Cardio Vascular Disease

Disclaimer:
Read the disclaimer at medimaps.co.uk/disclaimer

References:
1. cks.nice.org.uk
2. Pulse Birmingham, June 2017.
3. Cardiology consultant Walsall, May 2019
4. AAC Clinical Subgroup Nov 2022
5. Prof Fuat MediConf webinar, June 2023

Investigations

- Lipids (full profile).
- LFTs.
- UEs
- TFTs.
- HbA1c.

Refer to lipid clinic if:
- TC>9.0 and/or
- LDL >6.5 and/or
- Non-HDL >7.5
OR
- Fasting triglycerides > 10

- Could be Familial Hypercholesterolaemia.
- Start a statin STAT while they await clinic review i.e. atorva 40mg

Familial hypercholestrolaemia

- Autosomal dominant genetic disorder leading to doubling of LDL soon after birth.
- Average LDL heterozygous FH = 5.7 (prevealence 1:200)
- Average LDL homozygous FH = 13 (prevalence 1:250,000)
- Use Simon Broome criteria to determine who to refer to lipid clinic.

1o prevention

Management

ASPIRIN
- Modest reduction in non fatal MI. But 31% excess risk of GI bleeding.
- Adds very little, if any, benefit in 1o prevention.
- So do not routinely give aspirin. Including DM without CVD.
- Some notable exceptions could be Asian, Diabetic, CKD so can individualise decision using Q risk or NICE risk table.

STATIN
Start HIGH intensity statin (bascially atorva 20mg) if:
- QRISK ≥ 10%.
- eGFR<60 and/or albuminuria.
- DM Type I and II.

LIFESTYLE
- Exercise.
- Diet i.e. low fat.
- Plant stanol ester e.g. Benecol, ProActiv.
- Reduce alcohol.

2o prevention

Management

ASPIRIN
- For established CAD that should be at least moderate Coronary artery disease (50% luminal disease) or previous PCI or CABG.
- Or clear ACS (appropriate Troponin change with typical symptom or ECG)
- For 2o prevention as applied to IHD and or other vascular atherosclerotic bed such as CVA, TIA, PVD, AAA etc, the drug recommended is clopidogrel 75mg od.

STATIN
Start HIGH intensity statin (if eGFR<60 atorva 20mg, but for everyone else atorva 80mg) if:
- ACS.
- IHD/angina.
- Stroke/TIA.
- PVD (symptomatic).

EXTENT OF LIPID LOWERING WITH AVAILABLE THERAPIES

Approximate reduction in LDL-C

Statin dose mg/day	5	10	20	40	80
Fluvastatin			21%	27%	33%
Pravastatin		20%	24%	29%	
Simvastatin		27%	32%	37%	42%
Atorvastatin		37%	43%	49%	55%
Rosuvastatin	38%	43%	48%	53%	
Atorvastatin + Ezetimibe 10mg		52%	54%	57%	61%

- **Low intensity statins** will produce an LDL-C reduction of 20-30%
- **Medium intensity statins** will produce an LDL-C reduction of 31-40%
- **High intensity statins** will produce an LDL-C reduction above 40%
- **Simvastatin** 80mg is not recommended due to risk of muscle toxicity

MONITORING

	Lipids	LFTs
Baseline	✓	✓
2/12	✓	✓
Each dose ↑	✓	✓
1yr	✓	✓
Annually	X	X

- Do not measure again unless clinically indicated.

a) If ALT > 3 x the ULN do not initiate a statin (or stop if already taking) and rpt LFTs in 1/12.
- If normalised, consider rosuvastatin 5mg or 10mg.

b) If ALT elevated but < 3x the ULN then continue and rpt in 1/12.
-If they remain elevated but < 3 x ULN then continue and repeat again in 6/12.

TARGET

- Rpt lipids and LFTs at 2/12 (rather than 3/12 when they will forget everything you said).
- Don't bother with 40% reduction nonsense which no one really can be bothered to calculate.
- Focus on LDL, the target is < 1.8.
- If you don't get LDL from your lab, then use the target for non-HDL < 2.5
- If fails, rather than ↑ dose of atorva, add in Ezetimibe 10mg/Bempedoic acid 180 mg OD.
- No point beating around the bush with Ezetimibe alone, as the cost is the same as the version with Bempedoic acid, and the Bempedoic acid is really well tolerated.
- Better reduction in LDL if add eztimibe rather than increasing the atorva dose.

Non-HDL = Total cholesterol - HDL.
LDL = non-HDL - (fasting triglycerides*/2.2)
* only valid if < 4.5

1o prevention

- If fails, refer to lipid clinic.

2o prevention

- If fails, Inclisiran or refer for PCSK9i.

- Inclisiran 284mg sub cutaneous injection at month zero, month 3 and then every 6 months from then on.
- Can be doen in 1o care.
- Rx as usual and get patient to bring it to their appointment for you to adminsiter.
- No drug monitoring needed.
- Can check lipids after 10 weeks i.e. just before the 2nd dose to ensure working and encourage patient.

- Proprotein Convertase Subtilisin Kexin 9 monoclonal antibody Inhibitor
- Only by lipid clinics.
- Eligibility criteria:

NICE TA393 Alirocumab NICE TA394 Evolocumab	Without CVD	With CVD: High risk [1]	With CVD: Very high risk [2]
Primary non-FH or mixed dyslipidaemia	Not recommended	LDL C > 4.0 mmoL/L	LDL C > 3.5 mmoL/L
Primary heterozygous-FH	LDL C > 5.0 mmoL/L	LDL C > 3.5 mmoL/L	

1. ACS, coronary or other arterial revascularisation procedures; CHD, ischaemic stroke, PAD.
2. Recurrent CV events.

Triglycerides

4.5 - 9.9
- Ensure you get a fasting reading.
- If non-HDL > 7.5 refer to lipid clinic.

10 - 20
- Repeat fasting after 1-3 weeks and look for 2o causes.
- Refer lipid clinic if still > 10.
- At risk of acute pancreatitis.

> 20
- Urgent referral to lipid clinic if not due to excess alcohol or poor glycaemic control.
- At risk of acute pancreatitis.

Lipoprotein (a)

Management

- Lifestyle changes.
- Statin.
- Target LDL < 2.0
- Monitor for HTN, and diabetes.
- 1o relatives to get tested.

QRISK

- Qrisk may not work appropriately for young pts, as it only goes upto 10 yrs in the future.
- So he (specialist) uses for young pt's either Qlifetime risk or JBS3.

Normal lipids and QRISK > 10%
- Yes !
- Offer a statin as it's to do with risk.

TC:HDL > 7.5 and QRISK < 10%
- Yes !
- Offer a statin as it's to do with risk.

CKD and LDL already < 1.8
- Yes !
- Offer a statin as it's to do with risk.

DM type I 25y, normal lipids
- Yes !
- Offer a statin as it's to do with risk.