



Post-pandemic alluvium of unwelcome guests in the ICU, general wards and community

Aluvión postpandémico de huéspedes indeseables en la UCI, salas generales y comunidad

Inundação pós-pandêmica de hóspedes indesejáveis na UTI, enfermarias gerais e comunidade

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There is no act or event without consequences and costs especially something as overwhelming as a pandemic that has exposed various flaws in health systems and favored medical conducts that are often far from the best evidence, such as the indiscriminate prescription of antibiotics, as if the central object in a medical act was the duty to issue a medication prescription, a kind of compulsion inherited for generations and fostered through our traditional systems of medical education. This is a global drawback whose consequences we are just beginning to glimpse, and which will probably be with us for a long time, impacting epidemiology and our clinical practice in different ways inside and outside the ICU's.

Thus, not only are infections caused by multi-resistant germs appearing more frequently in the community but a significant number of viral respiratory infections, some of them serious, at the same time as anticipated the SARS-CoV-2 pandemic has not yet ended,¹ with a huge but dark spike in new cases occurring right now in China, the world's most populous country and with only around 5% of eligible Americans having had their booster shots (nobody knows this figure in Mexico) and like every winter, cases of seasonal influenza are on the rise. So, there are some voices that are considering there is a «tripledemic» on the way this winter.

Metapneumovirus, influenza, parainfluenza, rhinovirus, different coronaviruses, and respiratory syncytial virus are currently frequently documented in the diagnostic approach of many severe pulmonary infections, with the frequent arrival of an ancient acquaintance of humanity, the mycobacterium tuberculosis (Tb), the second after SARS-CoV-2 deadliest infectious killer.

As we know, COVID-19-mediated dysfunctions in effector lymphocytes may not recover absolutely even six months after infection, and millions of patients with acute respiratory failure secondary to severe COVID-19

have received corticosteroids as part of its regular treatment.² These immune-system problems may offer advantageous conditions for Tb bacilli to advance, the bacterium can survive in tissues for decades even in immunocompetent people.

Recently, the World Health Organization (WHO) has warned about the new spread of Tb, a fact that strikes for the first time in the last 20 years due to COVID-19 and the confinement imposed throughout the world by the pandemic, which suddenly modified the organization of health systems, diverted economic resources, significantly limiting accessibility to screening tests and treatment possibilities, which contributed to a 4.5% increase in its incidence in just one year, with a global total of 10.6 million cases in 2021 and similar or worse figures are expected at the end of this year.

Of primary concern are the drug-resistant strains of the bacillus, that increased 3%, as well as the preliminary data that suggest an increase in the mortality from this disease from the start of the pandemic in 2020, reversing the progress made in this regard between 2005 and 2019, when a decrease in its lethality was documented around of the world. In 2021 alone, there are records of 450,000 new cases of rifampicin resistant tuberculosis.

The WHO globally estimates around 1.6 million deaths from Tb in the past year (including 187,000 among HIV positive people) according to its 2022 Global Tb report, a significant setback that places us at levels of five years ago and an increase in mortality of more than 14% compared to 2019 in pre-pandemic times.³ Some studies found that in addition to the problems with Tb case detection, there are notable signs of deterioration in several indicators related to the severity, contagiousness and poor outcomes of Tb, which had already been suppressed for decades; as example the median 64.5-day treatment delay detected in the 2017-2019 period increased significantly to 113.5 days in 2020 ($p = 0.001$) in Malatyá, due primarily to patients' reluctance to visit a health care facility and catch COVID-19. Other authors have documented an increase in the rate of pulmonary Tb detected amongst hospitalizations during the COVID-19 pandemic, while detection of extrapulmonary Tb remained unchanged; due to improved surveillance and chest imaging utilization.⁴

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The COVID-19 pandemic has inflicted a substantial workload on health care facilities, especially in the departments of pulmonary, critical care and infectious diseases, which are critical for timely Tb diagnosis. Therefore, the COVID-19 pandemic has the potential to exacerbate Tb burden on societies by negatively impacting health care systems in addition to its effects on personal and social well-being.

Dr. Tedros Adhanom Ghebreyesus, WHO Director-General recently aforementioned: «If the pandemic has taught us anything, it's that with solidarity, determination, innovation and the equitable use of tools, we can overcome severe health threats. Let's apply those lessons to tuberculosis. It is time to put a stop to this long-time killer. Working together, we can end Tb», words that hopefully the wind does not take away; it is only through multi sectoral collaborations that address the personal, societal and health system layers of care that we will end Tb.

Covid has changed the cycle of other known viruses and to further complicate the current scenario, the CDC surveillance has shown an increase in respiratory syncytial virus (RSV) detections and RSV-associated emergency department visits and hospitalizations in multiple U.S. regions, with some regions nearing seasonal peak levels,⁵ having also increased in Canada, Mexico, Brazil and Uruguay among others. Clinicians including critical care physicians and public health professionals should be aware of increases in respiratory viruses, including RSV.

RSV (sin-SISH-uhl), a common respiratory virus discovered in 1956 that usually causes mild, cold-like symptoms, has always existed. Most people recover in a week or two, but RSV can be serious, especially for infants and older adults. RSV is the most common cause of bronchiolitis and pneumonia in children younger than 1 year of age in the United States. The typical impact of RSV in older adults may be similar to that of non pandemic influenza; it has been found to produce consistently 2 to 5% of adult community-acquired pneumonias.⁶ If each year about 120,000 adults in the United States are hospitalized for serious RSV infections, mainly cardiac patients, with immune problems or COPD, and about 10% of them die, we

can better estimate the dangerous point we are at now, winter is just beginning.

Flu hospitalization rates are also at their worst in more than a decade, according to the CDC, with about 30 American states reporting high or very high levels of the virus weeks earlier than the usual peak period.

In one way or another, the intensive care specialist must be aware of these variations and develop a high index of suspicion for these infectious agents in the critically ill patient. There is no specific therapy for all of them, but there is for many, de-escalating non-indicated antibiotics can signify a key advantage in itself. New technologies applied to the timely diagnosis of infectious diseases currently provide great help, the Xpert MTB/Rif is a real-time polymerase chain reaction (PCR) molecular test capable of simultaneously detecting the existence of *M. tuberculosis* and resistance to rifampicin (RR-TB) within only 2 hours, as well as diverse platforms for the identification of considerable viral panels and other opportunistic respiratory agents that have been growing and updating.

Perhaps that case of severe pneumonia without an identified germ and that does not improve with the usual management of the ICU, may correspond to this new reality.

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