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H2020 Research and Innovation

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Comment:

Introduction

A summer school offers the potential to learn during the time of summer vacation. Thereby, the summer school creates a surrounding to learn with a group of young colleagues from different countries who are usually working in similar healthcare surroundings in a similar stage in career.

As training within the U-PGx project often needs to be done electronically like with e-learning programmes that was provided by WP6 (D6.1), participants might benefit from a a personal exchange with colleagues from many different countries and share common learning experience and get in contact with other people interested in pharmacogenomics.

We aimed to develop a summer school that would bring interested people in contact and to learn more about pharmacogenomics. As the U-PGx project is an implementation project, we entitled the U-PGx Summer School "Towards Pharmacogenomics into Clinic", to focus on the use, on how to apply pharmacogenomics in patient care. Therefore we aimed to offer a mixture on talks by international experts and hands-on tutorials to deepen and to transfer the knowledge into clinical decision making in patient cases.

To support the potential of exchange within the group, we tried have participants from U-PGx study centres as well as other interested participants working in similar surroundings for implementation in the clinic but not associated with U-PGx in any way.

Because the summer school should meet the needs for use and application of pharmacogenomics in patient care, we sighted not just students as participants but also young health care professionals.

Results

The U-PGx summer school "Towards Pharmacogenomics in Clinic" took place at WP6, the Federal Institute for Drugs and Medical Devices in Bonn (Germany) from August 20 to 23, 2018. In total, 49 participants from 8 different countries (UK, Netherlands, Germany, Slovenia, Greece, Italy, Portugal, and Canada) attended the U-PGx summer school. Half of the group (25 persons), were associated with U-PGx study centres. Participants were students, researchers (such as PhD students and young post Docs), medical doctors, and pharmacists.

Nine speakers from 7 different countries (UK, Netherlands, Germany, Slovenia, Greece, Italy, and Israel), mainly working within U-PGx were presenting talks within the summer school programme.

Taking into account the heterogeneity of backgrounds, working experience and backgrounds, the summer school started on day one (August 20, 2018) to bring the participants on a similar level. Therefore, a talk on "Important pharmacogenetic influences on drug action and clinical implication (HLA genes and transporters)" was held by Dr. Evangelina Tsermpini from the University of Patras. This talk was followed by one by Prof. Julia Stingl (WP6) on "Important pharmacogenetic influences on drug action and clinical implication (phase I and II enzymes)".

Pictures: Dr. Evangelina Tsermpini, Prof. Julia Stingl giving talks at the summer school

After the basis was laid on day one, the next day (day two, August 21, 2018) started with a talk provided by Dr. Richard Turner from the University of Liverpool (UK) on "Basic concepts of pharmacogenetic guided therapy". This talk was followed by a tutorial held by Dr. Katja Just and Dr. Richard Turner "Whom to genotype". Participants needed to draw lots to mix and group into groups of five to six participants. They get three patient cases where they needed to decide whether they would recommend a pharmacogenetic test for that case or not. Within the tutorial groups were working on their own for one hour, supported by the tutors. Successively, in the next 30 minutes, all decisions and ideas on the cases were discussed within the whole group and summarized.

Pictures: Dr. Richard Turner and group discussion

To introduce on available methods of genotyping and to understand the use, the advantages and the boarders of techniques, Prof. Vita Dolzan from the University of Ljubljana (Slovenia) was giving a talk "From pharmacogenetics to pharmacogenomics". For introducing the participants to available databases for generating clinical relevant knowledge on pharmacogenomics, Prof. Dr. Jesse Swen was giving the talk ("Introduction on available databases for clinical information on pharmacogenetics"). Within the talk, a live connection to Rachel Hubbart from the pharmGKB website team at the University Stanford in San Francisco (CA, USA) was established and Rachel Hubbart explained the possibilities of working with this website.

Pictures: Prof. Vita Dolzan, Prof. Jesse Swen presenting at the summer school

On day three (August 22, 2018) a talk on "Ethical and legal aspects of pharmacogenetics" was giving by Dr. Leigh Jackson from the University of Exeter (UK). This speaker was provided by WP8 and will be reported separately. This talk was followed by tutorial. Participants were asked to group again like within the last tutorial and get cases on "How to inform patients on genotyping". Therefore, they got different conditions such as a genome project or direct to consumer genotyping.

Pictures: Dr. Leigh Jackson and group discussion at the summer school

After lunch break, this was followed by another tutorial on "How to understand the meaning of a phenotype" that was held by Dr. Katja Just and Prof. Jürgen Brockmöller. Participants needed to decide about the phenotype in conditions were genotyping results were given, also with inducing or inhibiting co-medication or other scenarios that may impact the resulting phenotype. This was followed by a talk given by Prof. Jürgen Brockmöller from the University of Göttingen (Germany) on "Clinical impact of polymorphic organic anion and cation transporters".

Pictures: Group discussion and Prof. Jürgen Brockmöller at the summer school

The last day of the U-PGx summer school started with a talk by Prof. David Gurwitz from Tel Aviv University (Israel) on "The role of CYP2D6 polymorphism" also covering development of pharmacogenetics. This talk was followed by a talk introducing clinical experience and focusing on pharmacogenetics in cancer treatment given by Dr. Erika Cecchin from Centro Riferimento Oncologico di Aviano (Italy) titled "Clinical use of pharmacogenetics guided therapy". The scientific programme of the U-PGx summer school ended with another tutorial held by Dr. Katja Just and Prof. Julia Stingl on "What to do", where participants needed to decide within the small groups on if and how to adjust treatment according to pharmacogenetic test results.

Pictures: Prof. David Gurwitz, Dr. Erika Cecchin giving talks at the summer school

We asked the participants of the U-PGx summer school for evaluation. The response rate was 93.5%. Responders had a mean age of 31.8 years (SD 7.8). 27.1% were male and 65.1% were female. 18.6% were students, 32.6% worked in research, 16.3% were medical doctors, and 27.9% were pharmacists. Of responders, 20.9% had no working experience, 46.5% had between 1 and 5 years of working experience, and 11.6% replied to work since more than 6 years.

Participants were asked to rank the following sentences on a scale from 1 (disagree), to 4 (agree). Below the mean (SD) on agreement to the sentences is depicted.

My expectations on the summer school were met:	3.8 (SD 0.4)
I learned new things during the summer school:	3.7 (SD 0.5)
The content of the summer school was of relevance for use in clinic:	3.6 (SD 0.5)
I would have been able to learn the same in the same time on my own:	2.0 (SD 0.9)
During the summer school there was enough time for discussion:	3.8 (SD 0.4)
The presentations were of good quality:	3.6 (SD 0.5)
It has been worthwhile taking part in the summer school:	3.8 (SD 0.4)
Pharmacogenomics is relevant to my current practice:	3.4 (SD 0.9)

In addition, 81.4% of participants used the possibility to answer as free text, what they liked mostly at the summer school. In contrast, only 23.3% of participants felt the need to write in the free text what they disliked mostly. 41.9% used the possibility to write further comments in a free text field.

Table: Examples of free text of the evaluation by participants

liked	"Nice atmosphere, very good organisation, very nice to hear & helpful about different countries situation on PGx. Nice to make new contacts and to get inspired to learn more about PGx."
liked	"I really enjoyed all talks but mostly the tutorials were very interesting and taught me a lot."
liked	"I liked the fact that only in a week (less than a week), the summer school allows the participants to understand better different aspects of PGx, taking into account different points of view. It's interesting sharing ideas with people with different background."
liked	"Very interesting topic. The examples and the content of all lectures were very good. The tutorials helped to get a deeper view and to hear other opinions of the audience."
disliked	"Lectures shorter."
disliked	"Nothing. All good."
comment	"Short webinars/ e-learning videos could be made available before the meeting."
comment	"Please organise it again."
comment	"It might be nice to get an overview at the beginning of the differences between the countries."

Summary/Conclusions

The U-PGx summer school was bringing together students and young health care professionals from different countries. The participants enjoyed very much the mixture of talks and tutorials given by experts at the field and emphasized the excellent quality of speakers and the practical manner of the group discussions. Participants got into contact and got motivated by this exchange. As participants were asking for an alumni and possibility to follow-up on their success of implementation, we are currently working on possibilities.