Interacting with interactions – Orkambi® roll-out at a paediatric hospital

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Background

Orkambi® (Lumacaftor/Ivacaftor) is a potentially life-changing medicine for patients with cystic fibrosis with the homozygous F508del mutation. Orkambi® is a strong enzyme inducer with many drug interactions. It was added to the Pharmaceutical Benefits Scheme in October 2018.

Aims

Describe the incidence, significance and management of drug interactions between Orkambi® and patients' current medications.

Methods

Senior pharmacists undertook comprehensive medication interviews in person or by phone with parents of children planned to initiate Orkambi® between October 2018 and May 2019. Interviews involved a comprehensive medication history, review of resources to determine likelihood and significance of the drug interaction with Orkambi®, documentation of a management plan for the drug interaction in the patients medical record and follow-up with the prescriber.

Number of interviews performed, drug interactions identified and clinical significance of interactions (low-risk, high-risk and unknown significance) were recorded for analysis. High-risk interactions were those requiring intervention (Orkambi® dose adjustment, therapeutic drug monitoring or cessation of the interaction drug due to unacceptable impact on Orkambi®). Low-risk interactions were those that may lead to a change in efficacy of the interacting drug, however could be safely managed by observation and/or monitoring before adjusting therapy.

Results

A total of 142 patients were identified as clinically appropriate to commence Orkambi®. From this cohort 111 interviews were undertaken. 76 patients (68%) had 109 potential drug interactions with Orkambi® identified. Almost half (47 interactions, 43%) of interactions were with prescription medicines, followed by over-the-counter (OTC) medications (34 interactions, 31%) and complementary and alternative medications (CAMs) (28 interactions, 26%).

For interactions identified with prescription medicines, 19% were rated as high-risk. Medications involved were itraconazole, clarithromycin, clofazimine and sirolimus. Recommendations included temporary Orkambi® dose adjustment, therapeutic drug monitoring of the interacting drug or cessation of the interacting drug.

Figure 1. Interactions identified with Orkambi®

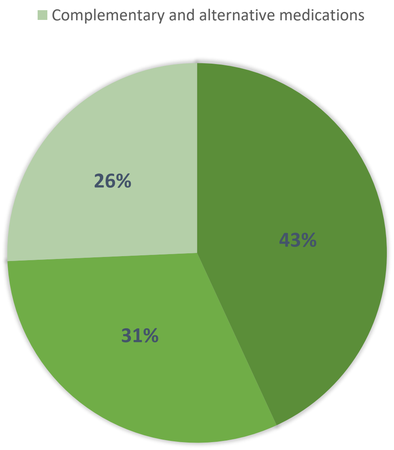
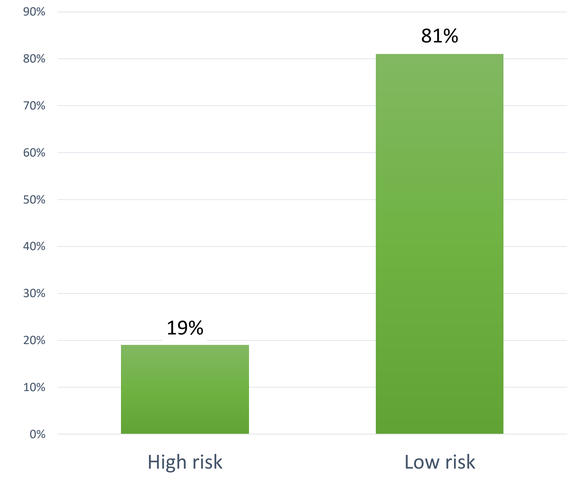


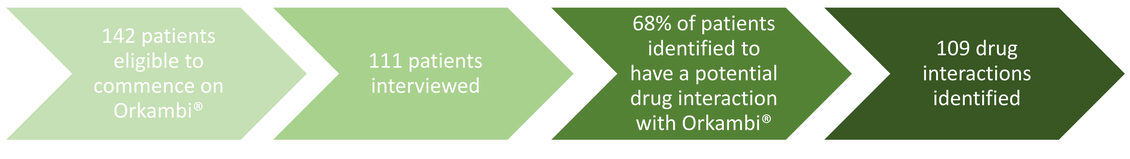
Figure 2. Clinical significance of interactions identified between Orkambi® and prescription medications



The remaining 81% of prescription medication interactions identified were deemed low-risk, and suitable for monitoring and dose adjustment only if clinically required. Examples of medications involved include prednisolone, proton pump inhibitors and selective serotonin reuptake inhibitors.

For interactions identified with OTC medications (ibuprofen in all instances), 100% were deemed to be low-risk, as efficacy could be easily monitored or alternative analgesia used. All CAM interactions identified were defined as unknown significance as there was limited published data on drug interactions occurring with Orkambi® and interactions were theoretical in nature (i.e. substance reported to be a CYP3A4 inhibitor). Garlic, echinacea and turmeric were the most common CAMs identified.

It was noted that a comprehensive medication history performed by a pharmacist utilizing probing questions, teased more information out of parents on all medications and supplements being used at home when compared to medication lists prepared by medical officers. This led to a higher number of drug interactions with Orkambi® being identified.



Conclusions

Potential drug interactions were identified for the majority of patients prescribed Orkambi®. Prescription medication interactions most commonly required immediate action. This study highlights the important role that pharmacists play in clinically reviewing medication therapy for patients with cystic fibrosis and managing the introduction of new therapies.

Acknowledgements

The Queensland Children's Hospital Pharmacy team for their assistance in conducting medication interviews and the Queensland Children's Hospital Cystic Fibrosis Department for their assistance in identifying patents eligible to commence on Orkambi®.

Queensland Government