Propranolol

Safe Prescribing Summary

NHS Nottingham and Nottinghamshire

Background

Propranolol is a non-cardioselective beta-adrenergic antagonist (beta-blocker) which is used for the treatment of certain cardiac conditions, migraine prophylaxis, and the physical effects of anxiety.

Propranolol is an effective and safe drug when taken as prescribed and is widely used in primary care. However, in 2020 the UK Healthcare Safety Investigation Branch (HSIB) published a report highlighting that the toxicity of propranolol in overdose was under-recognised amongst healthcare professionals. **The report called for awareness to be raised that propranolol is potentially very toxic in overdose.**

Propranolol should be prescribed with caution in individuals at increased risk of self-harm or suicide. Higher-risk groups include (but are not limited to) young people, those with mental health conditions, neurodivergent individuals, and people with a history of alcohol or drug misuse. Patients with migraine, depression or anxiety may also be at higher risk.

Advice for prescribers

- Low dose propranolol is licensed for the relief of situational anxiety and generalised anxiety disorder (GAD), but it is not featured in NICE Guidance. NICE recommended selective serotonin reuptake inhibitors (SSRIs) first line if drug treatment is required.
- Only initiate propranolol in cases of situational anxiety where physical symptoms are the predominant feature and the benefits of treatment outweigh risk of overdose.
- When prescribing propranolol for situational anxiety and GAD:
    - Use the lowest effective dose for the shortest duration.
    - Consider providing smaller quantities to safeguard patients.
    - Ensure regular reviews. Consider adding to 'acute' prescriptions to prompt these.
- Consider counselling patients on the harms of propranolol in overdose and what to do in cases of purposeful or accidental overdose. This information is contained in the product's patient information leaflet.
- The symptoms of an overdose with propranolol and other beta blockers include light-headedness, dizziness, and fainting. Patients may have a slow heart rate and heart failure may be precipitated or exacerbated.
- Moderate toxicity is generally thought to occur at doses around 1600mg (British Pharmacological Society). However, please note individual responses vary greatly: death has followed ingestion of about 2g, and survival after ingestion of 8g (Toxbase)

Review of existing patients

- Consider reviewing and risk assessing existing patients who have a history of self-harm and/or suicidal thoughts and are prescribed propranolol for any indication.
- Consider reviewing and risk assessing existing patients who are prescribed propranolol for anxiety for their risk of overdose and the ongoing suitability of the medication.
- Report medicines safety incidents via LFPSE.

**PrescQIPP provide an audit template, GP clinical system searches, and a patient leaflet.*
These can be accessed here, but please note you will need a free account or need to create an account to view.

Further Information

If you have any questions or want further information, please see APC guidance or contact your ICB Medicines Optimisation Pharmacist.