NutriPATH

RECOMMENDATIONS FOR HEALTHCARE PROFESSIONALS

PERSONALISED GASTROINTESTINAL MEDICATION REPORT

For Test Patient

Date of birth:	myDNA ID:	Pathology No:
1-Jan-0000	9016	00-6846545
Collected:	**Received:**	**Reported:**
1-Jan-0000	1-Jan-0000	31-May-2017

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ABOUT THIS REPORT

Overview

This report provides clinically relevant information on what the patient's genetic results predict about their response to a number of medications covered by this report.

The information concerns drug metabolism and plasma concentrations (drug exposure), as well as the potential for altered clinical effects.

Based on the available information found in the published literature, each medication has been assigned a category according to the likely clinical significance of each gene-drug interaction.

The three categories are:

- Major – significant result that may require altering this medication
- Minor – result should be considered as may affect medication response
- Usual – usual prescribing considerations apply

For many medications covered in this report, international, peer reviewed prescribing guidelines are available and these are included in our report.

The two major guidelines are those of the Clinical Pharmacogenetics Implementation Consortium (CPIC) and the Royal Dutch Pharmacists Association – Pharmacogenetics Working Group (DPWG).

Report breakdown

The report consists of the following sections:

- Genetic test results summary – presents the patients genotypes for the genes relevant to the medications covered by this report
- Medication tables arranged according to the three categories
- Details of test results – an explanation of how the genotypes have been used to predict CYP enzyme function and the likely general effect on drug metabolism and plasma concentrations (exposure)
- References – the major references used for the report. More detailed references are available by contacting myDNA.

As part of our clinical service, we have a team of clinical experts available to answer any questions you may have about this report or about pharmacogenomics in general.

If you have any such queries, please contact our team by emailing info@nutripath.com.au.

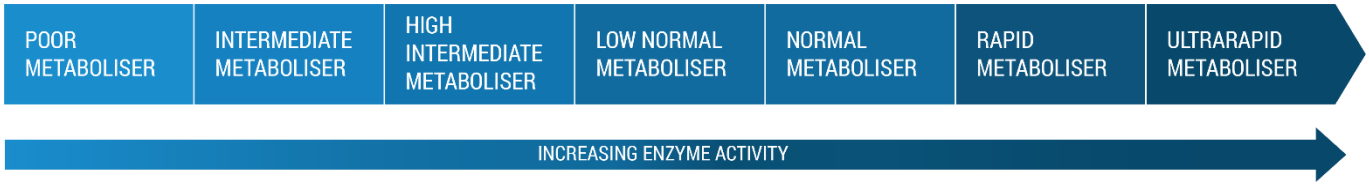
RESULTS SUMMARY

GENETIC TEST RESULTS SUMMARY

GENE	GENOTYPE	PHENOTYPE
CYP2D6	*4/*4	Poor metaboliser
CYP2C19	*17/*17	Ultrarapid metaboliser

Detailed interpretations of genetic test results are provided at the end of this report.

The following diagram provides the range of enzyme activity predicted by the myDNA test.



PROTON PUMP INHIBITORS

MEDICATIONS WITH ***MAJOR*** PRESCRIBING CONSIDERATIONS

MEDICATION	INTERPRETATION	RECOMMENDATION
Esomeprazole	*CYP2C19* - **Ultrarapid metaboliser:** This genotype predicts increased metabolism of esomeprazole and there may be a reduced clinical response in conditions such as oesophagitis and H. pylori. The effect of this genotype in predicting a reduced PPI response is less pronounced with esomeprazole than with several other drugs in this class (omeprazole, lansoprazole, pantoprazole).	If response is inadequate, consider 1) increasing the dose, 2) using divided dosing (i.e. at least twice daily) even of the same overall daily dose and 3) trial of rabeprazole as an alternative. Note that the DPWG recommends a dose increase by 50-100% and being alert to insufficient response.[1]
Lansoprazole	*CYP2C19* - **Ultrarapid metaboliser:** This genotype predicts increased metabolism of lansoprazole which has been linked to an incomplete clinical response in conditions such as oesophagitis and H. pylori.	If response is inadequate, consider 1) a preference for esomeprazole or rabeprazole, 2) increasing the dose, and 3) using divided dosing (i.e. at least twice daily) even of the same overall daily dose. Note that the DPWG recommends a dose increase by 200% and being alert to insufficient response.[1]
Omeprazole	*CYP2C19* - **Ultrarapid metaboliser:** This genotype predicts increased metabolism of omeprazole which has been linked to an incomplete clinical response in conditions such as oesophagitis and H. pylori.	If response is inadequate, consider 1) a preference for esomeprazole or rabeprazole, 2) increasing the dose, and 3) using divided dosing (i.e. at least twice daily) even of the same overall daily dose. Note that the DPWG recommends a dose increase by 100-200% and being alert to insufficient response.[1]
Pantoprazole	*CYP2C19* - **Ultrarapid metaboliser:** This genotype predicts increased metabolism of pantoprazole which has been linked to an incomplete clinical response in conditions such as oesophagitis and H. pylori.	If response is inadequate, consider 1) a preference for esomeprazole or rabeprazole, 2) increasing the dose, and 3) using divided dosing (i.e. at least twice daily) even of the same overall daily dose. Note that the DPWG recommends a dose increase by 400% and being alert to insufficient response.[1]

MEDICATIONS WITH ***MINOR*** PRESCRIBING CONSIDERATIONS

MEDICATION	INTERPRETATION	RECOMMENDATION
Rabeprazole	*CYP2C19* - **Ultrarapid metaboliser:** This genotype predicts increased metabolism of rabeprazole by CYP2C19 and there may be reduced clinical response with conditions such as oesophagitis and H. pylori. The effect of this genotype in predicting a reduced PPI response is less pronounced with rabeprazole than with certain other drugs in the class (omeprazole, lansoprazole, pantoprazole). Rabeprazole appears to be the least affected PPI by variations in the CYP2C19 genotype.	If the response to rabeprazole is inadequate, consider the following: 1) increasing the dose, 2) using divided dosing (i.e. at least twice daily) even of the same overall daily dose, 3) trial of esomeprazole as an alternative agent.

NOTE: These tables do not account for the effect of any inhibitors or inducers. The table is not an all-inclusive list of all medications.

ANTIEMETICS

MEDICATIONS WITH ***MAJOR*** PRESCRIBING CONSIDERATIONS

MEDICATION	INTERPRETATION	RECOMMENDATION
Ondansetron	***CYP2D6*** **- Poor metaboliser:** Significantly reduced metabolism via CYP2D6 and increased drug exposure are predicted. This has been associated with an improved antiemetic response. It may also increase the risk of concentration-dependent adverse effects.	No genotype-guided dosing recommendation available. Monitor for adverse effects.
Tropisetron	***CYP2D6*** **- Poor metaboliser:** Significantly reduced metabolism via CYP2D6 and increased drug exposure are predicted. This has been associated with an improved antiemetic response. It may also increase the risk of concentration-dependent adverse effects.	No genotype-guided dosing recommendation available. Monitor for adverse effects.

MEDICATIONS WITH ***MINOR*** PRESCRIBING CONSIDERATIONS

MEDICATION	INTERPRETATION	RECOMMENDATION
Metoclopramide	***CYP2D6*** **- Poor metaboliser:** Reduced metabolism of metoclopramide by CYP2D6 is predicted. There may be an increased risk of extrapyramidal adverse effects, particularly at higher doses.	No genotype-guided dosing recommendation available. Monitor for adverse effects.

NOTE: These tables do not account for the effect of any inhibitors or inducers. The table is not an all-inclusive list of all medications.

GENETIC TEST RESULTS

GENE	GENOTYPE	PHENOTYPE
CYP2D6	*4/*4	Poor metaboliser Due to the presence of two null alleles, this individual is predicted to have a poor metaboliser phenotype. For a drug extensively metabolised by CYP2D6, drug exposure and clinical effects may either be greatly increased (for an active drug) or greatly decreased (for a prodrug). The individual is at risk of experiencing adverse effects (active drug) or therapeutic failure (prodrug).
CYP2C19	*17/*17	Ultrarapid metaboliser Due to the presence of two increased function alleles, this individual is predicted to have an ultrarapid metaboliser phenotype. For a drug extensively metabolised by CYP2C19, drug exposure and clinical effects may either be decreased (for an active drug) or increased (for a prodrug). The individual is at risk of therapeutic failure (active drug) or adverse effects (prodrug).

REFERENCES

1. Swen J, Nijenhuis M, de Boer A, Grandia L, Maitland-van der Zee A, Mulder H et al. Pharmacogenetics: From Bench to Byte— An Update of Guidelines. Clin Pharmacol Ther. 2011;89(5):662-673.

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Laboratory Results provided by: GenSeq Labs

Disclaimer: The pharmacogenomic test result in this report is just one factor that the prescribing doctor will take into consideration when determining a patient's appropriate medication and dose. These interpretations are being provided to the prescribing doctor as a tool to assist in the prescription of medication. Patients are advised not to alter the dose or stop any medications unless instructed by the doctor. The interpretation and clinical recommendations are based on the above results as reported by GenSeq Labs and also uses information provided to myDNA by the referring doctor. This report also assumes correct labelling of sample tubes and that the sample is from the above patient.