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SECTION 2. CLINICAL MEDICINE

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2.1 Mental health care for family physicians management of mental disorders

Abstract

- This study is focused on Emotional Burnout Syndrome (EBS) development among family physicians.
- When EBS detected, its development stage was determined (emotional tension, resistance or exhaustion).
- The positive influence of Olatropil on EBS management was studied in family physician population.
- The influence of Olatropil was estimated using a control group consisting of junior physicians.
- The study group demonstrated sustained improvement in respect to all EBS symptoms of any category.

The emotional burnout syndrome (EBS, code Z73.0 according to ICD-X) – can be partially attributed to the functional protection pattern reflecting the level of physical, psychological and emotional exhaustion induced by prolonged engagement in situations requiring emotional tension and having negative impact on professional performance.

According to WHO European Conference (2005), the adverse psychological factors at workplace can affect on mental health of one-third of the working population in EU countries with the average costs for further rehabilitation amounted to 3-4% of GNI [106].

It is often found among people whose work is associated with close contact with people - among doctors, psychologists, teachers , people whose profession belongs to the “helping” type of profession, social workers, operators, working in the field of "man-machine", managers, leaders, etc. [107]

Studies carried out in different regions of the world suggest that burnout syndrome begins to form already in senior medical students. Epidemiological studies of the prevalence of burnout syndrome have not been conducted, but according to G. Henderson (1984), about 40% of doctors have some signs of burnout that negatively affect professional activity [108,109,110] .

1. **Objective:** to assess psychoemotional conditions in family physician population using computer techniques for the purpose of EBS detection taking into account residency (megalopolis or rural regions) and professional activity; to study opportunities for using the fixed nootropic drug for EBS management considering the synergy of two components: piracetam + gammalone subject to routine recommendations.

2. **Materials and Methods.** 30 patients (health care professionals specialized in General Practice – Family Medicine) were enrolled in the study. Before enrollment, all of them provided the informed written consent. The inclusion criterion was the presence of EBS symptoms.

The following methods were used:

- *V.V.Boyko Method - Detection of Burnout Level*– the criterion for patient inclusion (quantitative evaluation of stress development – emotional tension, resistance, and exhaustion - using Score 120: 36 and lower – undeveloped stage; 37-60 - developing stage; 61 and over – developed stage) [111];

- *Minnesota Multiphasic Personality Inventory* (MMPI adapted by F.B.Berezin) – to detect changes in personality profile according to 8 criteria (hypochondriasis, depression, hysteroidal syndrom, psychonosis, paranoid syndrom, psychasthenia, schizoid syndrom, hypomania) and to assess therapeutic effectiveness[112];

- pre- and post-treatment *EEG* (to assess brain structure conditions, to detect brain functional activity depending on the coordinated functioning of all its systems) using DX-EXPERT TM Video Telemetric Electroencephalograph.

The patients were allocated by 3 groups based on their residency and length of working: Group I –10 lectures of higher education institutions working in megalopolis (teaching and medical service); Group II –10 junior physicians (without medical

experience); Group III – 10 postgraduate students from rural regions (with medical experience).

70% of patients demonstrated signs of malfunction of non-specific brain midline structures, unstable and irregular rhythmic cortical discharge, atypical α -activity of the anterior cortical areas, significantly reduced admission of bioelectrical signals from the right hemisphere. The patients were seen reduced nonverbal intelligence and creativity evolving to emotional cloudiness. This objectified the burnout in the study groups.

The fixed drug was used taking into account the synergy of two nootropic drugs: piracetam + gammalone.

The therapy duration was 2 months in the dose of 1capsule TID.

The study was carried out in the clinical settings of Family Medicine Chair, Postgraduate Faculty – Dnepropetrovsk EFR Clinical Association GA and Diagnostic Centre of Dnepropetrovsk State Medical Academy, Ministry of Health Care of Ukraine.

3. Results

Table 1.
Patients by EBS Stages and EBS Manifestation Rate (according to V.V.Boyko Method)

Clinical Group	EBS Stages								
	I. Tension			II. Resistance			III. Exhaustion		
	Non-developed	Developing	Developed	Non-developed	Developing	Developed	Non-developed	Developing	Developed
	n	n	n	n	n	n	n	n	n
Lecturers	3	4	3	1	6	3	4	4	2
Postgraduate Students	4	6	0	5	4	1	5	4	1
Junior Physicians	6	3	1	5	4	1	8	2	0

*where n – absolute patient count

As seen from the Table 1, EBS is mostly expressed among lecturers having double working load (teaching and clinical work) and living in megalopolis: all three

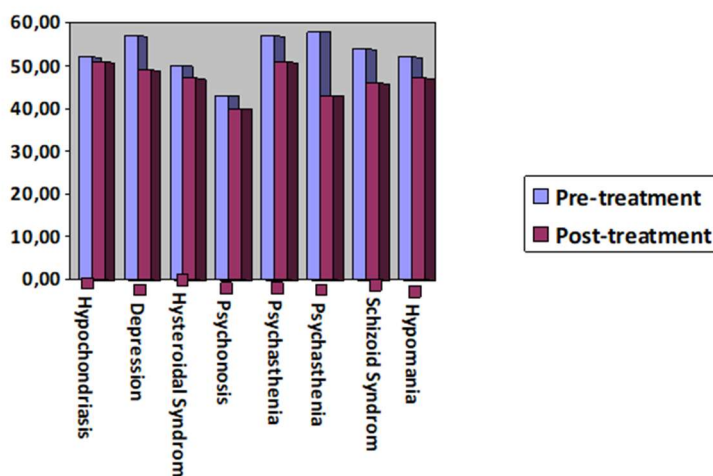
stages were detected in 9 out of 10 patients with the resistance stage predominated, and 6 patients demonstrated the exhaustion stage. In postgraduate students living in rural regions, the tension stage was prevailed (6 out of 10) while the resistance and exhaustion stages were detected in 5 patients each. In juniour physicians without working experience but living in megalopolis, the tension and resistance stages were detected in 4 and 5 patients respectively (out of 10), the exhaustion stage was demonstrated in two cases.

After treatment with the fixed nootropic drug (piracetam + gammadalone), all Groups demonstrated significant reduction in physical and psychological complaints with the highly improved effect on the second month of the therapy.

The results of Group I (10 lectures of higher education institution, mean age – 54.5 years old, working in megalopolis) showed the apparent positive effect according to 7 out of 8 MMPI indicators: reduced symptoms of depression by 12.3%, hysteroidal syndrom – by 6.2%, psychonosis – by 8.6%, paranoic syndrom – by 9.8%, psychasthenia – by 24.4%, schizoid syndrom – by 15.5%, and hypomania – by 9.4% (Diagram 1).

Diagram 1.

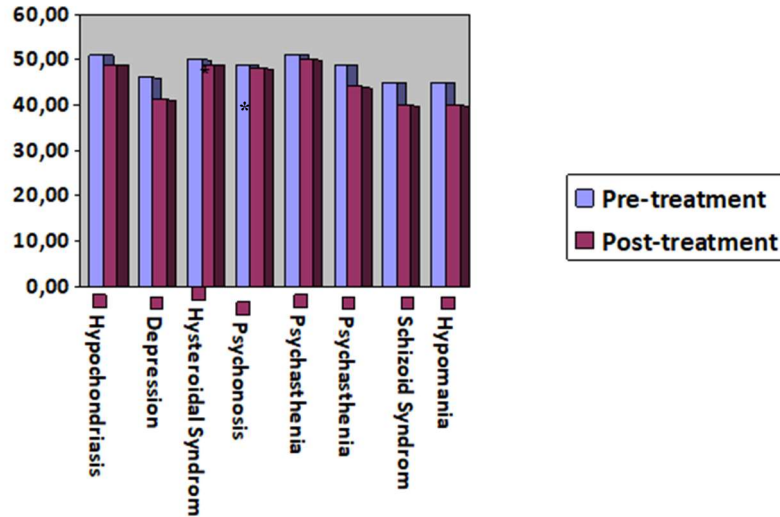
MMPI Indicator Behavior in Lecturers of Higher Education Institutions (* - pre-treatment accuracy data ($p < 0.05$))



Group II (10 junior physicians, mean age - 25.9 years old, working in megalopolis) demonstrated less apparent positive effect according to MMPI indicators compared to Group I. Out of 8 estimated indicators, 4 demonstrated significantly

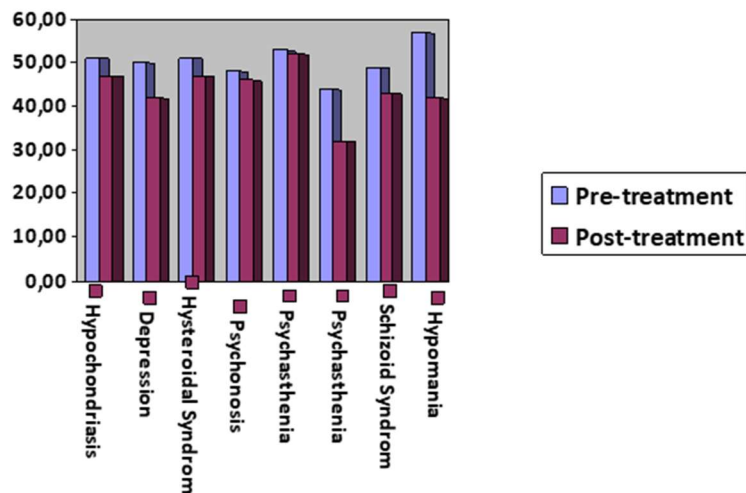
reduced symptoms: depression – by 8.8%, psychasthenia – by 10.5%, schizoid syndrom – by 9.6%, hypomania – by 9.6% (Diagram 2).

Diagram 2. MMPI Indicator Behavior in Junior Physicians (* - pre-treatment accuracy data (p<0.05))



Group III (10 postgraduate students, mean age - 43.7, working in rural regions) demonstrated apparent positive effect according to MMPI indicators (reduced symptoms of hypochondriasis - by 10.3%, depression – by 14.9%, hysteroidal syndrom – by 10%, schizoid syndrom – by 12.9%, hypomania – by 24%, psychasthenia – by 25.7%, psychonosis – by 6.5%) – please refer to Diagram 3.

Diagram 3. MMPI Indicator Behavior in Postgraduate Students (* - pre-treatment accuracy data (p<0.05))



According to pre-treatment (fixed nootropic drug - piracetam + gammalone) EEG in all Groups, no organic pathologies (epileptiform activity, focal lesions) were detected. According to control post-treatment (fixed nootropic drug - piracetam + gammalone) EEG, all Groups demonstrated a 60% regression and 40% reduction in malfunctioning of non-specific brain structures, improved background rhythm indicators - more regular, organized, and modulated α -rhythm, and normalized bioelectrical brain activity. The significantly increased relative capacity of predominant α -frequency range was detected in parallel with the decreased relative capacity of Δ -waves, reduced hemispheric asymmetry and increased amplitude of trigeminal event-related potentials components evidencing reduced intra- and intercerebral excitatory irradiation.

During monotherapy with the fixed nootropic drug (piracetam + gammalone) in the study Groups, no side effects and allergic reactions were detected.

Conclusions:

1. EBS is developed among general practitioners and its stage has a proportional dependency on working load and length of employment with more apparent signs in persons from megalopolis.
2. The fixed nootropic drug (piracetam + gammalone) can provide significant improvement of typical EBS clinical symptoms and increased physical and mental efficiency.
3. Integration of the fixed nootropic drug (piracetam + gammalone) into EBS management can ensure normalization of the personality profile according to all 8 criteria.
4. The positive effect of the fixed nootropic drug (piracetam + gammalone) was proved by EEG findings: improved background rhythm and bioelectrical brain activity.
5. The fixed nootropic drug (piracetam + gammalone) is safe and has good tolerance profile and can be recommended for EBS management.
6. Due to the specific character of the activity, doctors and lecturers are amenable to EBS development requiring monitoring and timely management.