Best Practice Message

June 2021

Focus on Safety: Ondansetron

Practice changing moments

- There is an increased risk of oral cleft defects associated with first trimester use of ondansetron.
- In paediatrics there is evidence to use ondansetron only if the child is dehydrated.
- In paediatrics usually only one dose of ondansetron is required and prescribing longer courses should be avoided.
- QT interval prolongation has been reported with ondansetron use.

Background

Ondansetron is a specific $5HT_3$-receptor antagonist. It blocks receptors in the chemotherapy receptor zone as well as in the gastro-intestinal tract, thereby decreasing afferent visceral and chemotherapy receptor zone stimulation of the medullary vomiting centre.[1] In Aotearoa, ondansetron is approved for use with emetogenic chemotherapy and in the prevention of post-operative nausea and vomiting. In children ondansetron is also approved as a single dose for acute gastroenteritis vomiting associated with dehydration. In adults it is used as an unapproved indication for acute severe vomiting. There is limited evidence supporting its use as an antiemetic in any other situation.[1] As with all medicines, there are risks associated with ondansetron use. Ondansetron commonly causes constipation, flushing and headaches. While transient ECG changes are very rare, QT interval prolongation has been reported and ondansetron should be administered with caution to patients with congenital long QT syndrome or electrolyte abnormalities.[2] This is worth considering, especially in the elderly.

Pregnancy risks

Medsafe has recently issued a warning to alert prescribers of the risk of oral cleft defects with the use of ondansetron during the first trimester of pregnancy[3]. A United States study of almost two million pregnancies found that ondansetron use in the first trimester led to an increase of oral cleft defects. The absolute risk of oral cleft defect was 14 per 10,000 exposed infants compared to 11.1 per 10,000 unexposed infants.[4]

Ondansetron should be reserved for first trimester pregnancy only if the benefits of use clearly outweigh the risks, after a shared decision-making process with the pregnant woman.

Paediatrics

As with adults, in paediatrics the choice of antiemetic depends on the indication. Ondansetron is considered safer than other antiemetics in children and adolescents, where the risk of dystonic reaction is higher[5].
In children with acute gastroenteritis, ondansetron can reduce vomiting episodes. As acute gastroenteritis is usually self-limiting however, the use of an antiemetic is only recommended if the child is dehydrated. Ondansetron also reduces the need for intravenous rehydration[6]. A single dose of oral ondansetron is often sufficient to facilitate oral rehydration therapy, by reducing vomiting[7]. While side effects are limited with short-term use, the child should still be monitored for constipation.

Elderly

Elderly people are more likely to have electrolyte abnormalities, be on concomitant QT prolonging agents, or have heart failure. These factors should be considered when using ondansetron in this population, as ondansetron increases the risk of QT prolongation. When ondansetron is used in elderly, it is also recommended that prescribers highlight the most frequent side effects, which are headaches and constipation. Hypotension is an uncommon but reported side effect.[2]

Tools available:

- For a list or to search for QT interval prolonging medicines: https://www.crediblemeds.org/
- For guidance on treating nausea and vomiting during pregnancy: https://nzf.org.nz/nzf_2348

References:

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