Personalised approaches of the Portuguese Adverse Drug Reaction System

Miguel Antunes - DGRM
Pharmacovigilance is the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other medicine-related problem. (WHO)

Before a medicine is placed on the market, the only safety information is provided by clinical trials, that includes a very limited and homogenous population (e.g., it normaly excludes children, elderly and pregnant women). It is only after the market authorization, and after it is being used by the destined population for a longer period of time that we get the fuller safety profile of a medicine.

“It is therefore essential that the safety of all medicines is monitored throughout their use in healthcare practice.” (EMA)
The 3rd adverse drug reaction (ADR) awareness week campaign: 19-23 November 2018

Reporting side effects helps the safe use of medicines for babies, children and pregnant women #medsafetyweek

Campaign guide for stakeholders and partners
The 3rd adverse drug reaction (ADR) awareness week campaign: 19-23 November 2018
Spontaneous Reporting System

Legend:
- **Process**: represents a specific or roll-up activity in the overall process
- **Communication**: represents process communications (e.g., phone, intranet, e-mail)
- **Input/Output**: represents the direction of process activities and handoffs
- **Document/Report/System Form**: Indicates item created/used in a given process step
The European medicines regulatory network

~ 50 national regulatory authorities  European Commission  European Medicines Agency
What are the major challenges for the future of PhV?

Technology

• Big Data
• Real World Evidence (RWE)
• Clinical registries and electronic health records (EHR)
• Social Media

“Information => Action”

People

• Greater involvement from healthcare professional
• Greater involvement of patients and users

Canedo, 25 years of Pharmacovigilance in Portugal, 2018
What is the strategy?

“Personalised” approach:
• To help us communicate better;
• To stimulate HCP to report ADR;
• To get more expertise to the system;
• To get more research to the system;
• To get the more involved in the Benefit-Risk analysis;
• (...)

“Personalised” approach:
• To help us communicate better;
• To get more feedback from patients;
• To get the more involved in the Benefit-Risk analysis;
• (…)
Make it closer to people (make it more “personal”)

8 Pharmacovigilance Units (and more to come…)

• Get more professionals involved, from different areas and with different backgrounds.
Improve the technology to what the users want
Using a cell phone to report ADRs to Portal RAM

Improve the technology to what the users want
Use the means of communication they prefer

Seniors
b. 1920-1945

Baby Boomers
b. 1946-1965

Gen Xers
b. 1966-1979

Gen Yers
b. 1980-2000

Gen Z
b. 2001-2020

Gen a
b. 2001-2020
Use the means of communication they prefer

Inquiry to HCP on their preferences for receiving medicine safety information (with the cooperation of the Professional Associations)
Algorithms can be your friends for a personalized approach strategy.

They help identify patients of interest and they save time for other tasks.

We are studying and testing algorithms and software to:

- Identify patients more at risk of experiencing an ADR;
- Help with MedDRA coding (“Natural Language Software”), improving the quality of the case coding;
- Using Bayesian networks (PhV Porto) to help causality assessment.
To predict and prevent ADR

- Create awareness on the importance of getting a good clinical anamnesis in order to identify patients at risk of an ADR:
  - Every risk communication to HCP by the Pharmacovigilance department clearly identifies the clinical conditions that put the patient most at risk.

Circular Informativa

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Assunto: **Metamizol e risco de agranulocitose**  
Para: **Divulgação geral**

Estes medicamentos não devem ser utilizados em doentes com reações hematológicas prévias ao metamizol, em tratamento com imunossupressores ou outros medicamentos que possam causar agranulocitose. Deve ser tida particular atenção à prescrição destes medicamentos em doentes idosos.

- Patients that experienced previous hematological reactions to metamizol;
- Patients treated with immunosuppressants;
- Elderly patients
To predict and prevent ADR

PREPARE STUDY
(PREemptive Testing for Preventive Adverse Drug Reactions)

Objective:
To investigate a pre-emptive genotyping approach of a panel of PGx variants covering 13 important pharmacogenes as a new model of personalized medicine.

Design:
Open randomized cross-over trial in 7 countries including 8,000 patients.

Outcomes:
Primary Clinical outcome
Secondary Process indicators for implementation
Cost-effectiveness
Patient reported outcomes
To predict and prevent ADR

Pilot project: RAM - predict - Methodology

**Pharmacovigilance Department:**
ADR assessment:
- Seriousness criteria
- Multiple ADR history
- “Clinically interesting for pharmacogenetic testing”

**Medical doctor**
- Clinical assessment of ADR

**ADR Patient (adults)**

**Pharmacogenetics Medical Appointment:**
(imunologist/ internal medicine/ clinical pharmacology):
- Informed consent
- Structured clinical assessment
- Coded patient (“blinded”)
- Biological sample collection

**INSA – Genetics Lab**
- Sample processing;
- “Pharmacogenes” panel of clinical relevance for ADR
- Pharmacogenetics report;
- Data base.

**INSA/INFARMED:**
- Global analysis (including cost-benefit analysis)
- Recommendations for future actions
Take Home Messages

• In these new (and exciting) times of (massive) technology and science outbreaks, we need to design clever **strategies** that help us select efficient and effective ways of getting to each professional/patient.

• **New science outcomes and technologies** are welcomed for a more personalised pharmacovigilance system.

• However, not all in personalised medicine is about the “new”: sometimes it’s just about **tailoring an old suit to make it fit better**!
Thank you for your attention.
Danke Schön
OBRIGADO!

Infarmed 25+
Autoridade Nacional do Medicamento
e Produtos de Saúde, I.P.