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Editorial

article
One world, one health: The novel coronavirus COVID-19 epidemic

Un mundo, una salud: la epidemia por el nuevo coronavirus COVID-19

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In God we trust. All others must bring data.
W.
Edwards Deming

The world today is watching the evolution of the situation in China with concern and fear, where at the end of 2019 an increase was registered in patients with a respiratory infection infected by a new coronavirus. This has now been identified with the acronym COVID-19, pinpointed in the city of Wuhan. The appearance of a

new
infectious disease is always a complex
situation,
especially if it is an epidemic of significant extension or
severity.

The
cases increased rapidly in Wuhan and Hubei Province,
and
they extended in smaller numbers and with limited transmis-
sion
chains throughout China. Imported cases and secondary cases
have
been reported in more than 24 countries. On January 30, 2020,
WHO
declared

this
epidemic as a Public Health Emergency of Inter-
national
Concern.
The

COVID-19
virus has been identified and sequenced
genetically.
[1]
It is related to other coronaviruses that circulate in
bats
(including the SARS coronavirus), leading to the belief that its
natural
reservoir is probably these flying mammals. The interme-
diate
host, which is probably another mammal, has not yet been
identified.
The point of contact with humans could be a live animal
market
in Wuhan, which today is shut down.
[2,3]
It is possible that this virus went unnoticed for several weeks in a
city
of 11 million inhabitants and at the beginning of the flu season,
until
the alert was given due to the increase in severe cases (pneu-
monia)

and it was possible to isolate and identify the coronavirus COVID-19 in several patients. The jump of a virus from animals to humans (spillover) is common among coronaviruses. This happened with SARS in 2002–2003 and with MERS since 2012. It has been shown that the 2019-nCoV virus is transmitted easily from person to person, as groups of intrafamily cases and transmission to health personnel have been identified. The transmission capacity, which is usually estimated using the so-called basic reproduction number or R0, is a controversial variable of this new disease. An R0 value less than 1 indicates a low extension capacity of an infectious disease, while R0 values

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greater than 1 indicate the need to use control measures to limit its extension.

Reliable estimates place the R0 value of the COVID-19 in 1.4–2.5, similar to the R0 of the coronavirus SARS at the beginning of the epidemic (2.2–3.7). This value was reduced to an R0 of 0.67–1.23 at the end of the epidemic. By contrast, the coronavirus MERS has always remained at lower R0 values (0.29–0.80).[4]

It seems that the COVID-19 could be more easily transmitted than SARS. However, there is a need to exercise caution. The R0 value indicates the

transmission potential of an infectious disease. A higher R0 does not mean a more extensive disease. The flu, for example, whose R0 value ranges around 1.3 each year, infects millions of people worldwide. Neither does the R0 indicate the transmission rate either. R0 is also an average value: there are people who, although infected, will not transmit the disease to anyone, while others may transmit it to many more people. These individuals, called «super-spreaders», were protagonists of two extraordinary events during the SARS epidemic in Toronto (Canada) and MERS in Seoul (South Korea) when, from one patient who was a «super-spreader», dozens of patients, visitors and health personnel from two hospitals were infected. Control measures, such as those used in China, can significantly reduce the R0 of a disease. In this initial phase of the COVID-19 epidemic, its R0 value is being estimated from multiple assumptions and using complex mathematical models. As epidemiologists, some of us approach these mathematical models with circumspect: a popular saying states «All the models are wrong, but some are useful». This saying also applies to another controversial parameter appearing at the start of all epidemics: the number of real cases. Current statistics, without entering into discussions about the Chinese authorities' communication policy or transparency, probably reflect a bias towards the most severe cases which are the most likely to have reached out to the health system. Numbers for

mild
cases and asymptomatic cases are likely to be lower than
reality.
In recent weeks the detection capacity (RT-PCR test) of
infected
patients in the epidemic zone has increased, and this fact
could
partly explain the increase in case numbers, although many
patients
may still be undiagnosed. This possibility leads to the dis-
cussion
about the estimation of the fatality rate of this disease,
which
currently stands at around 2.0%, with more than 40,000 cases
and
1000 deaths.
5
The mortality rate for SARS was around 10%, so
the
disease caused by COVID-19 seems, for now, to be less severe.
The
most likely route of transmission of COVID-19 is by con-
tact
and respiratory droplets (aerosols), over short distances (1.5 m)
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and also through fomites contaminated by said aerosols. A certain
degree
of airborne transmission cannot be completely ruled out.
Prolonged
contact is the highest risk, with infection being less likely
from
casual contact. Symptomatic patients produce the majority of
infections,
however there may be infections from asymptomatic
patients
and even from people in the incubation period of the
disease,
although some initial data provided have proved to be
mistaken.

6,7
This type of transmission, although less frequent,
would
further complicate disease control.
The
recommended isolation measures are the normal measures
for
this type of transmission, i.e. distance between patients, use of
individual
rooms (if possible with negative pressure), use of water-
proof
gowns, gloves, goggles and surgical masks or FFP2 masks
for
health personnel, except in situations of special risk (see the
updated
protocols).
8–11
Clinically it seems that the disease affects slightly more men
(50–60%),
who are middle aged, with underlying illnesses and who,
at
the

beginning
of the epidemic, were exposed to the animal mar-
ket
of Huanan (Wuhan). The incubation period is around 5 days
(range:

4–7
days) with a maximum of 12–13 days. The most com-
mon
symptoms are fever, cough, dyspnea and myalgia or fatigue.
About

20%
of patients present severe complications, the most fre-
quent
being pneumonia and adult respiratory distress syndrome.
80%

of
complicated cases are persons over 60 years of age. More
data
are needed to be able to consider this clinical condition as
standard,

since these data mostly correspond to the initial severe cases, the only ones published to date.[12–15] The relative lack of more detailed clinical and epidemiological descriptions or a larger number of case series is disconcerting.

There is no specific treatment, although different experimental treatments with antiviral drugs (Lopinavir/Ritonavir; Remdisivir) and interferon are being used. We do not have any experimental vaccine available, and it is not probable to expect it within a year in the best of cases.

The current situation in China, especially in Hubei, is certainly very difficult and could become more complicated. China, the world's second economic power, is a very large country with 1.4 billion inhabitants. China is ranked 153, out of a total of 167 countries, in the Democracy Index.[16] The Chinese government will place a large part of its world prestige on the line if it fails to adequately control this epidemic and if it does not openly share current and updated data of the epidemic, its progress, its doubts and its problems with the rest of the world. From a scientific point of view, there has been greater speed and transparency than there was in 2002–2003 with SARS, but there are reasonable doubts about some of the information provided and decisions taken initially by the Chinese

local health authorities, mostly subject to political power. The city of Wuhan is a great communications hub: more than one million people enter and leave by train every day and its airport supports an annual traffic of more than 27 million people. It is estimated that, due to the Chinese Lunar New Year, more than 300,000 people left Wuhan shortly before the government implemented internal movement restrictions. China is a country much more connected to the world today than it was in 2002, when it hid the outbreak of the SARS epidemic for weeks. The Chinese megaproject called the Belt and Road initiative will connect highways, ports and high-speed trains to almost two-thirds of the world's population, including more than 70 countries. The connection of China with several countries in sub-Saharan Africa is especially critical, where the capacity to respond effectively to health threats is low and health systems are very insubstantial. There are more than one million Chinese expatriate citizens working in Africa today. The connecting routes of the Belt and Road Initiative could also be the expansion and extension routes of any epidemic if it is not quickly controlled at source, now and in the future. The economic impact of any epidemic is considerable, but in this case it could reach an unprecedented magnitude. According to some estimates, a fall of 0.5–1% of China's GDP could occur in 2020. Without a doubt, this would be noticed by the whole world.

The extraordinary prevention and control measures decreed by

the
Government of China are based on the classical epidemiology:
identify
and isolate cases, monitor those contacted, and estab-
lish
restrictions, including quarantine, on mobility, avoiding events
which
congregate crowds of people. The scope of these measures
has
no historical precedents, due to the volume of people affected
(tens
of millions).
The
risk of importing cases to the EU is low. In Spain, this risk is
around
5–10%, according to some estimates.
17
Imported cases have
already
been detected in Germany, Spain, France, Finland, Italy, the
United
Kingdom and Sweden, with some secondary cases.
In
Spain, the prevention, surveillance and control systems for
this
new disease are adapted to the guidelines and protocols of
the
ECDC and the WHO. The Ministry of Health, through the Health
Alert
and

Emergency
Coordination Center, leads the response effec-
tively,
working with the Public Health Services of the Autonomous
Communities.

The
most likely scenario in Spain today is having to
deal
with a limited number of imported cases and possibly some
secondary

cases.
The preventive actions derive from classical epi-
demiology:

detect, isolate and treat the cases and monitor any possible

contacts.

The current epidemiological and clinical criteria will most probably change during the course of the epidemic. However it is essential to continue to adhere to the criteria to optimise the detection of possible cases and the use of resources to deal with this threat, especially at the height of the flu season.[18–20]

The Public Health System has always been the ‘Cinderella’ of the health system and, unfortunately, that is what we are used to. Now, more than ever, we must all work as a team to give an adequate and proportionate response to this new disease: we have just one world and one health. It is necessary to work calmly, thoroughly, and with sound judgement, constantly evaluating its short, medium and long term evolution in this changing, uncertain situation. As the Director General of WHO indicated, «This is the time for facts, not fear; for science, not rumours; and for solidarity, not stigma».

For the Chinese horoscope, this year 2020 is the year of the rat. According to this horoscope, a firm commitment must be established for the radical resolution of problems: a tree cannot be cut down by removing the leaves, the aim is to remove its roots permanently.

So be it with the COVID-19.

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