

Severe Hypertriglyceridemia in Multifactorial Chylomicronemia Syndrome: Therapeutic Challenges in a Young Patient with Type 1 Diabetes

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Introduction

Severe hypertriglyceridemia is a major risk factor for acute pancreatitis and cardiovascular diseases. It is typically seen in Familial Chylomicronemia Syndrome (FCS), caused by specific genetic mutations, but can also present in Multifactorial Chylomicronemia Syndrome (MCS), where these mutations are absent.

Case Presentation

We report the case of a 24-year-old woman referred from the emergency department due to extremely elevated triglycerides (3200 mg/dL) despite ongoing lipid-lowering therapy. The patient has a history of type 1 diabetes and a previous pancreatitis episode. Genetic testing for FCS mutations was negative, supporting a diagnosis of MCS. Standard therapeutic approaches led only to partial triglyceride reduction, highlighting the difficulty in managing such patients [1].

Conclusions

Treatment of severe hypertriglyceridemia in MCS is complex, particularly when compounded by type 1 diabetes, which may worsen lipid metabolism and increase the risk of pancreatitis. The combined presence of severe hypertriglyceridemia and diabetes also poses a significant cardiovascular risk. New therapies, such as Volanesorsen (Waylivra), show promise and extending their availability could improve outcomes in this difficult-to-treat population. Early recognition and a multidisciplinary approach remain crucial [2, 3].

Timeline (Figure 1)

- 2016: Diagnosi di diabete mellito tipo 1. Inizio terapia con fenofibrato 145 mg.
- 2017: Prima pancreatite. Terapia: fenofibrato 145 mg + omega-3 due volte al giorno.
- 2019: Accesso in PS. Terapia: fenofibrato 145 mg + omega-3 due volte al giorno + ezetimibe/simvastatina 10/10 mg.
- 2023: Seconda pancreatite acuta. Terapia: omega-3 tre volte al giorno + fenofibrato 145 mg.

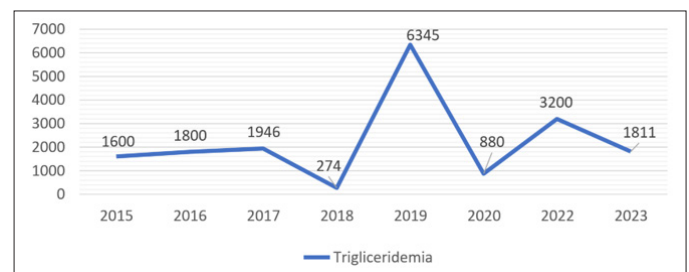


Figure 1

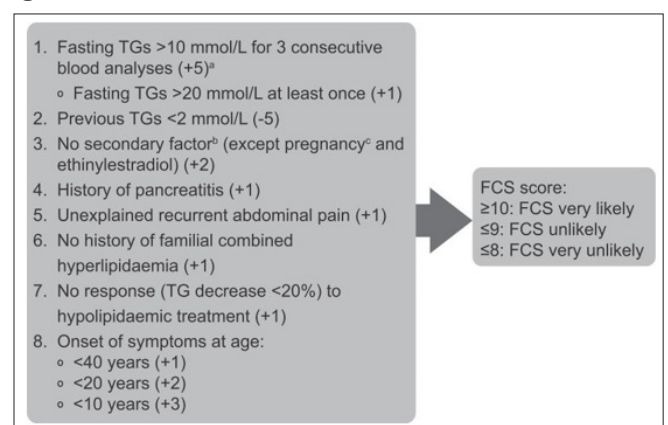


Figure 2: A Practical Diagnostic Scoring System for FCS.

References

1. Hegele RA, Ginsberg HN, Chapman MJ, Nordestgaard BG, Kuivenhoven JA, et al. (2014) European Atherosclerosis Society Consensus Panel. The polygenic nature of hypertriglyceridaemia: implications for definition, diagnosis, and management. *Lancet Diabetes Endocrinol* 2: 655-666.
2. Moulin P, Robert Dufour, Maurizio Averna, Marcello Arca, Angelo B Cefalù, et al. (2018) Identification and diagnosis of patients with familial chylomicronaemia syndrome (FCS): Expert panel recommendations and proposal of an "FCS

- score". *Atherosclerosis* 275: 265-272.
3. Witztum JL, Daniel Gaudet, Steven D Freedman, Veronica J Alexander, Andres Digenio, et al. (2019) Volanesorsen and

Triglyceride Levels in Familial Chylomicronemia Syndrome. *N Engl J Med* 381: 531-542.

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