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. 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. Management options include: diet modification, nutritional supplements, followed by pharmacotherapy, heparin, insulin infusion (if hyperglycemic), and plasma exchange.

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

Discussi0n

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

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