

Virus Etiology of Schizophrenia: The Characteristics of the »Little Ice Age« and its Consequences

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ABSTRACT

The data of the »Little Ice Age« (1500–1850) in Croatia and those which applied to human health were especially emphasized were analyzed. They are some which stand out like: importance of the sort of soil and relief, the influence of cutting down of woods and cattle-breeding and especially the war which lasted for 250 years in the territory of Croatia. The important interactions between those parameters were defined. The important correlations were also defined between freezing and long winters as well as wet springs and summers which caused starvation, malnutrition and the increase of infant mortality and also epidemics with enormous psychological stress among people in that period. The result was witch-hunting and burning (which was also advocated in the other parts of Europe) and they sometimes reached the levels of madness. Considering that such events were unknown in the earlier periods (in such proportions) and that (even today) the influence of the slow virus is emphasized in connection to the etiology of schizophrenia so why shouldn't it be supposed that the »Little Ice Age« could be the cause of the larger prevalence of schizophrenia in the territory of Croatia.

Key words: schizophrenia, slow virus, »Little Ice Age«, Croatia

Introduction

In the world of the professional psychiatry, Croatia (especially some of its regions) is considered to be characterized by a greater prevalence of schizophrenia. In the analysis of schizophrenia a lot of data is usually taken into consideration. In order to formulate a meaningful conclusion the data is usually interpreted in a few ways: 1. intuitive, which is based on the skill of the examination of a psychiatrist himself/that is a strictly individual approach; 2. partially scientific approach is based on scientifically verified information (biochemistry, psychophysiology, pathologic anatomy, anthropology etc.) – this approach doesn't satisfy the principle of completeness, because it analyses the phenomena only partially and it is only the basis of the formulation of valid theories; 3. scientific approach which tends to group data on one of the scientific theories, i.e. to formulate a logical coherent system.

Problem and Aim

In psychiatry, in general, and in the Croatian psychiatry, to our days there hasn't been a scientifically, general, logically coherent, predicative and operative theory. There

are a lot of theories which partially include the phenomena of schizophrenia and which differ according to the elements which they emphasize. So, there are biologic, psychodynamic and sociodynamic theories. Because of the heterogeneity of schizophrenia psychiatrists are often forced to reach for, i.e. to use non-medical theories. In those circumstances the psychiatry of schizophrenia is the closest to psychological theories because they emphasized the individual with all of the characteristics and states. Psychological theories accept the factors of surrounding but they don't attach so much importance to them as sociological theories. Sociological theories, however, fundamentally completely neglect the individual. In the other hand schizophrenia is, in fact, a biopathologic process. So, it can justly be explained by biologic theories. This doesn't mean that psychology and sociology have nothing to do in this domain. Vice versa: sociological and psychological indicators can support the biological process and this is why biologic theories should include them in their explanations. The main aim of this study is to try to conceive the position of schizophrenia from the point of view of one of the biologic theories. The aim of the study is also to induce

psychiatrists to use adequate biologic theories of the origin of schizophrenia and to contribute to the integration of different but mutually interferential disciplines i.e. professions (psychology, sociology, geography, history).

The Review of Biologic Theories

There is a large number of biologic theories which cover various phenomena of schizophrenia. On the other hand there isn't a general biologic theory of schizophrenia, but there is a sequence of mutually complementary models. The presumptions of the biologic origin of schizophrenia are: 1. structural and neuropathological changes, 2. the asymmetry of cerebral hemispheres and interhemispheric disintegration, 3. heredodegenerative factors, 4. reflexologic hypothesis, 5. genetic predisposition, 6. The hypothesis of biochemical origin (the intoxication with Taraxein), 7. auto-immune disorder, 8. slow virus, 9. biotypical condition, 10. disturbance in endocrine system¹.

The above mentioned theories are (for economic and didactic reasons) displayed only nominally. One of them should be considered separately because of the aim of this study and because of its influence on the development of schizophrenia in Croatia although it hasn't been considered and studied enough. It is the theory of slow virus.

Slow Virus Theory

The hypothesis of a possible etiology of schizophrenia has been mentioned since 1918. In that year a certain number of patients, suffering from lethargic epidemic encephalitis, were showing some schizophrenic symptoms¹. Today lots of arguments are being mentioned on behalf of virological etiology of schizophrenia: a greater frequency of schizophrenic patients born in winter when virological infections are the most frequent, a higher level of antibodies against citomegalovirus, apparently about one of third of schizophrenic patients cytopathic effects of cerebrospinal liquid in schizophrenic patients in human embryonic fibroblastic cultures – with the absence of the effect when the liquor is squeezed through the filter of extremely tiny spores and others¹. During the last years the hypothesis of virological etiology has frequently connected with genetic causes of schizophrenia. Researchers have identified sequences of nucleotides identical with sequences of retroviruses; the so called endogenous retro – virus sequence (HERV) incorporates itself into the genetic basis and in that way it functions pathologically².

The »Little Ice Age« in the Region of Croatia

At the beginning of the 16th century entire Europe, together with Croatia, was held by the »Little Ice Age« which lasted for the following three hundred years. It started (little by little) gradually and undiscernibly with periodical rough winters and at the beginning of the 16th century lasting deterioration started in the form of prevalently wet summers and freezing, long winters^{3,4}. The bad

weather caused erosion in Croatia (mainly of the rocky soil, the calcareous basis mainly composed of calcium carbonate – CaCO₃). The main reason was the devastating felling of trees during rough winters (also because of foreign greed for quality Croatian woods) and also because of heavy rain during summer and cattle – breeding. The devastation was supported by a two – hundred – year long period of wars in the region of Croatia. The united and devastating impact of natural disasters and wars could only be similar to the »Thirty – Year – Long War« (1618–1648) in the Middle Europe, but in destruction from Croatia which was, against its will, the battle – field of continuous war from 1463 to 1718. The Turks, for instance, carried out the strategy of burnt land with their invasions with short intervals of about 250 years. The result of those forces was often merciless and cruel starvation and epidemics. They especially affected the autochthonous agricultural population who survived and who mainly depended on their land. They often had to migrate to the regions with different languages, customs, diets etc.³.

The Implications on Mentalities

Starvation, illness, epidemics, death – rates, especially infant – mortality, constant warfare and migrations caused an enormous psychological tension among the majority of the Croatian population and it also reflected itself on mentalities. That's why witch – hunting and burning was advocated and it could have reached the levels of madness. In 1685 the peasants in the region of Zagreb burnt witches on their own free will because they were responsible for crop failure and famine, according to them⁵. In that period almost everywhere in Europe witches were persecuted, hunted and burnt in public thousand witches were burnt in Bern (Switzerland) in the period from 1580 to 1620 and during the French Religious War 1580–1595 about eight hundred witches were burnt only in the region of Lorraine⁶.

Discussion

It should be discussed in what degree the »Little Ice Age« in Europe (1500–1850) could have influenced slow virus and its incorporation into genetic basis and in that way could have caused schizophrenia, too¹. It should also be discussed in what degree starvation, malnutrition, various epidemics as well as long – lasting wars³ (several centuries' long wars) could have influenced the prevalence of schizophrenia. Furthermore, it should be discussed in what degree witch – hunting could have been the indicator of the influence of the »Little Ice Age« on mentalities and in what proportion the rigid actions of the Inquisition (which was constituted before the »Little Ice Age« and lasted until Napoleon's descents in to other parts of Europe) influenced the formation of mentalities^{7–9}.

Finally, it should be discussed in what way the Industrial Revolution took part in all those events – from its influence over the climate to its influence over mentalities¹⁰.

General Conclusions

The »Little Ice Age« which lasted for several centuries in Europe (1500–1850) could have contributed towards the incorporation of slow virus into genetic basis and caused somewhat large prevalence of schizophrenia in some parts of Europe. The appearance of schizophrenia was especially supported in those regions in which starva-

tion, malnutrition and epidemics were accompanied by enormous psychological stress because of long – lasting war devastations and migrations like those in Croatia. Thus, this study is trying to point out that while using adequate biological theories of the etiology of schizophrenia, it is important to apply various interrelated disciplines, i.e. psychology, sociology, geography, history etc.

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VIRUSNA ETIOLOGIJA SHIZOFRENIJE: KARAKTERISTIKE »MALOG LEDENOG DOBA« I NJEGOVE POSLJEDICE

SAŽETAK

Analizom zabilježbi o »malom ledenom dobu« (1500–1850. godine) u hrvatskim krajevima izdvojene su one koje su se odnosile na čovjekovo zdravlje. Pri tom se posebno ističu značaj, vrsta tla i reljef, te utjecaj sječe šuma i stočarenja, a još više dvoipolstoljetno ratovanje na tlu Hrvatske. Utvrđene su značajne interakcije između tih parametara. Ujedno su utvrđene i značajne korelacije između tih parametara i dugih zima, kao i vlažnih proljeća i ljeta, koji su uzrokovali glad, malnutriciju, porast pomora djece kao i epidemije sa enormnim psihološkim stresom među ljudima u tom razdoblju. Poradi toga su zagovarani (kao i u ostalim dijelovima Europe) progoni i spaljivanje vještica, što je mjestimice doseglo razinu sumanutosti. Obzirom da takvog nečega ranije (u tolikoj mjeri) nije bilo poznato, a da se (i danas) u prilog teorije zaraza ističe utjecaj sporig virusa glede etiologije shizofrenije, zašto ne držati da bi i »malo ledeno doba« moglo biti uzrokom nešto veće prevalencije shizofrenije na tlu Hrvatske.