Management of Severe Gestational Hypertriglyceridemia

Anne Borja, M.D., Meena Khandelwal, M.D., Farah Morgan, M.D.

Cooper Medical School of Rowan University, Cooper University Hospital

Camden, New Jersey

Introduction

Severe gestational hypertriglyceridemia is a dangerous and life threatening illness. Management can be difficult due to the limited data on safety of medical therapy during pregnancy. We present a case of severe gestational hypertriglyceridemia

Clinical Presentation

A 29 year old woman, G4P2012 at 23w3d, with a past medical history of gestational diabetes, nontoxic thyroid nodule, and hypertriglyceridemia presented to the emergency room for abdominal pain and nausea. Triglyceride level on admission was 3640 mg/dL (Figure 1), . Liver function tests were within normal limits. She was started on an insulin drip, as well omega-3 fatty acids 4g daily. However, the triglyceride level remained elevated despite 72 hours on the insulin drip and it was subsequently discontinued. Plasmapheresis was discussed but deferred given no evidence of pancreatitis. Gemfibrozil 600mg twice a day was added to the omega-3 fatty acids which were titrated up to 2g three times a day. On her day of discharge, her triglyceride level was 2200 mg/dL and abdominal pain had resolved. She was maintained on gemfibrozil and Omega-3 fatty acids, with plans to increase them by 1g per week to reach a goal of 10g per day with a goal triglyceride level <1000mg/dL. She was also seen by the nutritionist for counseling of a low fat diet and was followed very closely as an outpatient. She remained asymptomatic and delivered a healthy baby boy weighing 3446 grams at 36 weeks 4 days, with no complications. She continues follow up with endocrinology with triglycerides 6 months later being 1618 mg/dL.

Discussion

Severe gestational hypertriglyceridemia is defined as a plasma triglyceride level >1,000 mg/dL. Plasma triglyceride levels normally increase approximately 2.5 fold over pre-pregnancy levels, but for most women with normal baseline triglyceride levels and no compromise in metabolic pathways, such increases are well tolerated [1].

Hormonal Changes in Pregnancy[1]	Biochemical Response[1]
Increase in estrogen in second and third trimester	Increased triglyceride-rich lipoprotein secretion, increased lipogenesis, suppressed hepatic lipase activity, with enrichment of triglyceride enrichment of LDL and HDL
Increase in human placental lactogen in second and third trimester	Relative peripheral insulin resistance, which leads to suppressed lipoprotein lipase activity, enhanced cholesterol ester transfer protein activity, leading to enhanced free fatty acid flux to liver

Table 1

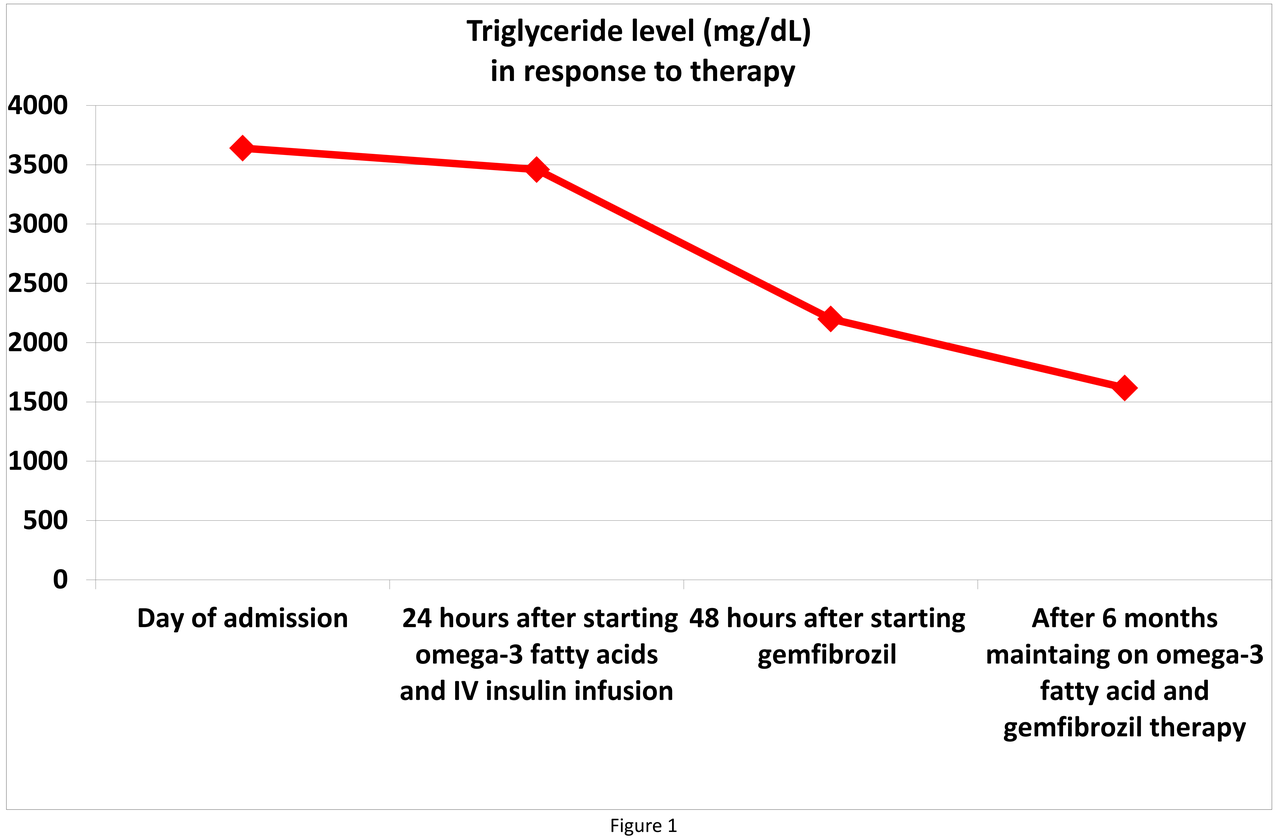

Figure 1

Discussion continued

This is in in part due to hormone mediated effects of estrogen and human placental lactogen in the second and third trimesters (Table 1). Therefore, in patients with a history of uncontrolled hypertriglyceridemia or risk factors that can exacerbate hypertriglyceridemia such as diabetes mellitus or excessive alcohol consumption, close monitoring and early initiation of treatment are necessary to prevent adverse outcomes [2]. These patients should be managed by a multidisciplinary team including obstetricians, nutritionists, and endocrinologists. Approach to treatment first begins with a low fat diet and 3-4grams/day of omega-3 acid ethyl esters. If refractory, intravenous insulin should be started. If the patient has pancreatitis, or other therapies fail, then plasmaphereses should be considered [3]. Gemfibrozil 600mg twice a day, can be considered after the second trimester. Fibrates are listed as a category C drug, therefore should only be used if triglyceride levels remain elevated despite compliance with diet and an omega-3 acid ethyl ester.

Conclusion

We present a patient with severe gestational hypertriglyceridemia with a known history of pancreatitis. Due to the rarity of this condition, there is limited data on the safety of treatments for hypertriglyceridemia in pregnant women. This case demonstrates the use of gemfibrozil is appropriate when the hypertriglyceridemia threatens the health of the mother and baby. Further studies are needed to establish efficacy and safety of the use of these treatments in pregnant patients

References

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Corresponding Author: borja-anne@cooperhealth.edu