to the histamine H1 receptor antagonists, Loratadine has become widely used. It is known that from its side effects there may be liver function abnormalities in clinical patients.

Aim of the study is the experimental research of the Loratadine and its combination with Bupleurum aureum dry extract effect on the liver functional state, which is the xenobiotic metabolism center, of immature rats.

Materials and methods. The study of the long-term Loratadine monotherapy effect at a dose of 0.15 mg/kg, the equivalent of which is the therapeutic maximum daily dose for the child, and its combination with Bupleurum aureum dry extract, obtained by aqueous extraction (BAAE), at a dose of 10 mg/kg, on the liver functional state for blood biochemical parameters was conducted out on immature (at the age of a month) rats (60-100 g).

Results and discussion. The data obtained indicate that the course administration of Loratadine at a dose of 0.15 mg/kg led to a significant change in the serum biochemical parameters relative to the intact control group (IC). There were found the increased activity of cytolysis marker enzymes, ALT by 60.3% ($p<0.05$) and AST by 44.4% ($p<0.05$), increase in the cholesterol content by 70.8% ($p<0.05$), in urea content by 57.7% ($p<0.05$), in bilirubin content by 80% ($p<0.05$), in average molecules pool (AM) by 22.7% ($p<0,05$), the increase in the alkaline phosphatase (LF) activity by 62.9% ($p<0.05$) relative to the IC, which indicates a defect in the liver detoxification function. The use of BAAE at a dose of 10 mg/kg in combination with Loratadine at a dose of 0.15 mg/kg contributed to maintenance of blood serum values (ALT, AST, AP, cholesterol, urea, glucose, bilirubin, AM) within the normal range ($p<0.05$). As to activity on metabolic and cytolytic processes, the reference drugs Quercetin and Silibor were inferior to BAAE.

Conclusions. In accordance to the results of pharmacological research, the utility of the Loratadine combined use at a dose of 0.15 mg/kg with BAAE at a dose of 10 mg/kg, which has demonstrated a hepatoprotective effect, was experimentally proved. The approach allows to optimize a proper antihistamine therapy.

GENETIC STUDIES, THE POSSIBILITY OF USING IN THE PRACTICE OF MEDICINE AND PHARMACY

Mouad Baba Ahmed, Ekaterina Luchko
Scientific supervisor: prof. Olga Filiptsova
National University of Pharmacy, Kharkiv, Ukraine
Mouadbabaahmed@gmail.com

Introduction. In past pharmaceutical innovation was purely based upon organic synthetic chemistry, followed by random screening of "small molecule" medicines. While it was successful in the 50s and 60s, it drastically slowed down right after, forcing the creation a series of biological and genetic-based technologies in the 70s, up until recently, when the steady growth of approved drugs has suddenly plummeted yet again, to open up the path for genomics, and along with it great and ambitious promises In the therapeutic and commercial department, which led all the major pharmacompanies and fully commit to genomics, as of now, more than 450 genomics firms are currently in the US and Europe, which shows that most have abandoned the chemistry based drug development. Most would argue that the integration of genomics will dramatically improve the efficiency of the drug discovery and development process and will lead to better drugs and improved healthcare. Which makes it vital to understand what may be one of the most important shifts in the development of the modern pharmaceutical industry. Until now, very little social research has been done concerning this

Aim. In this thesis, we will be introducing the concept of pharmacogenetics and pharmacogenomics, as well as highlighting its potential in the medical and pharmaceutical domain, we will also briefly mention some of the constraints and ethical and societal impacts that might face the advancement of this fairly new and developing branch of science.

Materials and methods. Before we get to how genetics can help us move forward in the field of pharmaceuticals, we have to familiarize ourselves with two very important terms in this domain: pharmacogenetics and pharmacogenomics. Pharmacogenetics is phenotype related, meaning that it

studies the interaction of a given drug with an individual's characteristic (mostly inborn traits) and therefor determine its efficacy and safety based on those results, while pharmacogenomics focuses on how several drugs interact with a wide variety of genomes (expressed and non-expressed), therefore determining their efficacy based on the modification they have on the gene's expression pattern. So while both branches aspire to reach the same goal (coming up with the optimal medicine based on specific data), the approach they take is substantial.

Results and discussion. Pharmacogenomics: finding medicines faster. Traditionally, in order to get the final product (drug), chemist come up with different lead compounds, which are then tested in a number of animals or cell models in order to identify the optimal compound for human use, this. While this method of drug testing will likely never be entirely replaced by expression profiling, the new method will allow us to determine the drug action much faster and will likely provide us with extra information that might be needed in future drug discovery projects, and even help us discover new molecules based on the complex pattern of expression changes. As a good initial sign, toxicogenomics, which is a subcategory of the pharmacogenomic approach. Has already provided the science field with an impressive database from experiments with known toxicants, those experiments revealed expression patterns that most likely will be needed in the elimination of long term toxic compound, making the process of preliminary compound selection a much easier and faster task, which will ultimately speed up the process of creating new drugs. Pharmacogenetics: a more effective and targeted medicine for our patients as much as pharmaceutical industry has made great progress compared to 15 or 20 years ago, cases where patients have partial or no response to a prescribed drugs are more common than not, in some serious cases, they could even suffer from adverse effects and to allow ourselves to move forward, if we have to accept that health problems are a result of complex interactions between inborn and external and factors, then we could already be halfway through to the endgame, and by incorporating the genetic properties as well as the environmental variables surrounding an individual, we can pitch them into a narrow therapeutic window, allowing him to benefit of a more precise prescription (drug and dosage) that can highly improve the chances of a better response this phenomenon is covered by the term pharmacogenetics.

Conclusions. As mentioned in the introduction, trying to assess the future development of new technologies is a demanding and problematic endeavor. This is due to the wide range of factors that determine success and the high levels of technical, commercial, clinical and regulatory uncertainty that often mark early medical innovation. Because of this, previous work on technological forecasting has established that it is very difficult to assess accurately the prospects for an emerging technology much more than three years into the future. The best that can realistically be achieved is a crude assessment of which technologies are currently being successfully developed and used in the clinic, which ones may be adopted in the medium term (3-5 years) and which ones are unlikely to enter widespread usage in the next five years.

DOWN SYNDROME IN RELATION TO GENETICS

Sowunmi O. D., Luchko E., Naboka O.
Scientific supervisor: prof. Filiptsova.O.V.
National University of Pharmacy, Kharkiv, Ukraine
ekaterina_luchko86@ukr.net

Introduction. Down syndrome is a genetic disorder arising from a chromosome defect, causing intellectual defects and physical abnormalities including small head and tilted eyelids. It involves an extra chromosome 21, either a separate chromosome or a translocation onto another chromosome.

Aim. The aim of the study is to look at various genetic facts and statistics of Down syndrome. Researches have also been made about these disorders that are quite interesting. Down syndrome can be classified into 3; trisomy 21, translocation and mosaicism. Trisomy 21is the most common type of Down syndrome, it occurs when there are three, rather than two, number 21 chromosomes present in every cell of the body.