Royal United Hospitals Bath
NHS Foundation Trust

Information for Clinicians

Department of Clinical Biochemistry

Assessment and Management of Lipids in Primary Care

Amendment History

Issue	Status	Date	Reason for Change	Authorised
1.0	Published	April 2023	First Issue	AMS Lead
2.0	Published	February 2022	Updated Version	Clinical Director of Pathology
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Lipid requests

In most people Cholesterol, HDL and Non-HDL measurement is used for screening and monitoring. Non-HDL cholesterol is used as an estimation of the total number of atherogenic lipoprotein particles; it is used to risk stratify patients and as a treatment target.

- Primary prevention target aims for a 40% reduction in Non-HDL.
- Secondary prevention targets aim for Non-HDL less than 2.5mmol/L

When are full lipid profiles required?

NICE CG181 states that a full lipid profile should be requested at least once before starting therapy. This should include Cholesterol, HDL, Non-HDL, LDL-c and Triglycerides. It does not need to be fasted.

Ensure a full lipid profile is requested:

- At least once before starting treatment
- In known hypertriglyceridaemia
- With mixed hyperlipidaemia of genetic aetiology
- When low HDL noted
- With risk factors for high triglycerides such as poorly controlled diabetes, alcohol excess or medications
- If you require LDL for secondary cardiovascular disease prevention targets

Familial Hypercholesterolaemia

- Familial Hypercholesterolaemia (FH) is common with an estimated prevalence of 1 in 250.
- This condition should be considered and patients referred if they have:
  - total cholesterol (TC) >7.5 mmol/L or LDL-cholesterol >4.9 mmol/L.
  - **AND** a family history of premature coronary heart disease in a 1st degree relative (defined as <60 years old) or a 2nd degree relative (defined as <50 years old).
- We would also recommend referral in patients with a TC >9.0 mmol/L or a non-HDL cholesterol >7.5 mmol/L even in the absence of a family history of premature coronary heart disease.
- The lipid clinic will decide on the likelihood of FH and if suspected arrange appropriate genetic testing to confirm/exclude this diagnosis. If confirmed appropriate family cascade testing can be initiated by the clinic.
- In patients in whom Familial Hypercholesterolaemia (FH) is suspected do not use QRISK to decide on treatment, this will underestimate the true level of risk. It is in most instances reasonable to wait for patient to be seen in clinic before starting treatment.
- If a patient is started on treatment prior to being seen in clinic, please ensure that at least one full lipid profile has been requested beforehand.
- In general, the target for treatment is to lower the LDL by at least 50%

Mixed dyslipidaemias (raised cholesterol and raised triglycerides)

- Mixed dyslipidaemias are common. These patients have a total cholesterol >5.0mmol/L and raised triglycerides. This type of dyslipidaemia, is often observed in patients who are obese/overweight, are insulin resistant/have glucose intolerance or who consume alcohol in excess. In many instances this type of dyslipidaemia is very amenable to lifestyle intervention.

- However, advice should be sought if a patient with a mixed dyslipidaemia has a personal or family history of premature cardiovascular disease. These patients may have Familial Combined Hyperlipidaemia (FCH), which is an autosomal dominant inherited condition associated with an increased risk of cardiovascular disease.

- QRISK should also **NOT** be used to assess CV risk in a patient with suspected FCH

Hypertriglyceridaemia

- If triglycerides are >20 mmol/L consider urgent discussion with a lipid consultant. These patients may require immediate initiation of a Fibrate and urgent referral to secondary care. There is a significant risk of pancreatitis.
- If the triglyceride concentration is between 10-20 mmol/L repeat a full lipid profile (after an interval of 5 days but within 2 weeks). Please refer to the lipid clinic if triglycerides are >10 mmol/L on more than one occasion.
- In all cases of hypertriglyceridaemia consider alcohol, obesity, diabetes, diet and medication as common possible causes.

Summary of lipid management for Primary and Secondary Prevention

- All patients with raised cholesterol should be encouraged to eat a diet high in fruit, vegetables & wholegrains and low in saturated fat (saturated fat increases total and LDL cholesterol).
- Those with diabetes should optimise their control and overall calorie consumption.
- Encourage physical activity: 150 mins moderate aerobic activity a week.
- See https://www.nhs.uk/live-well/

A general outline for the approach to managing patients is shown in the flow chart below, this is a national pathway which can be found at:
http://www.bswformulary.nhs.uk/chaptersSubDetails.asp?FormularySectionID=2&SubSectionRef=02.12&SubSectionID=A100&drugmatch=5759#5759

- A statin intolerant pathway can be found on the same link

Liver Function

- Do not exclude statin treatment for people whose baseline ALT or AST levels are raised but are <3 x the upper limit of normal (ULN)
- Monitor liver function at 3 and 12 months after starting statin only
- Stop statin if ALT >3 x ULN

Creatine Kinase

- Only measure a baseline CK if the patient has myalgia. If CK levels are more than 5 x upper limit of normal do not start statin treatment, investigate and refer as necessary
- Do not routinely measure CK in treated asymptomatic patients. If it is necessary to measure CK and levels are raised but <5 x the upper limit of normal, either stop or reduce to a lower dose of statin once symptoms have resolved
- If CK levels are >5 x upper limit of normal, then stop statin immediately and refer to BNF

Referral to Lipid Clinic

- Common secondary causes of dyslipidaemia (such as excess alcohol, uncontrolled diabetes, hypothyroidism, liver disease and nephrotic syndrome) should be excluded before referral.
- In general, the lipid clinic manages genetic causes of lipid abnormalities and primary or secondary prevention is managed in the community. A referral should only be made if considering a genetic condition or there is a specific issue that requires specialist input (see below). A referral is only indicated if a patient's dyslipidaemia persists after treatment of secondary causes and 3 months targeted management of adverse lifestyle/metabolic features.
- On the referral we would ask that the following tests have been ordered: HbA1c, TFT, U&E, LFT, and urine albumin creatinine ratio.
- The referral should include recent lipid profile, a full list of current medications, BMI, cardiovascular risk factors and family history.
- Any letter for advice or referral should be sent through the choose and book service eRS system

Please refer the following groups of patients:

- Suspected Familial Hypercholesterolemia (FH)
- Severe hypertriglyceridemia (1x triglycerides >20 mmol/L, 2x >10 mmol/L if no other cause evident)
- Some groups of patients with lower levels triglycerides than above benefit from being seen if they require behaviour modification.
- Severe hypercholesterolemia (TC >9 or non-HDL-C >7.5 mmol/L)
- Patients who may be suitable for injectable Alirocumab or Evolocumab therapies in accordance with NICE Guidance (TAs 393 and 394)
    - FH without CVD but LDL-C persistently above 5 mmol/L
    - FH with CVD and LDL-C persistently above 3.5 mmol/L
    - Non-FH but *high or **very high risk of CVD with LDL-C persistently above 4 or 3.5 mmol/L respectively
      (*High risk of CVD = disease in one vascular territory)
      (**Very high risk of CVD = disease in two vascular territories or progressive disease despite lipid lowering treatment)

The lipid clinic does not administer Inclisiran as this and secondary disease prevention is positioned in primary care in the National lipid pathway.

Pregnancy

Lipid-lowering medication is not recommended for 3 months prior to conception, during pregnancy, nor during breastfeeding.