Concomitant Usage of Contraindicated Medications in Patients with Atrial Fibrillation: A Comparison of Real-World Data Sources in the United States. (2017-2023)

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Objective: To understand and quantify the inherent biases in various healthcare claims datasets through the study of atrial fibrillation patients on dofetilide.

Background

Traditional RWE and HEOR studies are done on closed claims data due to its robustness and enrollment data. In recent years, open claims have become more popular for the larger sample size, and reduced lag time.

Hybrid claims seek to capture the most effective elements of each source, pulling together patients' closed and open claims data.

Methods

This retrospective cohort study utilized US claims data from Forian's data product, CHRONOS™, a nationally representative, integrated open and closed claims hybrid ecosystem, from 2015 to 2024. Adult patients with atrial fibrillation who were treated with dofetilide, and had at least one year of continuous enrollment, or open claims activity, were included.

The one year period following dofetilide initiation was analyzed for the prevalence of contraindicated concomitant medications.

All study variables were defined by NDC, CPT, HCPCS, and ICD-10-CM codes.

Results

Compared to the traditional closed and open sources, CHRONOS™ hybrid data reports the highest prevalence of contraindicated medication usage within one year of dofetilide (16%). The median time to the first medication was 0 days across all the data sources.

The difference in prevalence of the contraindicated medications was found to be significant when comparing open claims and each closed claims dataset ($p < 0.001$), as was hybrid claims compared to each Closed dataset ($p < 0.001$).

Conclusions

The significant difference in the analysis across each data source shows the necessity of selecting the correct data source for the study objective. Hybrid claims offer the most robust view into in the patient journey, highlighted by the significant increase in contraindicated concomitancy rates when compared to closed claims.

Future research will seek to quantify the differences across data sources in outcomes based studies such as HCRU or Cost Analyses.

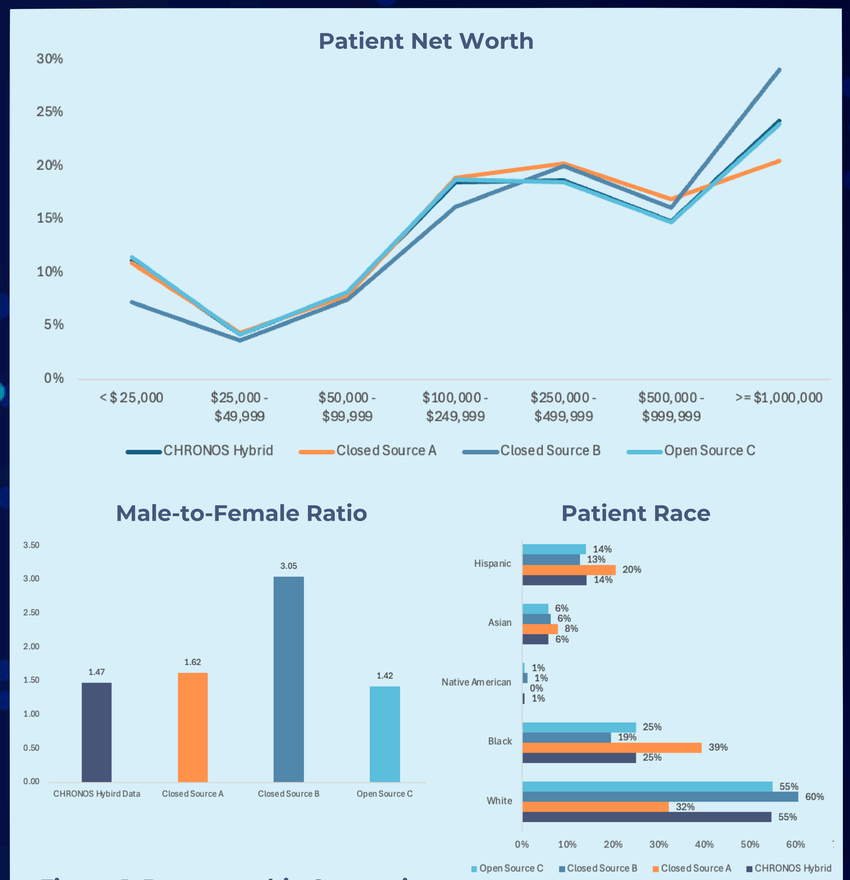
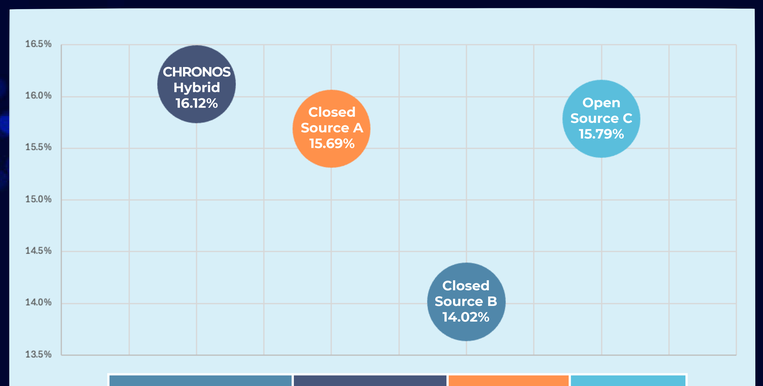


Figure 1. Demographic Comparison

Data Source	Episode	P25	Median	P75
CHRONOS Hybrid	Concomitant dofetilide + contraindicated hydrochlorothiazide	43	79	148
Closed Source A	Concomitant dofetilide + contraindicated hydrochlorothiazide	39	80	167
Closed Source B	Concomitant dofetilide + contraindicated hydrochlorothiazide	39	75	180.5
Open Source C	Concomitant dofetilide + contraindicated hydrochlorothiazide	39	75	139

Figure 2. Days Concomitantly on Hydrochlorothiazide



Compared to Closed Source B	CHRONOS Hybrid	Closed Source A	Open Source C
Pooled	0.16	0.16	0.16
std. err	0.00	0.01	0.00
Z	4.65	2.63	3.99
P	**3.38E-06**	**8.65E-03**	**6.62E-05**

Figure 3. Patients with Contraindicated Concomitant Medication

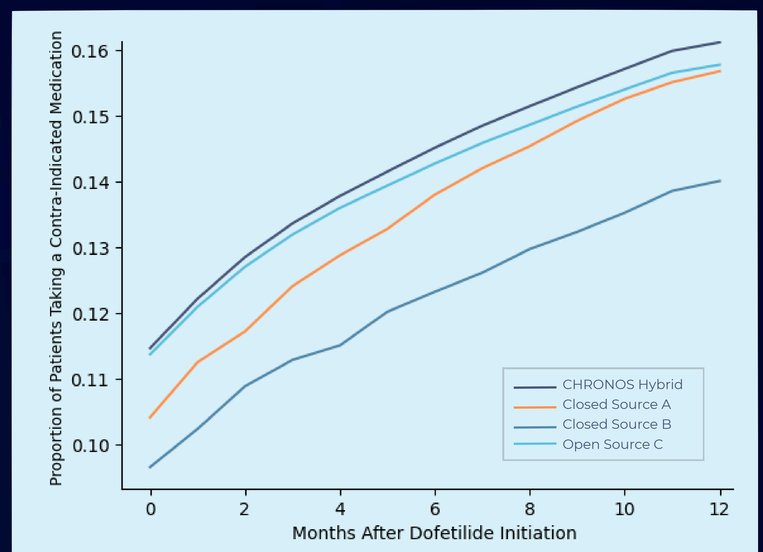


Figure 5. Months to First Contraindicated Medication