Integrating pharmacogenetic information into medication reviews – an interprofessional challenge

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Background & Objectives

- Individual differences in drug response are well-known.
  - Ranging from an adequate effect to nonresponse and even toxicities.
- Drug response can be influenced by the patients’ genetic makeup [1].
  - Affecting expression and/or activity of enzymes and transporters involved in absorption, distribution, metabolism, and excretion.
- Evidence on drug-gene interactions is accumulating, notably for antidepressants.
  - Pharmacogenomics Knowledge Base (www.pharmgkb.org)
  - Recommendations for pharmacogenetic (PGx)-guided drug selection and dosing (www.cpicpgx.org)
  - Information in drug labels [2]
- PGx-testing is not yet routinely applied in clinical practice.
  - Barriers include lacking education of healthcare professionals and non-established interprofessional procedures [3].
- Drug response can also be influenced by other factors.
  - Such as drug–drug – and drug-food interactions, renal- and liver function as well as adherence.

Therefore, we aim to:

a) integrate PGx-information into medication reviews as a pharmacy service
b) promote interprofessional decision making on drug selection and dosing, considering PGx-information

Pharmacy Service

Setting:
- Solothurner Spitäler
- Psychiatry inpatients and outpatients
- Service may be initiated by physicians and pharmacists

Medication with known PGx-association

Patient Selection:

- AND:
  - a) adverse drug reactions
  - OR/AND
  - b) insufficient response
  - OR/AND
  - c) planned new prescription or therapy change

1. patient interview
   - medication reconciliation
   - clarification of medication history (incl. ADRs and nonresponse)

2. patient consent
   - under current Swiss law, consent for PGx-testing must be obtained by a medical doctor

3. PGx-analysis
   - sampling and shipping of blood or buccal swab to laboratory
   - genetic analysis

4. medication review
   - incl. integrative evaluation of PGx-data

5. written report
   - results, conclusions and concrete recommendations

6. shared decision making
   - on medication selection and dosing
   - together with the physician and the patient

Discussion & Conclusion

To achieve best possible benefits, we postulate that PGx-information should be analyzed in the context of the medication history, the current therapy as well as other factors influencing drug response. The herein described PGx pharmacy service enables an extensive medication analysis including PGx-information, to personalize pharmacotherapy recommendations. This rational preselection based on primarily kinetic considerations, provides a basis for interprofessional decision making together with the physician [4]. We are currently collecting data within a case series (NCT04154553), for a qualitative evaluation of the herein proposed pharmacist-led PGx-service.

Literature

1 Meyer zu Schwabedissen, HE. Springer: Cham, Switzerland. 2015; Volume 7, pp. 93–112.


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