THE IMPACT OF THE COVID-19 PANDEMIC ON SELF-INFLICTED BURN INJURIES IN PATIENTS WITH PREVIOUSLY DIAGNOSED BIPOLAR DISORDER

IMPACT DE LA PANDÉMIE COVID-19 SUR LES BRÛLURES AUTO-INFLIGÉES DES PATIENTS CONNUS BIPOLAIRES

Ćertić B.,[1] Jovanović M.,[1,3] Karamarković M.,[1]✉ Vasović D.,[2] Isaković-Subotić J.,[1] Živković M.,[1] Rašić D.[2,3]

[1]University Clinical Centre of Serbia Clinic for Burns, Plastic and Reconstructive Surgery, Belgrade, Serbia
[2]University Clinical Centre of Serbia Eye Hospital, Belgrade, Serbia
[3]School of Medicine University of Belgrade, Belgrade, Serbia

SUMMARY. Here we present a case of a 52-year-old female patient who was admitted to the Clinic in December 2021 due to the presence of right side facial burns which were caused by a cigarette lighter under suspicious conditions. Her past medical history revealed she was diagnosed with bipolar disorder at the age of 20 and was hospitalized multiple times for the treatment of manic episodes. The last psychiatric hospitalization took place in October 2021. She had deep second-degree burns on the right side of the face, head and neck, with a total body surface area involvement of approximately 3%. On hospital day 18, she was found unresponsive, dyspnoic, with no palpable pulse and measurable tension. Electrocardiogram (ECG) monitoring revealed sinus bradycardia followed by cardiac asystole. After the first few minutes of cardiopulmonary resuscitation, heart and lung action was re-established. Due to the presence of ECG changes in the form of ST depression and negative T waves in V2-V6, D1 and aVL, also higher blood level of high sensitivity troponin T, she was urgently transported to the Coronary Unit where she was diagnosed with non-ST-elevation myocardial infarction. On hospital day 27, due to the presence of sub-febrile temperature and non-productive cough, she was tested for COVID-19 infection and transported to the COVID Hospital Batajnica. She was discharged with stable laboratory parameters and normal chest radiography 37 days following initial admission. Considering the great psychological impact related to the COVID-19 pandemic, extensive mental health support and regular monitoring of critical groups is indicated.

Keywords: burn injuries, COVID-19, bipolar disorder

RÉSUMÉ. *Nous présentons le cas d'une femme de 52 ans hospitalisée en décembre 2021 pour brûlures par briquet de la partie droite du visage, survenue dans des circonstances suspectes. Le diagnostic de trouble bipolaire avait été posé sur elle à l'âge de 20 ans et elle a été hospitalisée à de multiples reprises en raison d'épisodes maniaques, la dernière fois en octobre 2021. Les brûlures, profondes, siégeaient au niveau de la partie droite du cou, du visage et du cuir chevelu, représentant 3% de sa SCT. A j18, elle est retrouvée inconsciente, dyspnéique, sans pouls palpable ni pression artérielle mesurable. L'ECG montre une bradycardie sinusale puis une asystole. Le ressuscitation est un succès en quelques minutes. On observe un sous-décalage de ST en D1, aVL et de V2 à V6 ainsi qu'un mouvement de troponine motivant son transfert en cardiologie, où le diagnostic d'infarctus du myocarde est posé. A J27, le diagnostic d'infection à COVID-19 est avéré, à la suite d'un syndrome fébrile et d'une toux sèche, elle est transférée à l'hôpital Batajnica. Elle sort à J37, avec une biologie et une radiographie thoracique normales. En raison des conséquences psychologiques de la pandémie COVID-19, un support psychologique doit pouvoir être largement disponible et les populations les plus à risque doivent être régulièrement suivies.*

Mots-clés : *brûlure, COVID-19, troubles bipolaires*

✉ Corresponding author: Miodrag Karamarković, MD, University Clinical Centre of Serbia Clinic for Burns, Plastic and Reconstructive Surgery, Zvecanska 9, Belgrade, Serbia. Mobile phone: +381 645668833; email: mkaramarkovic91@gmail.com
Manuscript: submitted 07/05/2022, accepted 16/05/2022

Introduction

The COVID-19 pandemic has become one of the most significant global events of all times, displaying various health, social, economic and political concerns.[1] Risk factors for psychiatric morbidity have increased during the pandemic. Furthermore, the increased demand on health services and attempts to limit physical contact have reduced the ability of mental health support services to meet this increased need and to provide adequate help when needed.[1,2]

The connection between major psychiatric illnesses and a tendency for self-harm is clear. The incidence of self-inflicted burn injuries varies from 1 to 10% in highly developed countries, and up to 30% in developing countries.[1,2] Recently published study by Jackson et al. showed an increase in both frequency and severity of self-inflicted burn injuries during the COVID-19 pandemic, with psychiatric illnesses being recognised as one of the major risk factors.[3]

Materials and methods

A 52-year-old female patient was admitted to the Intensive Care Unit of the University Clinical Center of Serbia Clinic for Burns, Plastic and Reconstructive Surgery in December 2021 due to the presence of right side facial burns which were caused under suspicious conditions by a cigarette lighter. Her past medical history was significant for diabetes type II. She was also diagnosed with bipolar disorder type I at the age of 20 and since then had been hospitalized multiple times for the treatment of manic episodes. The last psychiatric hospitalization took place in October 2021. Her treatment regimen included valproate 1000mg/day, lithium carbonate 600 mg/day, diazepam 10mg/day, olanzapine 20mg/day, propranolol 20mg/day and metformin 2000mg/day. She was fully vaccinated with Sinopharm SARS-CoV-2 vaccine. A second dose was received on the 8th of October 2021. Upon admission she was hemodynamically stable with no need for oxygen support. She had deep second-degree burns on the right side of the face, head and neck, with a total body surface area (TBSA) involvement of approximately 3%. Her eyelids were swollen on the right side, with conjunctival chemosis and hyperaemia present, cornea was clear with no visible changes. Best corrected visual acuity (BCVA) on the right eye was 20/50, and 20/20 on the left eye. On hospital day 18, she was found unresponsive, dyspnoic, with no palpable pulse and measurable tension. Electrocardiogram (ECG) monitoring revealed sinus bradycardia followed by cardiac asystole. Her airways were immediately secured, and non-invasive positive pressure ventilation was initiated. Simultaneously, cardiopulmonary resuscitation (CPR) was started. After the first few minutes of CPR, heart and lung action was re-established. Following the initial shock, she regained consciousness and was placed on continuous noradrenaline support (a flow rate of 2ml/h), arterial tension 90/60mmHg, heart rate 100/min, saturation 97% on 15l/min of oxygen support. Due to the presence of ECG changes in the form of ST depression and negative T waves in V2-V6, D1 and aVL, also higher blood level of high sensitivity troponin T (hsTnT), she was urgently transported to the Coronary Unit for further treatment. Multi-slice computed tomography (MSCT) pulmonary angiography scans were normal, with no visible signs of pulmonary embolism. During hospitalisation at the Coronary Unit she was diagnosed with non-ST-elevation myocardial infarction (NSTEMI) and was treated with dual antiplatelet therapy (DAPT), anticoagulant therapy, statins and proton pump inhibitors (PPI). Angiotensin-converting enzyme (ACE) inhibitors and beta-blockers were not used due to the presence of hypotension and bradycardia.

On hospitalization day 27, due to the presence of sub-febrile temperature and non-productive cough, she was tested for COVID-19 infection. Following positive PCR test for COVID-19, she was transported to the COVID Hospital Batajnica where she was treated according to the National COVID Treatment Protocol, version 13. During hospitalization in the COVID Hospital she was regularly visited by a plastic surgeon and ophthalmologist. BCVA on the right eye recovered to 20/20 with complete regression of previously described changes. Further surgical treatment of facial burns was not indicated. She was discharged with stable laboratory parameters and normal chest radiography 37 days following initial admission to the hospital.

Discussion

Self-inflicted burn injuries represent a significant medical problem worldwide since they tend to be greater in terms of extent and depth, and are usually associated with higher risk of mortality during admission and clinical assessment of the patient.[4,5] Burn size is smaller in patients who have no intention of suicide than in suicidal patients.[5] In a study conducted by Daniels et al., in a 10-year retrospective survey of 2216 burn admissions, only 15 patients had self-inflicted burn injuries.[6] According to this study, the main motives for self inflicted burns were: attempts to rid themselves of delusions or responses to command hallucinations, major depression, trying to escape from stressful situations, revenge, and attempts to manipulate interpersonal situations.[6] Pre-existing psychiatric diagnoses were: major depression, schizophrenia, organic psychosis, schizoaffective disorder and bipolar disorder.[6] Another study by Caine et al. identified 118 self-inflicted burns, which represented approximately 1.16% of total burn referrals over the ten-year period.[7] The most commonly affected anatomical sites were upper limbs, lower limbs and trunk. The head and neck were affected in 31% of patients in this study. The average length of stay was 31 days, which was similar to previously published data. Only 36% of patients attended their follow-up appointments, with the rest being lost to follow-up.[7]

COVID-19 pandemic has negatively affected mental health outcomes, due to the limited access to mental health and psychiatric services. An especially vulnerable group among patients with previously diagnosed psychiatric disorders were those with bipolar disorder.[8] Stress could act as a trigger in the onset of manic episode, so psychological support should be more available for these vulnerable individuals. We have found three case reports describing the onset of manic episodes during the lockdown period in females who were not COVID-19 positive with or without previous psychiatric history.[9,10,11] A recently published meta-analysis by Fornaro et al. confirmed increased vulnerability of people with primary diagnosis of bipolar disorder compared to the general population during the COVID-19 pandemic.[12] These individuals generally come from a lower social class, with poor social and family support. Higher incidence among younger women has been the main characteristic of self-inflicted burns in lower socio-economic countries.[13] It seems that the pandemic, being an acute predisposing factor, works to enhance these events.

Conclusion

Considering the great psychological impact related to the COVID-19 pandemic on individuals, especially among patients with previously diagnosed psychiatric disorders, extensive mental health support during this period and regular monitoring of critical groups is much needed.

BIBLIOGRAPHY

1 Vetrichevvel TP, Randall SM, Wood FM, Rea S et al.: A population-based comparison study of the mental health of patients with intentional and unintentional burns. Burns Trauma, 6(1): 31, 2018.
2 Atwell K, Bartley C, Cairns B, Charles A: Incidence of self-inflicted burn injury in patients with major psychiatric illness. Burns, 45(3): 615-620, 2019.
3 Jackson SR, Jung M, Karunaratne G, Mackenzie K et al.: Increased self-immolation frequency and severity during the COVID-19 pandemic. Burns, 5: S0305-4179(22)00005-5, 2022.
4 Marques RR, Almeida CEF, Coltro PS, Santos LAF et al.: Covid-19 pandemic has increased the incidence of self-inflicted burn injuries. Burns, 47(8): 1931-1932, 2021.
5 Balakrishnan C, Erella VS, Vashi C, Jackson O et al.: Self-inflicted specific pattern burns in psychiatric patients. Can J Plast Surg, 15(3): 153-154, 2007.
6 Daniels SM, Fenley JD, Powers PS, Cruse CW: Self-inflicted burns: a ten-year retrospective study. J Burn Care Rehabil, 12(2): 144-7, 1991.
7 Caine PL, Tan A, Barnes D, Dziewulski P: Self-inflicted burns: 10 year review and comparison to national guidelines. Burns, 42(1): 215-221, 2016.
8 Sowmya AV, Javadekar A, Menon P, Saldanha D: Impact of COVID-19 pandemic on persons with psychiatric disorders. Ind Psychiatry J, 30(Suppl 1): S288-S290, 2021.
9 Uvais NA: Mania precipitated by COVID-19 pandemic-related stress. Prim Care Companion CNS Disord, 22: 20l02641, 2020.
10 Lazzari C, Nusair A, Shoka A, Hein SM et al.: Case reports of first psychiatric presentations during CoViD-19 pandemic. Riv Psichiatr, 55: 319-321, 2020.
11 Yin X, Sun Y, Zhu C, Zhu B et al.: An acute manic episode during 2019-nCoV quarantine. J Affect Disord, 276: 623-625, 2020.
12 Fornaro M, De Prisco M, Billeci M, Ermini E et al.: Implications of the COVID-19 pandemic for people with bipolar disorders: a scoping review. J Affect Disord, 295: 740-751, 2021.
13 Yin X, Sun Y, Zhu C, Zhu B et al.: An acute manic episode during 2019-nCoV quarantine. J Affect Disord, 276: 623-625, 2020.