South African dyslipidaemia guidelines and consensus statement

Case study 1: Lipid management in a patient with type 2 diabetes mellitus

**Patient:** Mr FG, 56 years old
- Has had type 2 diabetes for eight years
- With poor glycaemic control, his HbA1c is 9.2%
- Weight: 105kg
- BMI: 32
- Waist circumference: 102cm
- Liver ultrasound shows fatty liver changes

**Medication**
- Presently on oral antidiabetic agents plus basal insulin, metformin 1g bd and gliclazide MR 60mg twice daily, basal insulin (18u) is administered at night. Average glucose levels 8-12mmol/l

**On examination**
- Lipid profile: TChol – 5.8mmol/l
- LDL-cholesterol – 3.8mmol/l
- HDL-cholesterol – 0.8mmol/l
- TG fasting – 2.4mmol/l
- Complications include erectile dysfunction, poor effort tolerance, renal dysfunction 2+ microalbuminuria, eGFR 52ml/min/1.73m²
- HT Rx enalapril, HCTZ combo (20/12.5mg), average BP 152/86mmHg.

1. Which of the following risk factors will you address first?
   - A. Blood pressure
   - B. Cholesterol
   - C. Glucose
   - D. Immediately adjust for A, B and C

**Expert comment**
In patients with type 2 diabetes, addressing all major risk factors is essential. The STENO-2 study in type 2 diabetes was the first to show that addressing the multiple risk factors that cause accelerated atherosclerosis would improve outcome in respect of both micro- and macrovascular complications.¹

¹ STENO-2 study results.
Importantly, the latest South African lipid guidelines recommend that in this very high-risk patient group, the target is to lower LDL-cholesterol by 50%. One might have thought the patient’s LDL-cholesterol is not ‘too bad’ (3.8mmol/l) but diabetic patients frequently have lower LDL-cholesterol than expected. At this level, the most recent evidence supports using high-intensity statins at a suitable dosage. Numerous studies that included patients with diabetes confirmed that elevated lipid levels, specifically LDL-cholesterol, were associated with an increased risk of macrovascular complications, especially ischaemic heart disease.

The attending clinician introduced the following therapy adjustment:
• Changed metformin for a DPP-4 inhibitor/metformin combination 50mg/1g bd
• Basal insulin increased to 22 units, gliclazide MR continued
• Atorvastatin commenced at 20mg
• Antihypertensive medication changed to perindopril/amlodipine combination 5/5mg, added indapamide SR 1.5mg

At his next scheduled visit – four weeks later:
• Patient complained of chest pain (?), his breathlessness is getting worse
• His LDL-cholesterol had improved to 2.9mmol/l, but HDL-cholesterol still 0.9mmol/l
• Blood pressure 140/85mmHg

The attending clinician referred him to a cardiologist. The cardiologist was unable to perform an adequate stress ECG and so a CT coronary angiogram was done. Triple-vessel disease was diagnosed, requiring CABG.

2. What should the lipid target be now before the surgical intervention?

| A. 2.5mmol/l | B. 1.8mmol/l |

3. How should the treatment be escalated post-surgery?

| A. Add ezetimibe | B. Increase atorvastatin |
| C. Add micronised fenofibrate | D. A and B |
| E. All of the above |

Expert comment
Fenofibrate is indicated by the low HDL and high TG levels, if no other cause was found. Fenofibrate can be added if retinopathy is present as it has been shown to confer an added benefit (FIELD, ACCORD trials).2-6
Case study 2: Young male with familial hypercholesterolaemia

**Patient:** MS, 16-year-old male, brought in by his mother
- Not diabetic, no hypertension
- He exercises regularly, especially cycling to school and back (10km)
- Strong family history of early cardiac disease with his father suffering a sudden death at age 42
- Two uncles on his father’s side of the family died of heart disease, aged 38 and 52, but no details as to what these events were
- He has no cardiac-related symptoms, but he is concerned about his family history, especially his father’s death

**On examination**
- Weight 72kg
- BMI 24
- Normal BP at 122/64mmHg
- Pulse 60bpm sinus rhythm
- No murmurs audible
- Thickened tendons noted on Achilles, no xanthoma present
- No arcus cornealis
- Cholesterol testing shows an LDL-cholesterol of 5mmol/l; Lp(a) is elevated

On the suspicion of familial hypercholesterolaemia, DNA testing is performed by a specialist laboratory but no mutation is detected.

4. **What LDL-cholesterol target do you aim for?**

| A. 3.5mmol/l | B. <3.5mmol/l |

5. **Whom do you refer to a specialised centre?**

| A. Any young patient with unexplained hyperlipidaemia, especially with a strong family history |
| B. Any patient with LDL-cholesterol above 3.5mmol/l |
| C. Any patient between ages 18 and 80 years with diabetes |
| D. Any young patient complaining of chest discomfort |
References

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