Pregnancy Complicated by Hypertriglyceridemia and Impaired Glucose Tolerance: A Case Report and Discussion of the Literature

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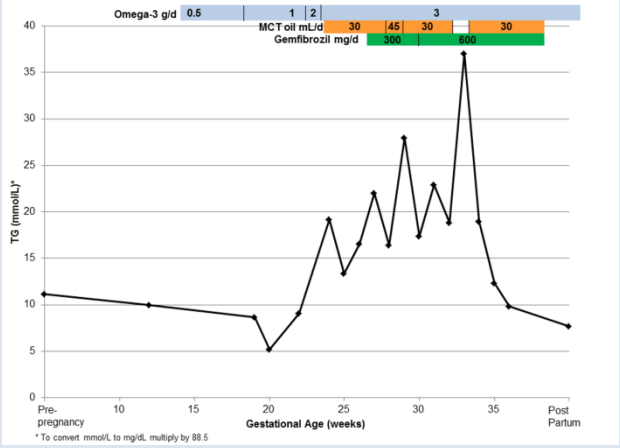
Introduction

Hypertriglyceridemia (HTG) in pregnancy is defined as plasma triglycerides (TG) >4.2 mmol/L.[1] If TG levels are within normal limits before pregnancy and metabolism is normal, typical increases are usually well tolerated. Major potential complications include acute pancreatitis, hyperviscosity syndrome, and preeclampsia.[1] Management options include: diet modification, nutritional supplements, followed by pharmacotherapy, heparin, insulin infusion (if hyperglycemic), and plasma exchange.[1]

The Case

ID: 35 year old G3P0 Filipino woman with impaired glucose tolerance and HTG.
PMHx: Impaired glucose tolerance, PCOS, Acute pancreatitis 3 years prior, HTG (44.7 mmol/L)
Initial Visit: 55.9 kg, TG 9.9 mmol/L, A1c 6.1%; received dietary advise to increase fibre, decrease simple sugar intake, start omega-3; metformin 1 g BID; insulin started
20 weeks GA: Admitted for cerclage for short cervix
24 weeks GA: Weight loss identified
34 weeks GA: Admitted for HTG management
37+3 weeks GA: Vaginal delivery of small for gestational age (SGA) infant

Figure 1: Triglycerides and Interventions by Gestational Age



Discussion

- Dietary management of HTG:
  - ↓ trans fat
  - ↓ total fat – current practice inconsistent with practice outside of pregnancy, base on old case reports[2]
  - High fibre
  - Carbohydrate ≥ 175 g/day[3]
- Weight gain below Institute of Medicine cut-off associated with SGA
- Omega-3 (eicosapentaenoic acid and dochexaenoic acid) 3-4 g/day[1] and Medium chain TG (MCT) oil
  - Prevent deficiencies in mother and fetus with low fat diet[1]
  - Provide calories to achieve weight gain
  - Manage TG
    - Omega-3 ↓ by 25-30% in dose dependent manner[4]
    - MCT oil is transported to liver through portal circulation, bypassing chylomicrons[1]
- Niacin
  - Case report of pancreatitis and preterm delivery[1]
- Fibrates
  - Reduce TG by 30-50%[4]
  - No human reports of teratogenicity after first trimestser[1]

Conclusions

- Management of HTG in pregnancy requires careful attention to diet and selective use of appropriate supplements and fibrates
- Updating dietary recommendations for HTG in pregnancy to limit only selected types of fat, as in the non-pregnant population, may help prevent SGA births

References

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