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ORIGINAL ARTICLE

- 57 **Lessons identified by the Hyperbaric Department about the treatment for COVID-19 patients with hyperbaric oxygenotherapy**
Callejón-Peláez E.G., Baragaño-Ordóñez M.E., Martínez-Izquierdo A., Viqueira-Caamaño A., Pujante-Escudero A.
SUMMARY: Introduction: During the first period of the COVID-19 pandemic and due to saturation of the health care system, it was necessary to treat with hyperbaric oxygen therapy (HBO) (in the Hyperbaric Medicine Service at the Defence Central Hospital «Gómez Ulla» (HCD)), some patients with PCR (+) for COVID -19, or with clinical, radiological or analytical high indicative data. **Objectives:** to treat patients without positive answer to regular treatment and to check the effectiveness of HBO as useful therapy for COVID-19. **Material and method:** There were valued 11 requests for treatment from COVID-9 wards and the Intensive Care Department. Eventually 6 of those patients were treated. These patients were treated in a multiplace hyperbaric chamber between 1.6 and 2 ATAs and for 90 to 105 minutes of time, with ancillary personnel inside the chamber the whole sessions. There were also developed security protocols to prevent COVID-19 infection. Image and analytics controls were followed. **Results and conclusions:** 35 sessions of treatment were completed. The patients received from 1 to 14 sessions. It did not happen any case of infection on the medical personnel of the HBO Department. The patients which (due to their physical status) could receive 5 or more sessions had a better clinical evolution. Some desaturation reflexes were observed.
KEY WORDS: COVID-19, HCD, hyperbaric oxygen therapy (OHB) and hyperbaric chamber.
- 64 **Mortality in the first four months of 2020 in the COVID-19 pandemic. Analysis of the Mortality Committee of the Hospital Central de la Defensa «Gómez Ulla», Madrid**
Sáez-García M.A., García-Anaya M.P., Sánchez-González B., Fernández-Pascual C., Gracia-Martínez M., Marqueta-García O., Yuste-del-Pozo V., Ferrara-Coppola C.
SUMMARY: Introduction: In December 2019, Wuhan, China had an outbreak of the COVID-19 disease, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease quickly turned into a pandemic. The risk factors associated with its mortality are yet to be determined. The Mortality Committee studies hospital deaths with the main objective of reducing preventable deaths. **Objectives:** To describe the comorbidity and demographic characteristics of the deaths from the first four-month period of 2020 at the Central Defense Hospital and their relationship with COVID-19. **Material and methods:** Cross-sectional, descriptive, observational and retrospective study. Clinical and demographic data of deaths in relation to the presence of COVID-19. **Results:** Of 371 deceased, 271 positive COVID-19 and 100 negative COVID-19-. Almost 1.8 times more than the expected mortality in the four-month period (208 to 371). Average age of the groups 80 and 84 years, range between 35 and 104 years. Hospital stay at positive COVID-19 10.1% compared to 5.5% at negative COVID-19. Foreign exitus under 70 years 80%. Exit location: hospital plant (84%). Average Charlson index score: 4 points (interquartile, 2-6), 53% estimated survival at 10 years. Most frequent comorbidities: HTN (70.5%); DM (36.5%); Oncological (31%); Pneumonia (86.7%). Poor general condition at admission (81.9%). **Conclusions:** The variable with the greatest power related to mortality was advanced age. Another group, without comorbidities, younger than 51 years, presented fatal evolution. Despite the difficulty in establishing the actual mortality rate from COVID-19, the difference between the expected deaths and those recorded by the Hospital Mortality Committee constitutes the most approximate value.
KEYWORDS: COVID-19, Coronavirus, Comorbidity, Mortality Committee, Madrid.

SHORT COMMUNICATION

- 71 **Acute arterial ischemia in patients with COVID 19 infection**
Sainz-González F., Martínez-Izquierdo A., Abdelkader-Abu-Sneimeh A.
SUMMARY: The infection caused by the novel coronavirus SARS-COV-2 (COVID-19) which was declared global pandemic by the WHO has showed to be a highly thrombotic disease in some patients, presenting with venous and arterial complications such as deep vein thrombosis, pulmonary embolism and acute ischemia affecting patients with and without previous diseases. We describe four cases of COVID-19 patients treated in Gomez Ulla Hospital of Madrid during the pandemic. Clinical manifestations and outcome are compared with other similar series.
KEY WORDS: Coronavirus COVID-19. hypercoagulable states. Acute arterial ischemia and exacerbated chronic ischemia.

REPORTS

- 74 **The Spanish Central Defense Hospital in COVID-19 Crisis**
Sáez-Garrido J.D., Tafalla-García J.J., Chacartegui-Quetglas M.
SUMMARY: In this paper, we present the changes made at the Central Defense Hospital «Gomez Ulla» to face the COVID-19 crisis. A description on the available capabilities prior to the pandemic outbreak is made, and how they had to adapt to a

suddenly established new situation, regarding departments such as Emergency, Hospitalization and Intensive Care Units. Support received, both in personal and material resources will also be mentioned.

KEYWORDS. COVID-19, Military hospital, Pandemic, Military Health, Health logistics, Role 4.

80 **Hospital organization quarantine in Wuhan evacuees at the start of the COVID-19 pandemic**

Ramírez-Olivencia ., Membrillo-de-Navales F.J., Ballester-Orcal L.E., García-Rosado M.V., López-Figueras A.I., Cadenas-Alonso P., Estébanez-Muñoz M.

SUMMARY: **Introduction:** On December 31, 2019, the World Health Organization was informed of a group of cases of pneumonia of unknown etiology detected in the city of Wuhan (China). On January 30, 2020, the nCoV-2019 outbreak (later SARS-CoV-2) was declared a public health emergency of international concern. In this context, some western countries decided to evacuate their citizens. **Aim:** This article describes the approach taken in the case of people evacuated from Wuhan upon arrival in Spain. **Methods:** Information was collected on the criteria for selecting facilities and personnel, the number of quarantine cases, the infection control strategy, the duration of quarantine, clinical monitoring, and other relevant aspects. **Results:** The Spanish health authorities selected the Gómez Ulla Central Defense Hospital to carry out a hospital quarantine. Twenty-one people were transferred from Wuhan to Madrid, including two children. Preventive medicine and infectious disease physicians were selected to direct and assist surveillance. The visits were authorized following an established protocol. **Conclusions:** This is the first hospital quarantine report for SARS-CoV-2, designed specifically for returnees. hospitalarian quarantine could be a useful method for selected cases of highly contagious diseases. However, good resource and facility support, selection of experienced staff, and revised protocols are required.

KEYWORDS: Quarantine, SARS-CoV-2, COVID-19, coronavirus.

86 **Role of infectious Diseases unit during COVID-19 pandemic in Central Defense Hospital**

Membrillo-de-Navales F.J.

SUMMARY: Central Defense Hospital «Gómez Ulla» (HCDGU) has played a particularly important role during the COVID-19 pandemic in Spain. In this article we will focus on the role of the Infectious Diseases unit of the HCDGU during its four phases: pre-pandemic preparation, the attention of the quarantine of Spaniard returnees from Wuhan, China on 31 January 2020, the initial hospital care of the first COVID-19 cases in March 2020 and the transformation of such care into a multidisciplinary model based on the antimicrobial stewardship model. Lessons learned and proposals for improvement are also discussed.

KEYWORDS. COVID-19, Military Health Corp, Infectious Diseases, CBRN, Antimicrobial Stewardship

91 **The Department of Psychiatry and Mental Health of the Military Hospital «Gómez Ulla» during the SARS-CoV-2 pandemic**

Presa-García M.E., Pérez Íñigo-Gancedo J.L., Alonso-Martín A., Muñoz-Cenfor M.J., Iglesias-García C.T., Abril-García M.A., Martínez-Sanz M., Robles-Bermejo F., Ric-Benito P., Fernández-Faber D., Suarez-Guinea R., Rodríguez-Villarino C., Juárez-Calvo V., Rubio-Zabala I., Benavente-López S.

SUMMARY: In this work the structural and logistical measures are exposed, as well as the planned clinical practice, to be able to respond to the pandemic caused by the virus SARS-CoV-2 in the Department of Psychiatry and Mental Health of the Central Defense Hospital «Gómez Ulla». The planning of the care function was divided into five groups: psychiatric patients admitted to the Brief Hospitalization Unit; patients with psychiatric pathology admitted to other different Psychiatric Services; outpatients treated in Outpatient Consultations; the relatives of the patients admitted by COVID-19; the health personnel of the Central Defense Hospital «Gómez Ulla». Based on the needs of these care groups, comprehensive care planning was carried out. During the period March 14 to May 30, 13% of the staff presented moderate-severe symptoms of COVID-19; 19% of the psychiatric patients admitted to the hospitalization unit were COVID19 positive, none of whom died. 74% of the inter-consultations carried out were on patients admitted for COVID-19 who presented mostly confusional symptoms of varying intensity or psychosis secondary to the use of drugs in the active treatment of COVID-19. 4.185 calls were made to family members, of which 14% (n = 575) were at the request of the family members themselves. More than 220 video calls were made and 100% of the external consultations were kept online.

KEYWORDS: Mental health. Pandemic, COVID-19, Psychiatry. Crisis intervention. Attention to relatives. Duel.

96 **Military Pharmacy in health crisis due to COVID-19**

Sánchez-Ramos J.J.

SUMMARY: The Ministry of Defence's Pharmaceutical Services have the task of directing organisms and facilities of the pharmaceutical services, the supply and maintenance of medical materiel, the formulation of technical specifications, the cataloguing of pharmaceutical products, the analysis of chemical, biological and toxicological products as well as health protection in nuclear, biological and chemical environments. Through the different structures of the Armed Forces in which pharmaceutical officers are integrated, all available capabilities have been utilized in order to respond to the recent health crisis COVID-19 caused by the SARS-CoV-2. As such, this has been carried out in the planning and execution of Operation Balmis, under the authority of the Chief of Defence Staff (JEMAD in Spanish) and the Commander of the Operations Command (CMOPS in Spanish), with tasks such as providing pharmaceutical information and advice. On the other hand, the Military Pharmacy has focused its efforts on military manufacturing and logistics of pharmaceuticals and medical materiel following the criteria of effectiveness and efficiency required in these unprecedented circumstances, covering the entire process from the management of acquisition or production, to distribution or dispensation both within the Armed Forces, and in requests for support made by civilian authorities in matters of health. Finally, the diagnostic capabilities of laboratories with a pharmaceutical presence has been enhanced, new detection techniques for the viral agent have been implemented and new biochemical parameters related to COVID-19 have been included in the service portfolio. The new magnitude of pharmaceuticals and medical materiel involved in this health crisis has highlighted the need to constitute a national strategic pharmaceutical stockpile, for a joint Armed Forces - Ministry of Health action.

KEY WORDS: Military Health Corps, medical materiel, pharmaceutical products, COVID-19, Balmis, Military Pharmacy, manufacturing, logistics, management, acquisition, distribution, dispensation, Armed Forces, diagnostic capability, strategic stockpile.

106 **The role of the Military Veterinary corps in epidemic outbreaks, according to COVID-19**

Cique-Moya A., Vega-Pla J.L.

SUMMARY: Human and animal health are intertwined and linked to ecosystems. The vast majority of emerging diseases have an animal origin, where a microorganism comes into contact with man through one or more animal species by sharing or modifying a given ecosystem. The way of life globalized by international transport can also cause an outbreak of disease to become an epidemic or a pandemic, as has been the case of COVID-19. The transversal approach provided by the One Health philosophy of the World Health Organization (WHO) is vital to face the biological threats that lie in wait for society. The role of the Military Veterinary in the prevention and control of epidemic outbreaks within multidisciplinary military health teams provides a broad and experienced vision to face the challenges that arise in those epidemiological situations where the national security environment may be compromised.

KEYWORDS: Army Veterinary, zoonosis, COVID-19, SARS-CoV-2, outbreak, pandemic.

111 **Military Dentistry in Operation Balmis. Challenges, activities carried out and lessons learned**

García-Rebollar R., Hernández-Regalado M.A., Rodríguez-Cagiao G., Malpartida Martínez-Darve S.

SUMMARY: Systematic review of activities related to Spanish military dentistry, and its direct or indirect actuation during the SARS-Cov-2 pandemic. The activities carried out during the specific training phase in the technical remote training phase of cadet ensigns curriculum are described. This article analyzes the problems faced in dental consultations, training needs and the logistical requirements demanded by the dental protocols for action in a health emergency of these characteristics, both during the pandemic phase and in the post-pandemic phase.

KEYWORDS: Spanish Military Dentistry. Activities. COVID-19 pandemic. Procedures and protocols.

118 **Military psychology in mental health prevention in Spain during the SARS-Cov-2 Pandemic**

García-Real JM., García-Silgo M., Conejo-García M.T., Samper-Lucena E., Torrejón-Correa C., Cerezo-Ureta J., Más-Esquerdo J., Laplaza-Brun A., Ruiz-Espinosa JI.

SUMMARY: Scientific community indicates that emergency and disaster situations have a higher impact on mental health than on physical health. There was no reason to believe that outbreak COVID-19 and state of alarm were going to impact less than previous epidemics. For this reason, military psychology needed to contribute with some of its capabilities to reduce the impact of the emergency on the mental health of part of the population. *Method:* Bibliographic searches in PubMed, PsycINFO and EBSCOhost were performed to analyze the impact of the COVID-19 pandemic on mental health. In addition, some of the actions that military psychology has carried out throughout the Nation are described. *Results:* A negative psychological impact of COVID-19 was observed in countries such as China, Algeria, Iran, India, Italy, Spain, United Kingdom or Germany. Military psychology carried out at least 15,000 actions, although not all of them resulted in psychological interventions and about half of them were formally accounted. Approximately 40% of the people received at least one psychological intervention (13% in individual format and 27% in group session for participants). Of the individual actions recorded, about 18% needed psychological first aid. Negative symptoms but also positive resilience patterns were observed in people. Actions were done in different contexts: Workers and users of nursing homes and centers for vulnerable people; hospitalized and hospitalized's relatives and deceased by COVID-19; military personnel as first workers; military relatives; civil workers from the Ministry of Defense; retired military personnel; and military widows. *Conclusions:* According to the scientific literature, this outbreak has had a negative impact on mental health. However, despite negative symptoms, people also presented resilience patterns.

KEY WORDS: Military psychology, COVID-19, mental health prevention, psychological first aid (PFA), moral injury, resilience, crisis and emergency intervention, Balmis Operation.

PICTURE PROBLEM

126 **Acroischemic Cutaneous Lesions In A Patient With Bilateral Interstitial Pneumonia**

Rueda-Correa F., Fonda-Pascual P.M., Yuste-del-Pozo V., Ferrara-Coppola C.C., Domínguez Cañete J.J. and Sáez-García M.A.

SUMMARY: A 90-year-old female patient came to the Hospital Central de la Defensa Gómez Ulla emergency room due to general malaise, fever and dry cough. Her personal history included hypertension, dyslipidemia, left inguinal hernioplasty, peripheral arterial disease and a thirty-year history of recurrent syncope of probable vasovagal origin. Examination showed BP 130/60 HR 79 BPM SAT 78% ambient T° 36 celsius. Chest X-ray showed bilateral interstitial infiltrate.

HISTORY AND HUMANITIES

128 **Pandemics, the military and the history of Science**

Ponte-Hernando F.J.

SUMMARY: Epidemics, plagues or pestilences, which in all these ways have been called, have accompanied humanity since its earliest childhood, there having been no idyllic natural state, free of disease, not even before the presence of man on Earth, since various diseases have been located in the oldest animal remains, including dinosaurs.

INSTRUCTIONS FOR AUTHORS