# *Case presentation- Case Management of Mild Cognitive Impairment and Anxiety-Depressive Disorder diagnosed after SARS-Cov2 Infection*

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**Abstract:**
*Through this article, we want to highlight the importance of diagnosing earlier the MCI and anxiety disorder in order to be able to institute the necessary therapeutic measures and also to preserve the quality of life to a young patient.*
*Also the second very important aspect that we want to emphasize is that of the cognitive and behavioral disorders developed in the post Covid era and how to manage this pathology that the current medical world is facing in the new paradigms. Through these aspects we show once more the importance of extrinsic factors (such as professional stress, COVID infection, lifestyle and behaviors) in maintaining both physical and mental health and increasing the quality of life at the same time as increasing life expectancy.*
*Keywords: SARS-COV2, mild cognitive impairment, anxiety, depression disorder*

Information from literature: Since the beginning of the COVID 19 pandemic, the problem of mental health and its imbalance due to the infection with the SARS-COV2 virus, as well as all its related aspects, have begun to be observed and studied. At the beginning the studies focused on the psychosocial response to the pandemic and on the emotional and psychological impact of strategies related to the pandemic such as quarantine, harder access to health services, isolation [1,2]

Later, the issue of cognitive deterioration and apathy, anxiety state, depression and rhythm disorders were noticed and began to be studied in patients who were infected. So, it was concluded that it is necessary for all medical professionals to be aware of the existence of these disorders in the post-covid syndrome in order to approach the recovery process in a multidisciplinary way [3]

Also, this newly created niche in medicine opens the way to research, development of new clinical studies in the field of cognitive health to be able to incorporate all these new scientific discoveries [4]

**Case presentation**: 47-year-old-man known with multiple risk factors regarding neurocognitive pathology with early on set such as: hypertension with uncontrolled values

in the last 2 years, mixed dyslipidemia with hypercholesterolemia and hypertriglyceridemia Additional risk factors: minor head trauma by falling without hospitalization, spondylitis with HLA-B27 positive, Helicobacter pylori positive, hepatitis with HCV (treatment with interferon in 2013), 25-OH-Vitamin D3 and folate deficiency, smoking 10 cigarettes/day, alcohol weekly, Professional exposure at chemical fertilizers (including cyanide) in the field of agriculture.
3 months after infection with SARS-COV2 mild symptomatic form without hospitalization present itself in the Clinic with: sleep rhythm disorders, repetitive wakefulness, wakes up tired, headache of moderate intensity, dizziness with balance disorders, concentration problems and short-term memory impairment.
Biological: mixed dyslipidemia with hypercholesterolemia and hypertriglyceridemia (LDL=220 mg/dl) , 25-OH-Vitamin D3 and folate deficiency.
Paraclinically: Brain MRI with hippocampus volumetry: bilateral hippocampal atrophy, without vascular, ischemic or hemorrhagic brain lesions, symmetrical non-dilated ventricular system.

STANDARDIZED GERIATRIC EVALUATION:

1. MMSE (Mini Mental State Examination)- 28/30 pct lose 2 pct la attention and mental calculation
2. C.D.T (Testul ceasului/Clock drawing test)- 8/10
3. HACHINSKI score - 5
4. ADL (Activity of Daily Living) - 6/6
5. IADL (Instrumental Activity of Daily Living) - 8/8
6. Verbal fluency: Letter : 10 /min , 15/min
   Semantic group: 12/min /, 15/min
7. REY Figure copy 34/36, evocation 22/36
8. GDS 15 (Geriatric Depression Scale 15 items) 5/15
9. MNA (Mini Nutritional Assessement) 22/30
10. TINETTI static 13/13, dynamic 8/8

Corroborating all anamnestic data and paraclinical investigations, we formulated the following diagnoses: Mild Cognitive Impairment (MCI), mixed anxiety-depression disorder, predominant in the anxiety component post infection with SARS-COV2, hypertension stage III additional high-risk group, mixed dyslipidemia due to hypercholesterolemia and hypertriglyceridemia, chronic gastroduodenitis with Helicobacter pylori antigen present, 25-OH-Vitamin D3 and folate deficiency.
Treatment: Porcine brain protein hydrolysate - 2 fi of 10 ml administered in the morning in PEV 250ml Ringer's solution, for 5 days/month, 6 consecutive months, adaptogen supplements, Vitamin D3 and folic acid substitution treatment, antihypertensives oral drugs: sartan + calcium blocker (with TA / AV value control), antiplatelet agent, hypolipemic initiation of antibiotic therapy for Helicobacter pylori in combination with IPP. Lifestyle counseling - chronic stress management and associated risk factors (diet, sleep hygiene).
Visit 2 - dynamic revaluation at 6 months: Biological tests show the correction of vitamin D3 and folate deficiency, with the decrease of the values, Total cholesterol, LDL, triglycerides – the improvement of the clinical-biological symptomatology; Improvement of anxiety-depressive symptoms, sleep-wake rhythm disorders, behavioral disorders, and psycho-emotional status.

Improving cognitive performance highlighted by standardized geriatric reevaluation.

STANDARDIZED GERIATRIC EVALUATION Visit 1 Visit 2 (6 months)

1. MMSE (Mini Mental State Examination)
   28/30 pct (lose 2 points of attention and mental calculation) 30/30 pct
2. C.D.T (Clock drawing test)
   8/10 pct 10/10 pct
3. HACHINSKI score
   5pct 5pct
4. ADL (Activity of Daily Living)
   6/6 pct 6/6 pct
5. IADL (Instrumental Activity of Daily Living)
   8/8 pct 8/8 pct
6. Verbal fluency Letter
   10 letters/min / 15 letters/min 15 letters/min / 15 letters/min
   Semantic group
   12 letters/min / 15 letters/min 20 letters/min / 15 letters/min
7. REY

Figure Copy
   34/36 pct 36/36 pct
   Evocation
   22/36 pct 28/36 pct
8. GDS 15 (Geriatric Depression Scale 15 items)
   5/15 pct 5/15 pct
12. MNA (Mini Nutritional Assessment)
   22/30 pct 22/30 pct
13. TINETTI STATIC
   8/8 pct 8/8 pct
   DYNAMIC 13/13 pct 13/13 pct.

| STANDARDIZED GERIATRIC EVALUATION | | Visit 1 | Visit 2 (6 months) |
|---|---|---|---|
| 1. MMSE (Mini Mental State Examination) | | 28/30 pct( lose 2 points of attention and mental calculation) | 30/30 pct |
| 2. C.D.T (Clock drawing test) | | 8/10 pct | 10/10 pct |
| 3. HACHINSKI score | | 5pct | 5pct |
| 4. ADL (Activity of Daily Living) | | 6/6 pct | 6/6 pct |
| 5. IADL (Instrumental Activity of Daily Living) | | 8/8 pct | 8/8 pct |
| 6. Verbal fluency | Letter | 10 letters/min / 15letters/min | 15 letters/min / 15letters/min |
| | Semantic group | 12 letters/min / 15letters/min | 20 letters/min / 15letters/min |
| 7. REY Figure | Copy | 34/36 pct | 36/36 pct |
| | Evocation | 22/36 pct | 28/36 pct |
| 8. GDS 15 (Geriatric Depression Scale 15 items) | | 5/15 pct | 5/15 pct |
| 12. MNA (Mini Nutritional Assessement) | | 22/30 pct | 22/30 pct |
| 13. TINETTI | STATIC | 8/8 pct | 8/8 pct |
| | DYNAMIC | 13/13 pct | 13/13 pct. |

Table 1

**Conclusions**:

The net improvement of the neurocognitive symptoms, the improvement of the cognitive performances, highlighted by the increase of the scores of the tests within the standardized geriatric evaluation performed in dynamics, after the administration of neurotrophic treatment for brain 6 months according to the indicated therapeutic scheme. Early establishment of treatment for associated risk factors (vascular and metabolic) has also been a major contributor to the improvement of neurocognitive symptoms. Counseling on stress management (predominantly professional) has had a positive impact on case management.

The early approach to mild cognitive impairment, by initiating specialized neurotrophic treatment in combination with the correction of existing vascular and metabolic risk factors, has significantly contributed to the improvement of clinical-biological symptoms, background, improving cognitive performance, behavioral disorders, and psycho-emotional status in this case.

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