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CONTEMPORARY TRENDS IN BIOLOGICAL PSYCHIATRY

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Abstract
Introduction of psychotropic drugs into the treatment of mental disorders and illnesses was made easier by earlier application of physical treatments (insulin, electro-shock therapy). Proliferation of scientific, technical and technological achievements, in particular by the end of 20th century, was reflected in psychiatry as well, and the brain, inevitably, became a focal point of a more thorough research. In practice, the knowledge of biomedicine became ever more significant in organizing a comprehensive treatment of a mentally disordered patients, but was not, on its own, sufficient to provide high quality treatment results.
Inconceivably fast development of molecular biology, genetics in particular, being the main characteristics of the time we live in, has found its place in psychiatry as well. As a result, there are intensive studies in gene susceptibility, in particular related to affective disorders. The interaction between genes and the environment in Alzheimer disease illustrates all the complexity of human existence in the world.
Key words: biomedical research, molecular biology, psychotropic drugs

Introduction

Mental health is of utmost significance not only for developing countries, to which Bosnia and Herzegovina belongs on the basis of all the criteria. Insufficient knowledge of the etiology and development of mental disorders and illnesses has conditioned appearance of numerous theories and speculations in psychiatry. Different positions in psychiatric consideration evolved in time and took three main directions: biological, psychodynamic and socio-dynamic. However, failing to explain on their own the nature of mental disorders, they were often combined and complemented, thus recognizing the incompetence to provide for a comprehensive explanation of the etiology of mental disorders. In the only possible approach, an integral one, individual trends still maintain basic presuppositions of their theoretical hypotheses. The existence of several "schools" in psychiatry and different models of mental disorders and illnesses have an outstanding impact to the society, influencing the perception of mentally disordered persons and their treatment.

Scientifically based medicine, that started at the turn of the century before the last, had no major impact to psychiatry, although it must be admitted that vitamin-deficiency disorder (pelagra) had already been explained.

The therapy by malaria, in the twenties of the last century, proved that the physical treatment, in some cases at least, could be successful. The introduction of psychotropic drugs into the treatment of mental disorders and diseases was made easier by previous physical treatments (insulin, electro shock and other therapies).

It is worth mentioning at this point, that the great inventions in psychopharmacotehrapy occurred mainly due to the fall of circumstances.

Pharmacotherapy and psychotherapy, the major treatment modalities in psychiatry, have become fragmented from one another, creating an artificial separation of the psychosocial and biological domains in psychiatry. Recent research suggests that combining psychotherapy and pharmacotherapy may have advantages over either treatment alone in certain clinical situations involving specific disorders. From this reason Gabbard and Kay (2001) (5) suggest that future research is needed to clarify the optimal situations for the one-person model of integrated treatment and also propose systematic teaching of integrated treatment in all residency training programs.

Impact scientific, technical and technological achievements on psychiatry

Yet, the biological trend, owe primarily, to the neurosciences and neuropsychology, begins to prevail in more areas in psychiatry with each day, in particular in those areas that did not fall exclusively within their ambit earlier (neurotic disorders. personality disorders, etc.).

New knowledge about integrating mechanisms modulating the transfer of information at the synapses level, through its transmission system, all the way to the information processing, have, to some extent at least, eliminated arbitrary interpretations. Amazing progress has been made in molecular, genetic, anatomical, and pharmacological characterization of dopamine D4 receptors in animal and human brain. Postmortem neuropathological studies have inconsistently linked D4 receptors to psychotic disorders. D4 antagonists, so far, have provided ineffective in treatment of schizophrenia, but testing in a broader range of disorders may yield clinically useful drugs (8).

Significantly larger data in the framework of regulatory systems (neuro endocrine, neuro immune and genetic) are close in providing an answer to the question on physiological mechanisms as a basis in the changed behavior of an individual. Proliferation of scientific, technical and technological achievements, in particular by

the end of 20th century, was reflected in psychiatry as well, and the brain, inevitably, became a focal point of a more thorough research (neuroimaging, neurochemistry, neuroanatomy, etc.) In practice, however, the knowledge of biomedicine became ever more significant in organizing comprehensive treatment of mentally disordered patients, but was not, on its own, sufficient.

Evidence from twin and adoption studies has promoted the importance of gene-environment interaction in the etiology of mental disorders, and advances in molecular genetics have raised hopes of more rapid progress in this field of investigation. The interaction between genes and the environment in Alzheimer disease illustrates best the complexity of human existence. Better definition and classification of environmental hazards, and closer inter-disciplinary cooperation will be necessary in future (2).

Psychiatric disorders have important genetic contributions, but it has been very difficult to identify the responsible genes using human populations. Recent developments in mouse genomics hold considerable promise of providing important insights into the genetics of these diseases (1).

Incredibly fast and qualitative development of molecular genetics, which is the main feature of the time we live in, has found its place in psychiatry as well. There are intensive studies in gene susceptibility, in particular related to affective disorders. However, the results have been only the preliminary ones in the linkage and association studies (link between a disease and markers) (7).

The future of research in the sciences basic to psychiatry has never been more promising how rapidly progress will occur will be a function of the resources society is willing to commit to mental health research (3).

Future research

In fact, future research in psychiatry is continuation scientific projects from the past decade. They can be set in three directions (9):

1. Psychosocial and behavioral factors with detrimental impact on health and development;

2. Setting up of prevention and treatment of mental disorders service, and

3. Biomedical research in mental functioning of the healthy and mentally ill

All three directions included more different tasks:

Ad 1. Psychosocial and behavioral factors with detrimental impact on health and development

- Development of reliable methods in the assessment of quality of life
- Definition and operationalisation of child psychosocial development indicators and development of promotion and support program
- Development of training module on psychosocial and behavioral aspects of health in for students in teacher training schools
- Formulation of health intervention methods based on traditional beliefs of the population, and
- Encouraging psychosocial perspectives in health care services

Ad 2. Setting up of prevention and treatment of mental disorders service

- Introduction of Prevention and treatment of mental disorders service into primary health care
- Developing methods in providing good quality health care to all those suffering from mental disorders
- Assessment and analysis of legislation regulating the treatment and rehabilitation of patients with mental disorders
- Developing support programs for chronic patients, disabled and elderly persons and
- Operational studies supporting the mentioned projects

Ad 3. Biomedical research in mental functioning of the healthy and mentally ill

- Molecular genetics focusing on genetically interesting families in different environments;
- Biological characteristics of receptors involved in mental functions;
- Evaluation of environmental influence on brain functioning and development, and
- Development of new methods in treatment.

In summary, psychiatry enters the new millennium with numerous questions that have already been raised earlier as well (e.g. how do the changes on brain occur with time, what the reliable risk factors in mental disorders incidence, changes on brain during therapy, psychotherapy in particular, etc.). Parallel to the interest of its public health agenda, psychiatry will grow closer to neuroscience, behavioral

science, and neurology. In so doing, those who practice these disciplines will be better positioned to ask meaningful questions about relationship among mind, brain, and behavior (Hyman, SE, 2000).

Consequently, we still wonder, like Leon Eisenberg (2000):"Is psychiatry more mindful or brainier than it was a decade ago?"

Apstrakt

SAVREMENI TRENDOVI U BIOLOŠKOJ PSIHIJATRIJI

Nedovoljno poznavanje nastanka i razvoja duševnih poremećaja i oboljenja uslovilo je pojavu brojnih teorija i spkulacija u psihijatriji. Vremenom su se različiti stavovi u psihijatrijskim razmatranjima uobličili i usmjerili u tri osnovna pravca: biološki, psihodinamski i sociodinamski. Nedovoljni, sami da objasne prirodu psihičkog poremećeja, često su se kombinovali i dopunjavali, priznajući, na taj način, nekompetentnost da daju opšteprihvaćena objašnjenja nastanka psihičkih poremećaja. I u integrativnom pristupu pojedni pravci nastoje zadržati osnovne pretpostavke svojih teoretskih pristupa.

Uvođenje psihofarmaka u tretman duševnih poremećaja i oboljenja bilo je olakšano prethodnom primjenom fizikalnih tretmana (insulinska, elektrokonvulzivna terapija). Naučna, tehnička i tehnološka saznanja, koja su osvajala svijet, naročito krajem dvadesetog vijeka, reflektovala su se na psihijatriju, i mozak je, neminovno, došao u fokus temeljitog istraživanja. U praksi, biomedicinska saznaja su postala sve važnija za organizovanje sveukupnog tretmana duševno poremećenog čovjeka, ali nisu, sama, bila dovoljna za njegovo kvalitetno liječenje.

Nevjerovatno brz razvoj molekularne biologije, naročito genetike, što je glavna karakteristika vremena u kojem živimo, našao je mjesta i u psihijatriji. S tim u vezi, intezivno se istražuje osjetljivost gena, naročito kod afektivnih poremećaja. Interakcija između gena i okoline kod Alzheimerove bolesti ilustruje svu složenost čovjekove egzistencije u svijetu.

Psihijatrija stupa u novi milenijum sa brojnim bitnim pitanjima koja su postavljena i ranije (npr. koji su sigurni rizični faktori nastanka duševnih poremećaja, kakve su promjene na mozgu u toku terapije, posebno psihoterapije itd). Stoga, ostajemo zapitani, kao i Leon Eisenberg (2000) : «Da li je psihijatrija svjesnija i pametnija nego što je bila deset godina ranije?».

Ključne riječi: biomedicinsko istraživanje, molekularna biologija, psihofarmaci

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