

Local implementation of PCSK9 inhibitors within the MKUH Lipid Clinic

Evolocumab and Alirocumab are two new injectable cholesterol-lowering drugs with a new mechanism of action (antibody-based elimination of the plasma protein PCSK9). Both drugs are recommended by NICE TA393 and TA394 (June 2016). Clinical effectiveness in terms of lipid lowering effect, safety and overall evidence base is similar between the two drugs. Annual cost for treatment is high (~£2,000, which is a discounted price).

*Persistently raised low-density lipoprotein cholesterol concentrations above which alirocumab or evolocumab are recommended (TA393 and 394)

| | Without CVD | With CVD | |
|---|--|---|---|
| | | High risk of CVD ¹ | Very high risk of CVD ² |
| Primary non-familial hypercholesterolaemia or mixed dyslipidaemia | Not recommended | Recommended if LDL-C is *persistently >4.0 mmol/l | Recommended if LDL-C is *persistently >3.5 mmol/l |
| Primary heterozygous-familial hypercholesterolaemia | Only if LDL-C is *persistently >5.0 mmol/l | Recommended if LDL-C is *persistently >3.5 mmol/l | |

*persistently – raised more than 2/3 occasions over a minimum of 3 months
¹acute 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.
²recurrent cardiovascular events or events in more than 1 vascular bed (i.e., polyvascular disease).
 Abbreviations: CVD, cardiovascular disease; LDL-C, low-density lipoprotein cholesterol.

Evolocumab and Alirocumab should only be prescribed by hospital consultant lipidologists / specialists. Patient selection and evaluation will adhere to the following scheme (1-6):

1. Exhaust alternative lipid lowering therapies (intensified non-pharmacological alternatives like life-style modifications, alternative statin), statin (Atorvastatin, Simvastatin and Rosuvastatin plus/minus Pravastatin – all at maximally tolerated doses; statin with adjunct therapy

2. Compliance with NICE TA393 or TA394 set criteria

3. Case discussion with Lipidologists at OUH if appropriate

4. Discuss the benefits, side effects and expected outcomes of treatment with the patient. Prescribe alirocumab or evolocumab inj.; Supply the PIL; counsel the patient; first dose to be administered in patients home following arrangement made via a homecare scheme; prescribing will be retained in secondary care.

5. Evaluation of lipid lowering efficacy after 2 months, cessation of therapy in cases showing less than 20% reduction in LDL-C or less than 1.0 mmol/l reduction in LDL-C