EPH29

Clinical Under-Recognition of Severe Hypertriglyceridemia Patients in Real World Practice: Insights from ICD Coding and Triglyceride Levels

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CONCLUSIONS

- The overlap between ICD-10 (International Classification of Diseases) codes related to hypertriglyceridemia (HTG; E78.1-3) and patients with triglycerides (TG) ≥880 mg/dL was low, suggesting that ICD-10 codes for HTG alone do not reliably reflect severe HTG (sHTG) patients
- Though the proportion of patients with TG ≥880 mg/dL is higher among those coded with E78.1 (pure hyperglyceridemia), and E78.3 (hyperchylo-micronemia) compared to E78.2 (mixed hyper-lipidemia), proportions remain low for all three classifications
- Patients with TG ≥880 mg/dL and not coded to E78.1-3 are assigned to other ICD-10 codes corresponding to routine assessments or chronic conditions
- Low identification of sHTG patients and the absence of a dedicated coding identifier suggest that sHTG may be potentially under recognised or misdiagnosed in routine clinical practice, highlighting the need for a specific and consistent identification framework

INTRODUCTION

- sHTG (TG ≥500 mg/dL [5.7 mmol/L]) increases the risk of acute pancreatitis (AP), particularly at levels ≥880 mg/dL (10 mmol/L) [1-3]
- sHTG is the third most commonly identified cause of AP[4]
- Early detection of sHTG can prevent AP and guide treatment
- However, identifying sHTG in existing real-world data sources remains challenging due to lack of specific ICD-10-coding
- Large electronic health record (EHR) networks allow assessment of the reliability of currently used ICD-10 codes for HTG

OBJECTIVES

To assess if currently used ICD-10 codes can accurately identify sHTG, by evaluating their overlap with TG laboratory values

METHODS

Data source

- TriNetX US Dataworks between year 2021 and 2025

Cohort (observation period: 2021–2025)

- ICD-10 diagnosis code E78.1 (pure hyperglyceridemia), E78.2 (mixed hyperlipidemia), or E78.3 (hyperchylo-micronemia, **Table 1**) and/or TG test at any time during the observation period
- Patients identified by ICD-10 diagnosis codes and/or TG test results were compared
- TG ≥150 mg/dL was used to define elevated levels (fasting status is unknown from EHR)

Table 1: ICD-10 codes currently used for HTG

Code	Description	Typical clinical meaning
E78.1	Pure hyperglyceridemia	Elevated TG without other lipid abnormalities — often linked to metabolic syndrome or familial hypertriglyceridemia
E78.2	Mixed hyperlipidemia	Both cholesterol and TG elevated — common in combined dyslipidemia
E78.3	Hyper-chylomicronemia	Very high TG due to chylomicron accumulation — can indicate FCS or sHTG

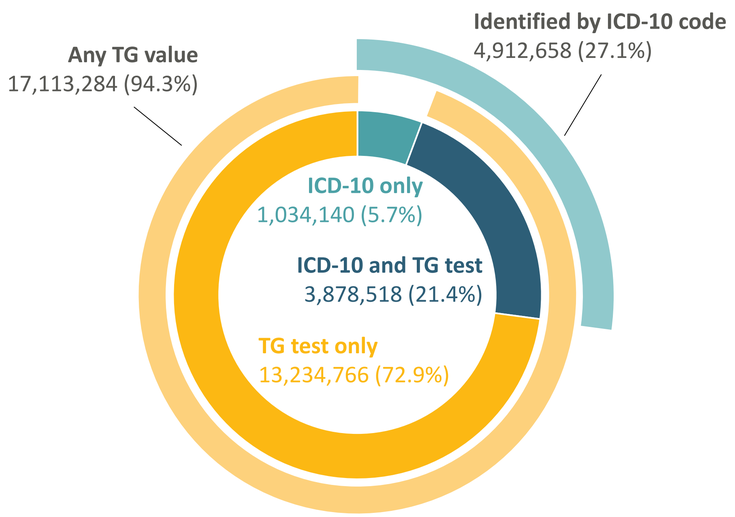
FCS, familial chylomicronemia syndrome; ICD, International Classification of Diseases; sHTG, severe hypertriglyceridemia; TG, triglycerides.

RESULTS

Patient population

- This analysis included a total of 18,147,424 patients, with 4,912,658 (27.1%) patients identified by an ICD-10 code and 17,113,284 (94.3%) patients with any TG value
- Of these, 3,878,518 (21.4%) patients had both; 1,034,140 (5.7%) patients had only an ICD-10 code; 13,234,766 (72.9%) patients only had a TG value (**Figure 1**)

Figure 1: TriNetX population including 18,147,424 patients, selected either by ICD-10 code and/or TG testing*



ICD, International Classification of Diseases; TG, triglycerides.

Incident patients diagnosed with ICD-10 E78.1-3

- Most of the patients (87.3%) were coded E78.2, while 12.5% and 0.2% were coded E78.1 and E78.3, respectively (**Table 2**)
- Of all patients coded E78.1, E78.2 or E78.3 when following the first diagnosis (n=3,684,786), 2,868,573 (77.9%) patients also received an additional TG test (**Table 2**)

Table 2: Patients by ICD-10 codes and with additional TG test

	Patients with each of the ICD-10, n (%*)	Patients with additional TG test, n (%†)
E78.1	460,553 (12.5%)	386,034 (13.5%)
E78.2	3,216,398 (87.3%)	2,476,315 (86.3%)
E78.3	7,835 (0.2%)	6,224 (0.2%)
Total	**3,684,786**	**2,868,573**

* % of all patients following the first of diagnosis codes E78.1-3; † % of patients with TG test following the first of diagnosis codes E78.1-3.
ICD, International Classification of Diseases; TG, triglycerides.

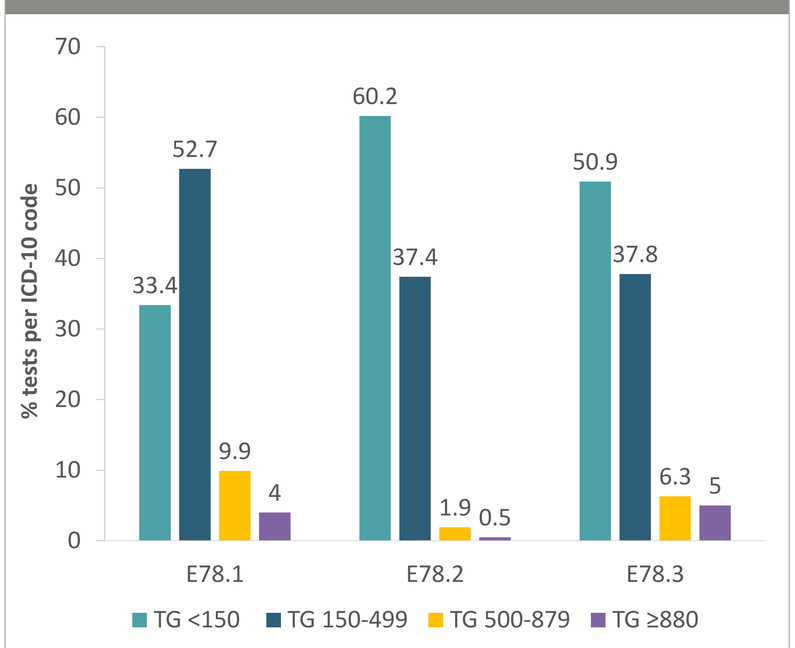
- Similarly, most patients with additional TG measurement received ICD-10 code E78.2 (**Table 2**)

Table 3: Number of patients with TG tests* by ICD-10 code and TG value

	Total patients with a test	TG <150	TG 150-499	TG 500-879	TG ≥880
E78.1	602,914	201,142	317,462	59,929	24,381
E78.2	3,280,035	1,974,604	1,226,396	61,955	17,080
E78.3	9,157	4,665	3,458	574	460
Total	**3,892,106**	**2,180,411**	**1,547,316**	**122,458**	**41,921**

For the comparison incident patients following first diagnosis were used.
* Patients can have multiple testing.
ICD, International Classification of Diseases; TG, triglycerides.

Figure 2: Patients with TG levels by ICD-10 groups



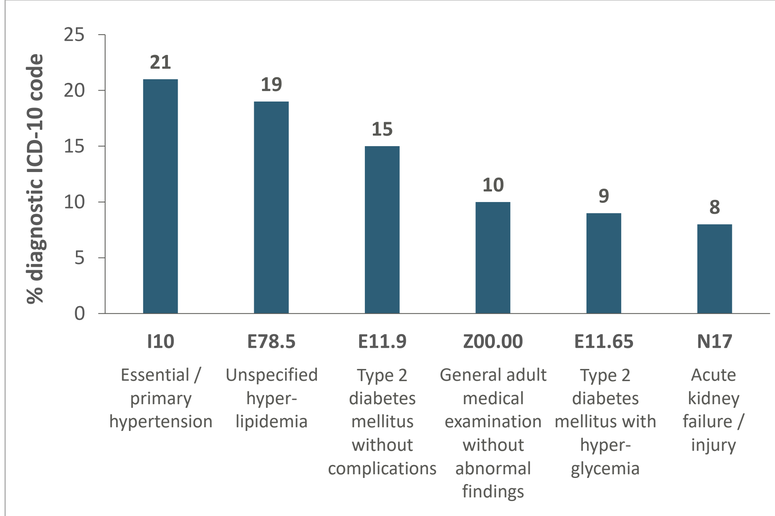
For the comparison incident patients following first diagnosis were used.
ICD, International Classification of Diseases; TG, triglycerides.

- For the patients with a diagnosis code a total of 3,892,106 had a TG tests, of which 41,921 patient had a test with a TG levels ≥880 mg/dL (**Table 3 and Figure 2**)
- The proportion of tests with TG ≥880 mg/dL within each diagnosis code, was 4%, 0.5% and 5% for E78.1, E78.2 or E78.3, respectively (**Figure 2**)

Other ICD-10 codes used among patients with TG ≥880 mg/dL

- In patients with a TG value ≥880 mg/dL who did not have an assigned HTG-related ICD-10 code, most common diagnosis codes recorded within 7 days after the first TG ≥880 mg/dL measurement reflected routine assessments or chronic conditions: I10 essential hypertension (21%), E78.5 unspecified hyperlipidemia (19%), E11.9 type 2 diabetes without complications (15%) and Z00.00 general examination without abnormal findings (10%) (**Figure 3**)

Figure 3: Other ICD-10 codes used to classify patients with sHTG (≥880 mg/dL)



ICD, International Classification of Diseases; sHTG, severe hypertriglyceridemia.

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DISCLOSURES

AF, CL, CR, NK, SBW: Employee and shareholder: Sobi; **LS:** Employee of Sobi, Inc.

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