

# PERCEPTION OF HOSPITAL PHARMACISTS TOWARDS PHARMACOGENETIC TESTING

Althea Marie Xuereb<sup>1</sup>, Francesca Wirth<sup>1</sup>, Luana Mifsud-Buhagiar<sup>2</sup>, Anthony Serracino-Inglott<sup>1,2</sup>

<sup>1</sup>Department of Pharmacy, Faculty of Medicine and Surgery, University of Malta, Msida, Malta

<sup>2</sup>Malta Medicines Authority, Malta Life Sciences Park, San Ġwann, Malta

email: althea.m.xuereb.11@um.edu.mt

## INTRODUCTION

Pharmacogenetic (PGx) testing can be used as a tool in personalised medicine. PGx has potential to improve drug efficacy, patient safety and clinical outcomes and decrease healthcare costs.<sup>1</sup> Advances in PGx may provide for the expansion of the role of hospital pharmacists in precision pharmacotherapy.

## AIMS

To assess awareness, attitudes and confidence of hospital pharmacists regarding PGx testing.

## METHOD

### 1. Development of self-administered questionnaire

5 sections: Participant demographics, Awareness, Education and Training, Attitudes, PGx Testing in Practice

### 2. Psychometric evaluation of questionnaire

Validation: Panel of 9 members (5 pharmacists, 4 physicians); Consensus reached after two rounds.

Reliability testing: 9 participants, Test-retest method (Day 1, Day 14); Questionnaire deemed reliable and accepted.

### 3. Dissemination of questionnaire

Questionnaire was disseminated to 70 hospital pharmacists practicing in 4 hospitals (3 public, 1 private) after ethics approval.

Descriptive statistics were calculated.

## RESULTS

- Forty-two pharmacists answered the questionnaire; 24 female, 18 male (18 practicing for more than 10 years).
- Forty-one pharmacists were aware of the term 'PGx testing'. Awareness and attitudes of the pharmacists in relation to PGx testing are shown in Table 1 and 2.
- Seventeen pharmacists perceived the need to order a PGx test at least once monthly. The greatest challenges for PGx testing implementation were cost issues (n=41) and lack of healthcare professional awareness (n=39).
- Lack of confidence was expressed in recommending (n=31) a test, in interpreting test results (n=35) and discussing test results with patients (n=31). Thirty-eight pharmacists believe that they require education and training to increase competency and confidence in PGx testing. Seminars (n=29) and courses (n=24) were the preferred approaches for acquiring further education on PGx testing.

Table 1. Awareness of PGx testing (N=42)

Pharmacists were 'moderately' and 'extremely' aware of:	Number of pharmacists
Advantages of PGx testing	27
Limitations of PGx testing	11
Drugs for which PGx is required/recommended	13
Availability of PGx information resources	12
Drugs for which PGx testing is performed locally	5

Table 2. Attitudes towards PGx testing (N=42)

Pharmacists 'strongly agreed' and 'agreed' that PGx testing:	Number of pharmacists
Guides individualised therapy selection and dosing	41
Should be a government-funded service	30
Leads to reduced healthcare costs	24
Is applicable for use in their practice	21
Should be routinely implemented in practice	25

## CONCLUSION

PGx is considered to be a measure to achieve personalised medicine by pharmacists and is applicable for use in their practice, however lack of confidence and the need of further training is expressed<sup>2</sup>; these findings have also been reflected by participants in this study. Increased training to improve competency in PGx testing and the designing of a standardised framework with regards to application of PGx testing in practice will have an effect on the role of the hospital pharmacist in precision medicine.

## REFERENCES

- <sup>1</sup>Klein ME, Parvez MM, Shin JG. Clinical implementation of pharmacogenomics for personalised precision medicine: Barriers and solutions. *J Pharm Sci.* 2017;106:2368-79.  
<sup>2</sup>Kennedy MJ. Personalized medicines-are pharmacists ready for the challenge? *Integr Pharm Res Pract.* 2018;7:113-23.

