



ORIGINAL RESEARCH PAPER

General Medicine

INCIDENCE AND PREVALENCE OF SARS COVID 19 IN DIALYSIS UNIT QUITO ECUADOR

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Pablo Llerena Jara*	MD General Practitioner,*Corresponding Author
Karen Chávez Cadena	MD General Practitioner,
Gonzalo Nicolalde Castillo	General Practitioner,
William Franco Cundar	MD General Practitioner,
Mireya Buitrón Ocampo	MD General Practitioner,
Nataly palacios castro	MD General Practitioner,
Nelly Arequipa Chiquito	MD General Practitioner,
Ximena Guamushig Tarco	MD General Practitioner,
Klever Fernández Ramírez	MD General Practitioner,

1. Antecedents

On 31 December 2019 the Authorities of the Chinese Popular Republic, communicated to the WHO several cases of pneumonia of unknown etiology in Wuhan, a city situated in the Chinese province of Hubei. A week later confirmed that it treated of a new coronavirus that has been designated SARS-CoV-2. To the equal that others of the family of the coronavirus, this virus causes diverse clinical demonstrations under the term COVID-19, that include respiratory pictures that vary from the common cold until pictures of grave pneumonia with syndrome of distrés respiratory, septic shock and multi-organic failure. The majority of the cases of COVID-19 notified until the moment debut with slight pictures.

The roads transmission of the SARS-CoV-2 are similar to the described for other coronavirus:

Through the secretions of people infected by respiratory drops of more than 5 micron, that are able to transmit to distances of until 2 metres.

Through the hands or the fomites contaminated with these secretions followed of the contact with the mucosa of the mouth, nose or eyes.

The SARS-CoV-2 (COVID-19) infection is characterized by producing in severe forms, a picture of respiratory failure that can evolve into pneumonia and acute respiratory distress syndrome (ARDS), presenting complications such as thrombotic phenomena and cardiac dysfunction , which

motivates admission to the Intensive Care Unit (ICU). Ultrasound, which has become a commonly used tool, can be very useful during the COVID-19 pandemic since the information obtained by the clinician can be interpreted and integrated into the global assessment during the examination of the patient. This document describes some of its applications, with the aim of providing guidance to responsible physicians. Some of its applications include: a valid diagnostic alternative that allows evaluating the degree of lung involvement, by analyzing specific ultrasound patterns, identifying pleural effusion and barotrauma. Echocardiography provides information about cardiac involvement, cor pulmonale detection, and shock states

2. Objectives

DETERMINE THROUGH THE INDICATORS OF INCIDENCE AND PREVALENCE THE LEVEL OF COVID-19 CONTAGION IN DIALYSIS ROOMS

3. Definition of case of COVID-19

PROBABLE CASE

A case I suspect for whom the laboratory tests (RTPCR), for the COVID-19 virus, are inconclusive or doubtful, and the investigation cannot be concluded (second sample requested by laboratory) or dies. A suspicious case for whom the Laboratory test (RTPCR) could not be performed for any reason (these could be deceased that the sample could not be taken).

SUSPICIOUS CASE

A patient with a respiratory illness (fever / and at least one

sign / symptom of respiratory illness. For example, cough, shortness of breath) and a history of travel or residence in a country or locality in Ecuador, reporting community-transmission of COVID-19 disease, during the 14 days before the onset of symptoms. A. Patient with acute respiratory illness of any level of severity that includes at least one of these signs / symptoms: fever, cough, or shortness of breath and with any of the following:

A patient with an acute respiratory illness who has been in contact with a confirmed or probable COVID-19 case in the last 14 days before the onset of symptoms. Patients with severe acute respiratory infection characterized by fever, cough, respiratory distress and requiring hospitalization, with no identified etiology. Clusters of SARI or pneumonia: two or more cases in members of the same family, same workplace, or same social networks. An abrupt increase in SARI cases: unexpected changes in the trend of respiratory disease observed in routine surveillance.

CONFIRMED CASE

Suspected case with laboratory confirmation of coronavirus (COVID-19), regardless of clinical signs and symptoms. (WHO, Global Surveillance for human infection with novel coronavirus COVID-19, 2020). Important: These case definitions will be modified according to the epidemiological behavior of the disease. SOURCE: MSP April 2, 2020.

4. INCIDENCE

It is the number of new cases of a disease, symptom, death or injury that occurs during a specific period of time, such as a year.

Incidence shows the probability that a person in a certain population is affected by that disease.

5. PREVALENCE

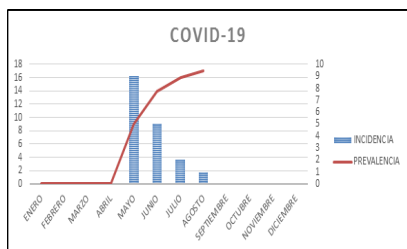
It is the proportion of individuals in a population that present the event at a given moment, or period of time. For example, the prevalence of diabetes in Madrid in 2001 is the proportion of individuals in that province who in 2001 suffered from the disease

6. UNIVERSE

THE STUDY WAS CONDUCTED WITH A POPULATION OF 200 PEOPLE INCLUDING STAFF AND PATIENTS WITH CHRONIC KIDNEY FAILURE

7. ANALYSIS

ANALYSIS Universe: 200 Among patients and staff, confirmed: 28 (universe: 12.17%) prevalence; symptoms / confirmed: Tiredness: 14 (50%), asymptomatic: 12 (42.85%), cough; 10 (35.71%), desaturation: 8 (28.57%), fever: 8 (28.57%). Beta 2 microglobulin: 20 positive patients / 10 (> 5mg / l) Rx: non-significant data. CRP: 16 Positive / 9 (> 6mg) Seroconversion HB: 6 Positive / 8 (Table 1: positive, 0: negative) Tuberculin: 3 positive / 8 (Table 1: positive, 0: negative)



8. Blue PROTOCOL

In lung ultrasound, the ribs, the air in the lung act as barriers to ultrasound, and cause artifacts that we must recognize and interpret for a correct diagnosis. Pulmonary ultrasound has progressively developed both in its conceptual aspects and in its practical application at the bedside of patients.

The ultrasound equipment necessary to perform the technique only requires a two-dimensional image and in M mode, but currently almost all modern equipment is equipped with other possibilities (Doppler, color, harmonics, etc.). More important is the availability of multi-frequency probes or various types of probe. Probes with frequencies between 3.5-5 MHz, used for abdominal and cardiac exploration, provide adequate visualization of the deep planes, and allow the characterization of consolidations and pleural effusion. For the most superficial structures, that is, the pleura and the signs and artifacts that are generated from it, linear transducers with a frequency greater than 5 MHz provide much better resolution. The shape of the probe used (linear, convex or sector) will also depend on the area to be studied, and will be convex if the intercostal space is narrow, to avoid acoustic interference produced by the ribs.

Sector transducers are suitable for direct intercostal examination of the pleural space, as it presents a very narrow view in the near fields and the pleural space is identified by artifacts.

In patients, the examination is performed in the supine position, which allows an easy anterolateral approach (Figure 1). 4 areas are sufficient in each hemithorax, and they divide it into 2 zones, anterior and lateral, with the anterior axillary line as the dividing line. In turn, each zone is divided into an upper and a lower one according to a horizontal line that would cross the union of the middle third with the lower third of the sternum. The examination would begin in the anterior superior area and end in the lower lateral area, with longitudinal and transverse sections. Sometimes the study of the dorsal areas is necessary, for which a slight inclination of the patient is necessary, which is achieved with a slight adduction of the ipsilateral arm or by sitting it.

Lines A: horizontal hyperechoic lines parallel to the pleural line that are located at a multiple distance of that between the transducer and the pleural line equal to the distance between the skin and the pleura. The deeper the probe, a greater number of lines appear. - B lines. They are hyperechoic lines that start vertically from the pleura, erase the A lines and reach the end of the screen like a laser. Its movement is synchronized with pleural gliding.

If we apply the M mode, two well-differentiated areas are distinguished, which make up the seashore sign: the upper part, which corresponds to the thoracic wall, formed by parallel horizontal lines (the sea), and the lower part, from the pleura, grainy in appearance, like beach sand.

The main characteristic to observe is the presence of pleural sliding or sliding on the pleuropulmonary junction surface, which necessarily occurs with insufflation and lung emptying during the respiratory phases

POSITIONING THE PATIENT:

SUPINE POSITION: it is the appropriate position to verify the upper or lower pulmonary BLUE points

LATERAL RECLINED POSITION: anterior and lateral thoracic walls to detect pleural effusion and pulmonary consolidations. This position is suitable to verify point (postolateral alveolar and pleural syndrome), diaphragm point and Blue point.

PRONE DECUBIT POSITION: Keep one side of the patient's body slightly elevated, scan as much dorsal as possible for small amounts of pleural effusion and small areas of consolidation.

STANDARD POINTS IN THE BLUE PLUS PROTOCOL:

SUPERIOR BLUE POINT: located between the third and fourth

metacarpophalangeal joints of the upper hand

Lower Blue Point: located in the center of the palm of the lower hand

Diaphragm Point: the lower border of the little finger of the lower hand constitutes the diaphragm line and the diaphragm point is where the rearward extension of the diaphragm line intersects the midaxillary line

Plaps Point: located where the backward extension of the lower blue point intersects the posterior axillary line

Posterior Blue Point: located in the area between the scapular line and the spine

9. CONCLUSIONS:

In a 7-month pandemic period from January to July, 12.17% of patients and IARE C.P staff presented positive COVID-19, this being the deceased, prevalence of unity; therefore mortality is only 17.14% of them. Non-significant symptomatology. Apparent direct relationship between COVID-19 and elevated CRP, B2 microglobulin and HB seroconversion. Of the confirmed patients and personnel, 4 required hospitalization (28.57%). **INCIDENCE:** in the month of May 0.07% and in the month of June:0.04%

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