Abbreviated Medicine Assessment

Nadolol

Recommendation: Amber 0 for the following indications:

Long QT syndrome.

On advice of cardiology only. All dose titrations must be carried out by the initiating cardiologist.

Details of Review

Name of medicine (generic & brand name)**:**

Nadolol

Strength(s) and form(s):

Tablets 80mg

Dose and administration:

40-240mg once daily (depending on the indication).

Dosage should be titrated gradually with at least a week between increments.[1]

BNF therapeutic class / mode of action:

Beta-adrenoceptor blocking drug

Licensed indication(s):

Angina Pectoris; Hypertension; Arrhythmias; Migraine; Thyrotoxicosis.[2]

Proposed use (if different from, or in addition to, licensed indication above):

Long QT syndrome.

Course and cost:

28 x 80mg tablets = £19.45

£9.72 - £58.35 per patient/month

Prices as per drug tariff June 2025

Background and context

Long QT syndrome (LQTS) is characterised by a prolonged QT interval on ECG, which may be congenital or acquired. In congenital LQTS, genetic mutations affect ion channels important in myocardial repolarisation. Acquired LQTS may occur secondary to ingestion of QT interval-prolonging drugs, electrolyte imbalances, or bradyarrhythmias.

Patients with LQTS are at increased risk of syncope, ventricular arrhythmias (including torsades de pointes), and sudden cardiac death.

Unless there is an identifiable reversible cause, treatment primarily involves lifestyle modification and beta-blocker therapy with the implantation of a cardioverter-defibrillator in selected cases.[3]

Current standard of care/comparator therapies:

- Beta blockers
- Implantable cardioverter defibrillator (ICD)
- Surgery

Relevant guidance and evidence:

European Society of Cardiology[4] (2022)

All LQTS patients receive advice on avoidance of hypokalaemia, QT-prolonging medications and genotype-specific triggers. Beta-blockers are also recommended in all LQTS patients. Non-selective beta-blockers nadolol and propranolol have greater efficacy in reducing arrhythmic risk.

Systematic Review on the Role of Beta-Blockers in Reducing Cardiac Arrhythmias in Long QT Syndrome[5] (2022)

LQTS is one of the most common inherited cardiac channelopathies with a prevalence of 1:2000. The condition can be congenital or acquired with 15 recognized genotypes; the most common subtypes are LQTS 1, 2, and 3 making up to 85%-90% of the cases.

Eleven relevant studies were selected after considering inclusion criteria, exclusion criteria, and quality appraisal within the last five years, focusing on β-blocker selection directed based on the subtypes of LQTS. Two meta-analyses, one cohort study, and eight reviews provided significant data that non-selective βblockers unequivocally are of benefit in these LQTS types. Summary of findings suggested nadolol followed by propranolol yields the best results in LQTS 1, while nadolol would yield the best effect in LQTS 2 and 3.

Clinician feedback

The cardiology formulary group were contacted for comment. Comments received:

Cardiology pharmacist, ELHT	My suggestion would be that is only approved for this narrow indication as there are a great number of beta blockers out there. East Lancs Trust doesn't use it at present but would like to have access to it with 1 identified patient in mind. It would need cardiology/arrhythmia specialist input to initiate, as would require diagnosis, but it is a beta blocker so no significant monitoring and should be prescribable in primary care. Therefore I would suggest GREEN Restricted RAG status. There is usage across the region, and I am aware that Blackpool used it "routinely", but this cohort of patients is uncommon so unlikely to have a significant financial impact.
Senior Medicines Optimisation Pharmacist, L&SC ICB	We don't come across this much in primary care …. it would have to be amber 0 as a minimum.
Cardiology consultant, ELHT	My understanding is that Propranolol and Nadolol are the b-blockers of choice in prolonged QT syndromes. Therefore having Nadolol in the formulary will help. It's an old Beta-blocker. Therefore can be initiated and continued by GP on recommendation of a cardiologist.

Commissioning considerations:

Innovation, need and equity implications of the intervention:
There are 8 oral beta blockers currently on the L&SC medicines formulary. Sotalol is Amber 0 for arrhythmias.
Financial implications of the intervention:
Feedback by the applicant is that patient numbers would be very low and that this is current practice so it is unlikely that prescribing will increase.
Service Impact Issues Identified:
None identified.
Equality and Inclusion Issues Identified:
None identified.
Cross Border Issues Identified:
Pan Mersey have nadolol on formulary with Green RAG status. **GMMMG** do not have nadolol on formulary.
Legal Issues Identified:
None identified.
Media/ Public Interest:
None identified.

References

[1] British National Formulary, “Nadolol” [Online]. Available: https://bnf.nice.org.uk/drugs/nadolol/ [Accessed June 2025]

[2] Electronic Medicines Compendium, "Summary of Product Characteristics Nadolol 80mg Tablets", Neon Healthcare Ltd, March 2024 [Online]. Available: https://www.medicines.org.uk/emc/product/12383/smpc [Accessed June 2025]

[3] British Medical Journal, “Long QT syndrome”, 2025

[4] European Society of Cardiology, “2022 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death”, 2022 [Online]. Available: https://academic.oup.com/eurheartj/article/43/40/3997/6675633?login=false

[5] Went TR et al, “A Systematic Review on the Role of Beta-Blockers in Reducing Cardiac Arrhythmias in Long QT Syndrome Subtypes 1-3”, *Cureus*, vol. 13(9), 2021