Lipid Lowering Guideline

Reducing cardiovascular risk (refer to NICE guideline CG181 on lipid modification for more information)

Wirral Clinical Commissioning Group

Wirral University Teaching Hospital NHS Foundation Trust

Primary Prevention

- Before offering statin treatment, optimise the management of other CVD risk factors
- Estimate 10-year risk of developing CVD using QRISK2 assessment tool http://qrisk.org
- Offer **atorvastatin 20mg** if 10% or greater 10-year risk of developing CVD or consider **ezetimibe** in primary hypercholesterolaemia if statin contra-indicated
- Offer **atorvastatin 20mg** without completing a risk assessment if patient is > 85 years old or consider **ezetimibe** in primary hypercholesterolaemia if statin contra-indicated

Primary Prevention in Patients with Diabetes

Type 1

- If >40yrs old or Type 1 diabetes for >10 yrs or nephropathy or other CVD risk factors then offer **atorvastatin 20mg** for primary prevention. Do not use risk assessment tool

Type 2

- Estimate 10-year risk of developing CVD using http://qrisk.org/ assessment tool
- Offer **atorvastatin 20mg** to people who have a 10% or greater 10-year risk of developing CVD
- Offer a lower dose if: potential drug interactions, risk of adverse effects, patient preference

Secondary Prevention

- Offer **atorvastatin 80mg**
- Offer a lower dose if:
  - -potential drug interactions
  - -risk of adverse effects
  - -patient preference
- Ensure a lipid sample is taken on admission and again after 3 months of starting treatment. Do not delay statin treatment to manage modifiable risk factors
- If statins are contra-indicated and patient has primary hypercholesterolaemia consider **ezetimibe**
- If LDL persistently raised despite maximum tolerated statin therapy (at least 3 tried) consider **PCSK9 inhibitor** but patient must meet criteria detailed below

Chronic Kidney Disease

- Stage 1 or 2 with no evidence of CVD and > 10% CVD risk using QRISK2 assessment tool http://qrisk.org/
- Stage 1 or 2 with evidence of CVD, start **atorvastatin 20mg** and increase if > 40% reduction in non-HDL cholesterol is not achieved
- Stage 3, start **atorvastatin 20mg** and increase if > 40% reduction in non-HDL cholesterol is not achieved
- Stage 4 or 5, start **atorvastatin 20mg** and agree the use of higher doses with a renal specialist.

(Patients on renal replacement therapy are outside the scope of this guideline)

Primary Non-familial Hypercholesterolaemia

- Consider **atorvastatin 40mg or 80mg** to lower LDL by at least 50% compared to baseline
- Consider **ezetimibe** if statins are contra-indicated or not tolerated, or use with a statin if adequate reduction in LDL is not achieved with statin monotherapy
- If statins and ezetimibe are contra-indicated or not tolerated seek specialist advice
- Refer to NICE clinical guideline TA385 for more information.

Primary Familial Hypercholesterolaemia (FH)

- Requires specialist review. See NICE clinical guideline CG71
- Consider **atorvastatin 40mg or 80mg** to lower LDL by at least 50% compared to baseline
- Consider **ezetimibe** if statins are contra-indicated or not tolerated, or use with a statin if adequate reduction in LDL is not achieved with statin monotherapy
- In heterozygous-FH if LDL persistently raised despite maximum tolerated lipid-lowering therapies consider **PCSK9 inhibitor** but patient must meet criteria detailed below

NICE CG 181 Lipid modification : http://www.nice.org.uk/guidance/cg181 NICE CG 71 Identification and management of familial hypercholesteraemia http://www.nice.org.uk/guidance/cg71

Lipid Lowering Guidelines V3a
Approved by WDTP March 2017 (amended January 2018)

Authors: Peter Lomas

Review by March 2020

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Statin Monitoring

- Check for pre-existing muscle pain before starting treatment. Ensure patient is counselled to report muscle pain – check Creatine Kinase if this occurs.
- Measure LFTs before initiation, at 3 months and 12 months following initiation and then periodically thereafter as per clinical need.
- Measure total, HDL and non-HDL cholesterol 3 months following initiation of *high intensity* statin. Lipid profile does not have to be a fasting one. NICE considers *high intensity* statins to be the following: **atorvastatin 20mg/40mg/80mg, rosuvastatin 10mg/20mg/40mg, simvastatin 80mg**. (note there is an increased incidence of myopathy with simvastatin 80mg – only consider in severe hypercholesterolaemia or high risk CVD).
- Aim for > 40% reduction in non-HDL cholesterol at 3 months. If not achieved, consider adherence to dose timing, diet and lifestyle advice. Increase dose if not already taking maximal therapy. Where total cholesterol is >7.5mmol/L consider familial hypercholesterolaemia and seek specialist advice.
- If intolerance consider alternative statin. Do not offer fibrate, nicotinic acid, omega3 or bile acid sequestrant for prevention of CVD. Do not combine with statins.

PCSK9 Inhibitors

- **ONLY TO BE PRESCRIBED BY LIPID SPECIALIST/CHEMICAL PATHOLOGIST, CARDIOLOGIST OR DIABETOLOGIST.**
- Maximal tolerated lipid-lowering therapy is considered to be reaching the maximum dose or where further dose titration is limited by intolerance. Intolerance is defined as the presence of clinically significant adverse effects that represent an unacceptable risk to the patient or that may reduce compliance with therapy.
  it is recommended that at least 3 different statins should be tried (including rosuvastatin)
- Patients must meet criteria outlined by NICE (TA393 and TA394) in the below table:

Table 1 Low-density lipoprotein cholesterol concentrations above which PCSK9 inh is recommended

	Without CVD	With CVD	
		High risk of CVD[1]	Very high risk of CVD[2]
Primary non-familial hypercholesterolaemia or mixed dyslipidaemia	Not recommended at any LDL-C concentration	Recommended only if LDL-C concentration is persistently above 4.0 mmol/l	Recommended only if LDL-C concentration is persistently above 3.5 mmol/l
Primary heterozygous-familial hypercholesterolaemia	Recommended only if LDL-C concentration is persistently above 5.0 mmol/l	Recommended only if LDL-C concentration is persistently above 3.5 mmol/l	

[1]High risk of cardiovascular disease is defined as a history of any of the following: acute coronary syndrome (such as myocardial infarction or unstable angina requiring hospitalisation), coronary or other arterial revascularisation procedures, chronic heart disease, ischaemic stroke, peripheral arterial disease.

[2]Very high risk of cardiovascular disease is defined as recurrent cardiovascular events or cardiovascular events in more than 1 vascular bed (that is, polyvascular disease).

Abbreviations: CVD, cardiovascular disease; LDL-C, low-density lipoprotein cholesterol.

- Two PCSK9 inhibitors are available for use in the trust: **alirocumab** (75mg or 150mg, depending on desired LDL reduction, by subcutaneous injection fortnightly) and **evolocumab** (140mg by subcutaneous injection fortnightly).
- Treatment should be evaluated within 12 weeks of commencement (steady state LDL concentration is usually observed after 4 weeks) and stopped if ineffective.
- Prescriptions are issued via homecare; **please contact pharmacy/cardiology pharmacist to initiate treatment**.
- Homozygous-FH should not be treated at WUTH. These patients should be treated at an apheresis centre (NHS England Sep 2016).

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