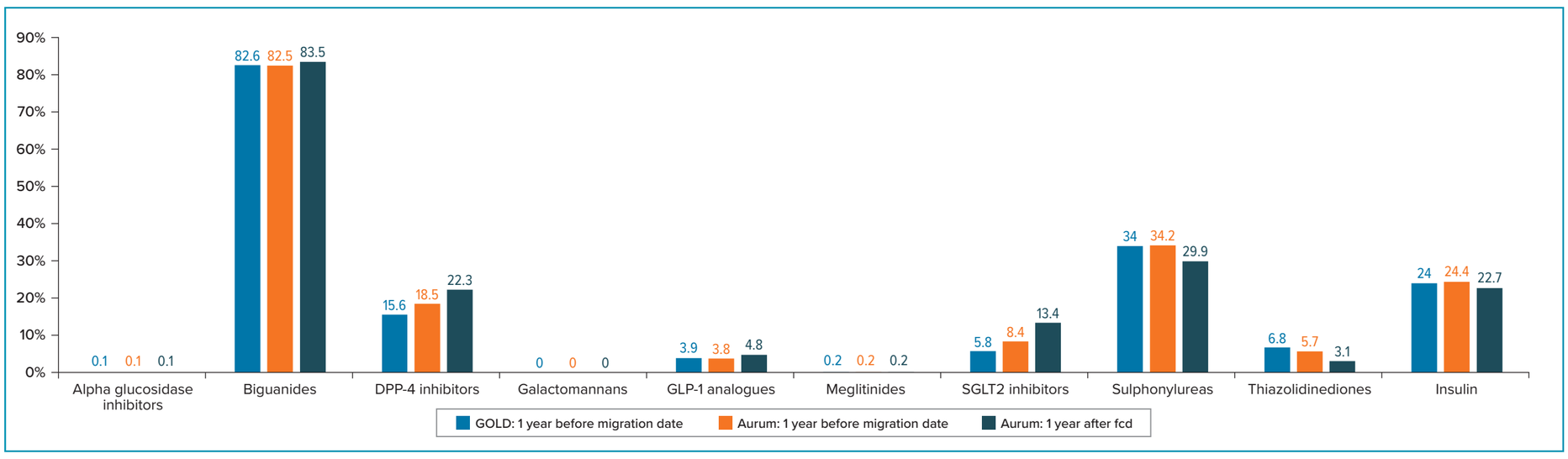
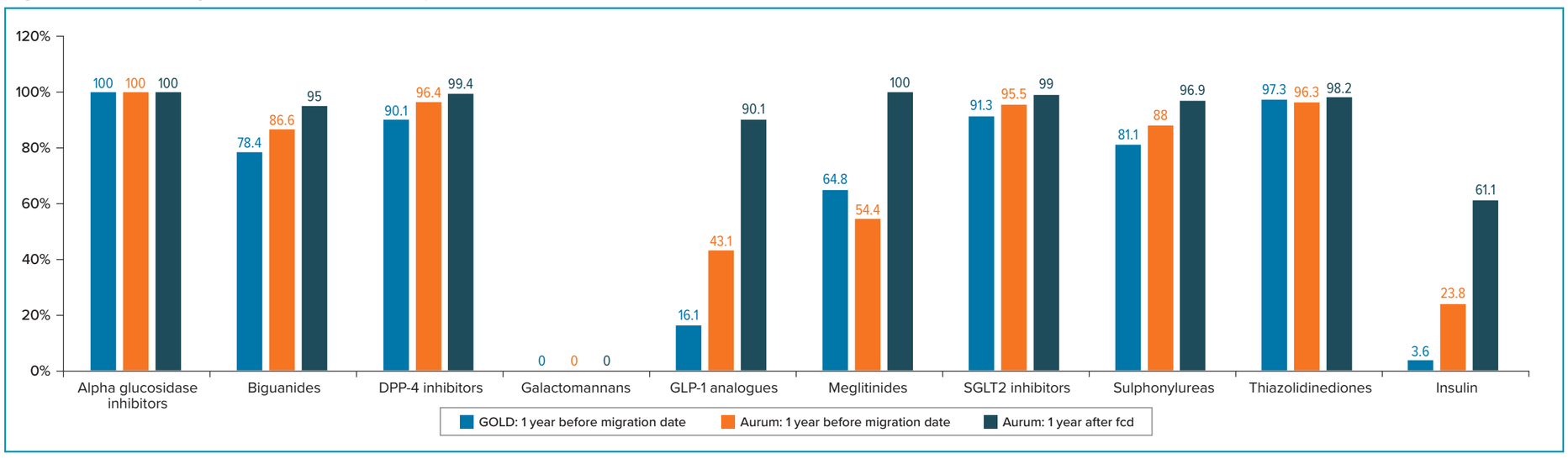


Figure 5. Availability of Duration of Prescriptions of Diabetes Medication



CONCLUSIONS

- Adaptation of CPRD algorithms from GOLD to Aurum showed that the distribution of diabetes-related variables in GOLD and Aurum were very similar and in line with population distribution in the United Kingdom.
- New recording of diabetes diagnoses was in line with data prior to migration.
- Differences in diabetic control results in Aurum after fcd require further investigation.
- Availability of data on duration of GLDs was more complete in Aurum than in GOLD.

REFERENCES

1. European Network of Centres for Pharmacoepidemiology and Pharmacovigilance (ENCePP). Aclidinium Bromide Post-Authorisation Safety Study to Evaluate the Risk of Cardiovascular Endpoints. EU PAS Register no. ENCEPP/SDPP/13616. Available at: http://www.encepp.eu/encepp/viewResource.htm?id=35358.
2. European Network of Centres for Pharmacoepidemiology and Pharmacovigilance (ENCePP). Post-Authorisation Safety Study in Patients With Type 2 Diabetes Mellitus to Assess the Risk of Acute Liver Injury, Acute Kidney Injury and Chronic Kidney Disease, Severe Complications of Urinary Tract Infection, Genital Infections, and Diabetic Ketoacidosis Among Patients Treated With Empagliflozin Compared to Patients Treated With DPP-4 Inhibitors. EU PAS Register no. ENCEPP/SDPP/13413. Available at: http://www.encepp.eu/encepp/viewResource.htm?id=35642.

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