Chapter 6: Triglyceride-lowering treatment in children

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6.1: In children with CKD (including those treated with chronic dialysis or kidney transplantation) and hypertriglyceridemia, we suggest that therapeutic lifestyle changes be advised. (2D)

RATIONALE
Non-pharmacological treatment of high triglycerides
TLC includes dietary modification, weight reduction, increased physical activity, reducing alcohol intake, and treatment of hyperglycemia (if present). As for adults, the evidence that TLC will reduce serum TG levels and/or improve clinical outcomes is weak. Nonetheless, in the opinion of the Work Group, it is reasonable to advise children with high fasting levels of serum TGs (≥5.65 mmol/l [≥500 mg/dl]) to adopt TLC based on similar considerations as mentioned in Guideline 5.1. Dietary changes that may reduce serum TGs include a very low-fat diet (<15% total calories), medium-chain TGs, and fish oils to replace some long-chain TGs. Dietary modification should be used judiciously, if at all, in children who are malnourished. Input from a social worker may be helpful if there are concerns that the patient or his/her parents are unable to safely implement TLC.

Pharmacological treatment of high triglycerides: effects on risk of pancreatitis
Although previous guidelines have suggested the use of fibric acid derivatives for preventing pancreatitis from severe hypertriglyceridemia, the evidence supporting the safety and efficacy of this approach is extremely weak – especially in children with CKD. Therefore, the Work Group no longer recommends this approach.

Evidence that very high TGs can cause pancreatitis in children comes from case reports and small series of patients with familial dyslipidemias. The safety and efficacy of lowering TGs with fibrates and niacin have not been established in adolescents; studies have been of extremely short duration and with very small sample sizes. There have been 4 trials of fish oil completed in children with glomerular causes of CKD and one trial among children on dialysis; fish oil appears to lower serum TGs after as little as 12 weeks of therapy, but the longer-term benefits, harms, and tolerability of such treatment is unclear.

Therefore, pharmacological treatment of hypertriglyceridemia is not recommended in children with CKD. This is a weak recommendation that reflects the lack of evidence on clinical benefit and safety. Treatment could be considered in children with very severely increased hypertriglyceridemia (≥11.3 mmol/l [≥1000 mg/dl]); such children should be referred to a pediatric lipid specialist for management and to rule out familial hypertriglyceridemia or rare, inherited disorders such as lipoprotein lipase deficiency or apolipoprotein C-II deficiency.

Suggested Audit Criteria
- Audit the number of pediatric CKD patients treated with TLC, diet, and weight loss for lowering TGs.
- Audit the number of pediatric CKD patients treated with pharmacological TG-lowering therapy.
- Record the number of pediatric CKD patients with drug intolerance and/or non-compliance.

KEY POINTS
- TLC should be recommended to children with CKD and hypertriglyceridemia.
- Fibric acid derivatives are not recommended to prevent pancreatitis or reduce cardiovascular risk in children with CKD and hypertriglyceridemia.

RESEARCH RECOMMENDATIONS
Future studies should be conducted to:
- Determine prevalence of hypertriglyceridemia in pediatric kidney transplant recipients.
- Determine the effect of diet and weight loss in lowering TG among pediatric CKD patients.

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