

Pathway for Bempedoic acid (Nilemdo®) use for the management of primary hypercholesterolaemia or mixed dyslipidaemia at DBTH trust.

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Background: Primary hypercholesterolemia resulting in cardiovascular disease (CVD) is the leading cause of death in England and Wales. Cardiovascular diseases (CVD) are umbrella of diseases including coronary artery disease, stroke, TIA and peripheral vascular disease caused by process of atherosclerosis. Hyperlipidaemia is one of the major factors in this process. National guidance for management of primary and secondary prevention of the CVD published and updated by NICE in May 2021 is aimed at reducing mortality and morbidity due to CVD events.

Initial treatment of Primary hypercholesterolaemia both in heterozygous familial and non-familial as well as mixed hyperlipidaemia remains statin along with diet, exercise and lifestyle modification. Ezetimibe could be added to statin after titration of statin for achieving better LDL-C targets. This initial treatment needs to be initiated by primary care or secondary care before referring to Lipid clinic in secondary care.

Both Alirocumab and Evolocumab (PCSK9i) could be used in combination with statin and or ezetimibe in these situations to achieve a good control of LDL-C in the Lipid clinic. Now bempedoic acid could be placed before PCSK9i for this purpose to achieve lower level of LDL-C. This will improve benefits of lipid lowering in these patients by lowering CVD mortality and morbidity.

Bempedoic acid with or without Ezetimibe used in treating primary hypercholesterolemia (heterozygous familial and non-familial) or mixed hyperlipidaemia has been reviewed and recommended by NICE¹ in April 2021.

NICE¹ recommended use of bempedoic acid and ezetimibe* in the following situations after trying Statin with or without Ezetimibe

1. Where statins are contraindicated or not tolerated
2. Ezetimibe alone does not control low-density lipoprotein cholesterol well enough.
3. Bempedoic acid with ezetimibe can be used as separate tablets or a fixed-dose combination to get LDL-C lower down

*bempedoic acid alone may be appropriate in those patients intolerant of ezetimibe² following consideration of other pharmacological options. If there has been no effect on LDL-C after 3 months consider referring back to lipid clinic.

Limitations of use of Bempedoic acid and Ezetimibe are

1. **An indirect comparison of trials suggests that bempedoic acid with ezetimibe may not be as effective at reducing LDL-C levels as alirocumab or evolocumab.**
2. **Combination with statin increases side effects**
3. **It is not used in patients with Gout as it could worsen hyperuricaemia.**
4. **It is not first line treatment of Primary hypercholesterolaemia (heterozygous familial or non-familial).**

References:

1. <http://www.nice.org.uk/guidance/ta694>: *Bempedoic acid with ezetimibe for treating primary hypercholesterolaemia or mixed dyslipidaemia*
2. *Long-term safety and efficacy of bempedoic acid in patients at high risk of atherosclerotic cardiovascular disease: results from the CLEAR Harmony open-label extension study* *European Heart Journal*, Volume 41, Issue Supplement_2, November 2020, ehaa946.3344, <https://doi.org/10.1093/ehjci/ehaa946.3344>
3. Laufs, U., Banach, M., Mancini, G., Gaudet, D., Bloedon, L., Sterling, L., Kelly, S., Stroes, E. (2019, 04 02). *Efficacy and Safety of Bempedoic Acid in Patients with Hypercholesterolemia and Statin Intolerance*. *Journal of the American Heart Association*, 8(7). Retrieved 06 28, 2021, from <https://doi.org/10.1161/JAHA.118.011662>