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QT Concerns

Nothing makes a pharmacist's mouth water like an order for a potential QT prolonging drug. The QT interval on the ECG (electrocardiogram) measures the time it takes the heart to recharge after each beat. If the QT interval is too long (we like to see it under 450 msec on the ECG – over 500 msec is very concerning) there is a risk of a major ventricular arrhythmia. Torsade de pointes (TdP) is one such arrhythmia that can cause sudden cardiac death and ventricular fibrillation can cause an MI with the same outcome.

Clearly, we want to try really hard to avoid messing with the QT interval. There are a number of patient conditions and medications that can impact the interval and arrhythmia risk. Our job is to seek alternatives if we believe the risk is unacceptable.

On the patient side, being elderly or female adds to risk. Enlarged, failing hearts can have electrical conduction issues and do a poor job of clearing drugs, so they are problematic. The same can be said for impaired kidneys and livers. They allow medications to accumulate, worsening their potential QT effects. Other risk factors include bradycardia (HR < 60) and low or borderline potassium (K) or magnesium (Mg) levels. Caution is advised when using most diuretics (K depletion), especially in combination with PPIs (e.g. Pantoloc®, Tecta® and Prevacid®), where sharply reduced Mg levels can be seen. Mg loss destabilizes the heart's electrical activity and increases arrhythmic potential.

Two recent wide ranging Health Canada Drug alerts have been related to QT issues. Citalopram doses were capped at 20 mg and domperidone at 30 mg daily in those over 65 years of age to prevent the development of fatal TdP. The presence of multiple resident risk factors or medication related QT concerns will trigger a call from your friendly GeriatRx pharmacist.

The pharmacist will usually recommend a lower risk alternative medication. For example, escitalopram or some of the older SSRIs are safer than citalopram. If we receive an order for Avelox® for a vulnerable individual, we will suggest another quinolone antibiotic, such as Cipro®, which carries less risk. The list of potential QT prolonging drugs is long, but those of greatest concern include: all antipsychotics, the older tricyclic antidepressants, most anti-arrhythmics, Atarax®, Remeron® and Aricept®.

Occasionally we must use one of these drugs or exceed the recommended dose to treat a challenging condition. A relatively short QT from a recent ECG will give us the confidence to proceed with minimal concern in such instances.

Breath Deep with COPD

This has certainly been a big year for COPD. Multiple devices and drug combinations have been introduced (described ad nauseam in prior GeriJournals), and I'd like to take one more kick at the can.

The recently released *FLAME* study in *NEJM* showed a clear benefit to combined therapy with a LABA (Serevent-like) and LAMA (Spiriva-like) inhaler. There were 3,362 patients enrolled in the trial, all of whom had one or more COPD exacerbation in the past year. Treatment with Ultibro Breezhaler®, a LAMA/LABA combo, resulted in fewer exacerbations and a longer time to the first flare-up than a LABA/steroid combination (Advair®). In COPD with no inflammatory or asthmatic component, Anoro Ellipta®, Inspiolto Respimat® or Ultibro® may be a better choice than a LABA/steroid.

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