All pregnant drug addicts have been infected with HIV by the parenteral route, in the comparison group in 81,8% of cases were sexual transmission and 18,2% of women could not definitely indicate the route of infection. 66,7% of drug addicts the experience of HIV is 1–5 years, and 72,7% of pregnant women without addiction the diagnosis of HIV infection was confirmed only during this pregnancy. Remission of drug dependence in the anamnesis was observed only among women married to men without drug dependence (r=0,62; p=0,036), possibly in connection with the support and positive influence from the spouse and family. 44,4% of drug-addicted HIV-infected pregnant women spontaneously refused from taking drugs during pregnancy, 11,1% — from an early time and at the time of the survey and testing the addictive behavior was not observed. For 77,8% of the drug addicts pregnancy is wanted. At the same time in the control group 18,2% of women admitted that the pregnancy became desirable only after the appearance of objective signs of pregnancy (fetal movements, ultrasounds).

Personal and psychological characteristics of drug-addicted HIV-infected pregnant women was characterized by a moderately pronounced disturbing radical (77,8%). A high measure of trait anxiety was observed in every fifth pregnant (22,2%, p<0,001). The level of trait anxiety was significantly lower in drug-addicted women who use drugs during pregnancy (r=-0,71; p=0,017). In the comparison group identified more than 59% of pregnant women with severe anxiety radical (p<0,001), however the average significant differences in comparison with drug-addicts had not. Indicator reactive (situational) anxiety in a group of drug addicts 55,6% was moderate, and in 33,3% (p<0,001) of cases was low, which was probably due to the low cognitive level assessment. These data are reliable the correlation between the index of reactive anxiety and level of education (r=-0,66; p=0,027) and can, obviously, be determined directly by the addiction. Among women from the comparison group in 30% of cases the level of situational anxiety was high (36,4%, p<0,001), but was mainly characterized by a moderate degree of severity.

The obtained data of activity of indicators of psychological defense «projection», «compensation», «negation» and «substitution» indirectly indicate the trend in drug-addicted women to extrapunitive response with removing the blame from herself. It should be noted that a number of indicators of psychological defense drug addicts have reliably correlated with patterns of drug, experience of drug addiction and drug use while in the hospital and testing: «projection» — r=0,64, p=0,031 inch; «substitution» — r=0,59, p=0,049; «overcompensation» (or «reactive formation») — r=0,86, p=0,002. In the group of pregnant women without addiction the most intense there was a mechanism of psychological protection «denying», in this group is it correlated with attitudes of spouse/sexual partner about pregnancy (r=-0,61; p=0,04) and level of education women (r=-0,61; p=0,04); and «displacement» related to the attitude of the woman to the pregnancy (r=-0,61; p=0,04). Constructive emotional coping strategy according to the type of «optimization» is more than half of surveyed drug addicts (55,6%), which is known for persons with addiction and therefore does not have the opportunity to consider this option as a constructive coping coping behavior. At a cognitive level and behavioral continues to be the most typical for drug addicted patients with non-constructive coping-strategy «ignoring» and «active avoidance» of the problem, promote further drug use.

In the comparison group on the emotional level prevails constructive coping strategy of «optimism» (63,6%), however, there are also ineffective as such «self-blame» (9,1%) and «aggressiveness» (9,1%), which is obviously connected with sexually transmitted HIV in this group. Noted in the behavioral sphere, 27,3% of surveyed «cooperation» and «treatment» give hope to the possibility of timely medical and psychological care to these patients.

Conclusions. Psychoemotional background in drug addicts are associated with derealization caused by taking drugs and the presence of a characteristic for persons with addiction behavior on the principle of «optimization», which can be considered as favorable, since focused on the possibility to avoid the problem. Tensions psychological protection shows the relevance of the process of mental adaptation. Assessment of emotional status showed a significant association with many indicators of addictive behavior, making the need for a differentiated approach to the management of HIV-infected pregnant women depending on the presence or absence of drug.

Strategies of the computer-aided design of HIV-1 reverse transcriptase inhibitors

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Millions of people are currently living with human immunodeficiency virus type 1 (HIV-1), which causes acquired immunodeficiency syndrome. Despite several protocols of the HIV/AIDS treatment currently exist, to find an effective treatment for HIV-1 infection is still a great challenge.

HIV reverse transcriptase is one of the key viral targets for HIV-1 inhibition.

Large-scale databases and scientific publications are important sources of training sets for various quantitative structure-activity relationship (QSAR) modeling approac-

hes. This variety of sources can produce inconsistency in the data, defined as diverging activity results for the same compound against the same target. Because such inconsistency can reduce the accuracy of predictive models built from these data, we are addressing the two questions (i) how best to use data from publicly and commercially accessible databases to create accurate and predictive QSAR models; (ii) how the data from different sources (including databases as well as the scientific publications) might be mixed and matched.

Earlier we have investigated the suitability of commercially and publicly available databases to QSAR modeling of antiviral activity (HIV-1 reverse transcriptase (RT) inhibition). We presented several methods for the creation of modeling (i.e., training and test) sets from two, either commercially or freely available, databases: Thomson Reuters Integrity and ChEMBL. We found that the performances of QSAR models obtained using these different modeling set compilation methods differ significantly from each other. The best results were obtained using training sets compiled for compounds tested using only one method and material (i.e., a spec ific type of biological assay performed using specific biological material). Compound sets aggregated by target only typically yielded poorly predictive models. We discussed the possibility of «mix-and-matching» assay data across aggregating databases such as ChEMBL and Integrity and their current severe limitations for this purpose. One of them is the general lack of complete and semantic/computer-parsable descriptions of assay methodology carried by the databases of these two investigated biologically active compounds that would allow one to determine mix-and-matchability of result sets at the assay level.

Currently we develop an approach to estimate the similarity of the experimental protocols using the descriptions extracted from the scientific publications based on the text-mining. We believe, such an approach allows to create homogenous data sets for the creation of the accurate and predictive (Q)SAR models of RT inhibition, which can be further used for the design of the new HIV-1 antiretroviral chemicals and drugs.

Novel nonnucleoside inhibitors of HIV-1 reverse transcriptase inhibitors based on substituted pyrimidines

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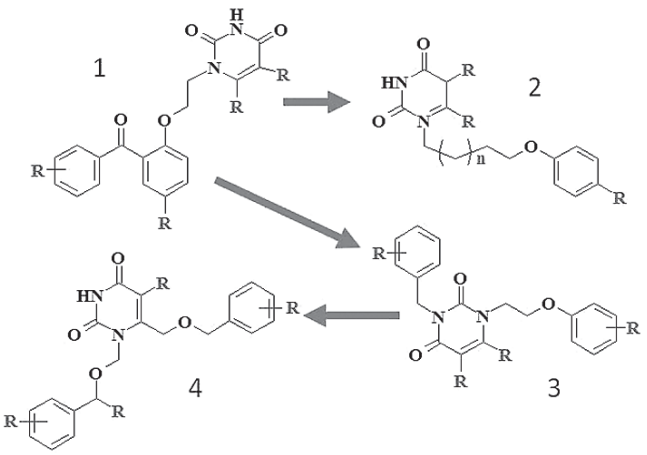
To this moment, the fact that more than 30 anti-HIV drugs were approved by FDA leads to the personification of HAART for each patient. However drug resistance is still a huge problem due to HIV high variability. Some combinations of drug-resistant mutations can make a whole class of anti-HIV drugs completely ineffective and this stimulates a search for new antiretroviral compounds. NNRTIs are a prime example of a struggle between scientific society versus drug resistance. Discovery of the second generation of NNRTIs (ETV, RPV) made possible to efficiently inhibit viral replication in case of patients with a full resistance to NVP, DLV and EFV that are usually used in the first line of HAART drug combinations.

This study was focused on a development of highly effective NNRTIs based on substituted pyrimidines. Rational drug design allows to find some new classes of compounds with high antiretroviral activity and genetic barrier to drug resistance. New highly active compounds with a benzophenone moiety (1) were obtained using the molecular hybridization paradigm. Rational drug design based on a structure-activity relationship improved IC_{50} against a wild type reverse transcriptase (WT RT) of HIV to submicromolar values (the best was 86 nM) and a study of the inhibitory activity of compounds highly active against WT RT on a panel of drug-resistant mutants of RT led to identification of lead compounds with high genetic barrier against drug resistance. Along with the development of these compounds during this study some more classes of pyrimidine-based NNRTIs were found. Compounds with IC_{50}<1μM were identified within classes of N1 (**2**), N1-N3 (**3**) and N1-C6 (**4**) substituted pyrimidines.



The search of informative biomarkers for early immunological diagnosis of tuberculosis in patients with HIV Infection.

HIV is a major cause of dilated cardiomyopathy

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Human immunodeficiency virus (HIV) disease is recognized as an important cause of dilated cardiomyopathy also