In the sample of Tatars with paranoid schizophrenia, the rs6280*G allele was significantly more frequent, at 45.83%, compared to the controls at 36.86% (p=0.024, OR=1.45 CI95% 1.06-1.99). In Tatars with a continuous type of PSz, the frequency of the rs6280*S/G genotype was significantly higher (p=0.033, OR=1.8 CI 95% 1.06-3.07) than in the controls. The frequency distribution of genotypes and alleles in Tatars with episodic type of paranoid schizophrenia and in the control group of individuals was similar.

The results obtained by us agree with the data of studies of this polymorphic locus in other populations. The association of SNP rs6280 of the DRD3 gene was detected in Europeans (allele rs6280*G) (Vehof et al. 2012). The absence of association of SNP rs6280 of the DRD3 gene with the development of PSz in Russians confirms the interethnic differences in the susceptibility to the development of multifactorial diseases and is consistent with the results of a number of studies that also do not establish the role of this SNP in the development of schizophrenia in European (Paweł et al. 2010) and in Asian populations (Tee et al. 2011).

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PROTEIN AGGREGATION AND INSOLUBILITY AS A BIOLOGICAL COMPONENT OF CHRONIC MENTAL ILLNESS

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Major mental illnesses such as schizophrenia and chronic depression are acknowledged to have biological underpinnings, however intense analysis has demonstrated their genetic background to be extremely complex, with very few obvious targets for future therapeutic approaches. Major neurodegenerative conditions, such as Alzheimer's disease, Parkinson's disease or amyotrophic lateral sclerosis, also have complex genetic backgrounds, but can nevertheless be characterised by the presence of insoluble aggregates of a very few specific proteins in the brain. These proteins are often toxic, and contribute to the worsening of patients' symptoms with time. Taking inspiration from this, we and others have begun investigating the existence of similar protein aggregates in the brains of patients with chronic mental illnesses.

Through biochemical approaches based on isolating the insoluble protein fractions of patient brain samples, five proteins have now been identified with the potential to form aggregates in major mental illness. Three of these (DISC1, dysbindin-1 and NPAS3) were investigated as they are encoded for by previously described genetic risk factors. The remaining two (CRMP1 and TRIOBP-1) were identified through hypothesis-free proteomics approaches, and represent proteins which had not been previously associated with mental illness. All five have the potential to form aggregates in the brain of schizophrenia patients, with some also been implicated in this way in bipolar disorder and major depression.

We are now embarking on a comprehensive program to characterise these five proteins and the role in which their aggregation plays in major mental illness. This will occur principally at the cell biology level: determining the mechanisms through which aggregates form and their consequences on neuronal development and function. A particular focus will be on interactions between the proteins, and the extent to which aggregation of one protein can affect the aggregation propensity of the others. In parallel, the five proteins will be studied in the blood of patients with schizophrenia, in order to determine their viability as diagnostic markers.

A major hurdle in the development of biological diagnoses and rational therapeutics for major mental illness is the lack of well-characterised molecular targets, a direct effect of their genetic complexity. By bypassing genes and instead focussing on downstream proteins, it is hoped that the development of such new techniques can be greatly accelerated.

AGREGACIJA PROTEINA I NJIHOVA NETOPLJIVOST KAO BIOLOŠKA OSNOVA KRONIČNIH MENTALNIH BOLESTI

Dobro je poznato da duševni (mentalni) poremećaji poput shizofrenije i depresije imaju biološku osnovu, međutim intenzivna istraživanja pokazala su da je njihova genetska osnova izrazito složena s tek nekoliko jasnih meta buduće terapije. Većina neurodegenerativnih stanja kao što su Alzheimerova bolest, Parkinsonova bolest ili amiotrofična lateralna skleroza, također imaju složenu genetsku podlogu, ali ih također karakterizira i prisutnost netopljivih agregata nekoliko specifičnih proteina u mozgu. Ti netopljivi proteini su uglavnom toksični i pridonose pogoršanju bolesnikovih simptoma kako sama bolest napreduje. Potaknuti tim podacima odlučili smo se kao i neki drugi autori započeti istraživanja prisutnosti sličnih proteinskih agregata u mozgu bolesnika s kroničnim mentalnim poremećajima.

Biokemijskim postupcima temeljenim na izolaciji netopljivih proteinskih frakcija iz uzoraka mozga bolesnika, do sada je identificirano pet proteina s mogućnošću stvaranja agregata kod glavnih mentalnih poremećaja. Proteini DISC1, dysbindin-1 i NPAS3 istraživani su jer su prepoznati kao genetski kodirani čimbenici rizika. Preostala dva proteina, CRMP1 i TRIOBP-1 identificirani su proteomskim metodama probira proteina i predstavljaju proteine koji nisu ranije bili povezani s mentalnim poremećajima. Svih pet proteina imaju potencijal k stvaranju agregata u mozgu oboljelih od shizofrenije a pojedini od njih su također bili povezani sa bipolarnim poremećajem i depresijom.

Cilj je projekta okarakterizirati tih pet proteina i definirati ulogu njihove agregacije u glavnim mentalnim poremećajima. Istraživanja će se prvenstveno odvijati na nivou stanice: određivanjem mehanizama kojima nastaju agregati i njihovog utjecaja na razvoj i funkciju neurona. Poseban naglasak biti će stavljen na interakciju proteina i u kojoj mjeri agregacija jednog proteina utječe na sklonost agregaciji drugih proteina. Istovremeno, svih pet proteina proučavati će se u krvi pacijenata oboljelih od shizofrenije, kako bi se utvrdila mogućnost njihove primjene kao dijagnostičkog markera.

Glavna zapreka u razvoju biološke dijagnoze i terapueutika za glavne mentalne bolesti temeljenih na racionalnom pristupu nedostatak je dobro okarakteriziranih molekularnih meta, što je posljedica genetske složenosti. Zaobilaženjem analize gena i fokusiranjem na proteinske produkte gena nadamo se da ćemo ubrzati razvoj dijagnostičkih markera.

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(NON)EFFECTIVENESS OF RELIGIOUS EDUCATION IN PREVENTING HIGH SCHOOL STUDENTS IN GAMES OF CHANCE

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One of the most serious problems we face today in society and in religious communities is the problem of addiction. It is not uncommon to come across a person who has become a victim of drug abuse, excessive alcohol consumption, smoking, excessive use of tranquillizers, and lately there is an increasing number of those who have become addicted to games of chance. Children and young people are not excluded from these problems. The problem of juvenile gambling is not only the problem of juveniles and high school students, but also the problem that concerns families, schools, local community and religious communities.

In the encounter with such people the inevitable question is - what kind of attitude is appropriate for these people? Let them to continue to "drown" in these and such weaknesses and, at the same time, to try to convince ourselves that nothing can be done for them anymore? What can and should be done to help them become aware of the problem and help them get out of the maze? How to morally and ethically evaluate their actions? Can they be simply proclaimed as common human weaknesses that do not require any intervention? Or is it necessary to evaluate such practices in accordance with the ethical-moral norms by which their perpetrator should be accountable and bear some responsibility? Can the religious education in elementary and secondary schools contribute to the prevention and suppression of games of chance among juveniles?

A survey of over 300 students of Roman-Catholic religious studies was conducted in one four - year high school in Primorsko-goranska county and gave the following results. 84% of survey participants live in families with both parents, brothers and sisters, while 16% live in single-parent families. Of the total number, 55% live in the city, 38% in small towns, and 7% in villages. Out of all participants, 52% regularly play one of the games of chance. Most of them (52%) started this practice in elementary school, while 48%