

COVID-19: Armageddon before light?

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ARTICLE INFO

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Key words:

coronavirus, COVID-19, laboratory,
outbreak, testing

MANUSCRIPT

COVID-19, five letters, two numbers, five months, three billions. Three billion people confined in a box (1,2). But who turned the light off? Humanity did not expect this. The Doctors did not expect this. Bill Gates did... (3). Unthinkable, but excruciatingly real. The impact of the wave seems indelible. And yet, it's 2020 and everything is possible, AI is more than a promise, it exists. Anybody can become somebody, and any start-up company can become bigger than a State. But who turned the light off?

COVID-19, invisible but potentially on everyone's hands. Nowhere, but already everywhere, even there. In a continuous and disproportionate flow of information, data, the incredulous faces of men, women or children, caregivers and patients pass on our screens, at every moment. The distress of families, the distress of caregivers freezes us. Presidents, ministers, hospital directors in search of hope and solutions and... tests. "Test, test, test"...

Our lives, we walked in crowded streets, we used crowded public transport to get to our laboratories, and then nothing. Locked down. Thousands of patients seen per day and thousands of tubes analyzed every day, and then almost nothing. We just test. Locked down.

On arrival, the repercussions of this pandemic are incommensurate with what we have already experienced. Human and health consequences, hundreds of thousands of sick people and a high death rate. Intensive hospital and care capacities under extreme tension. A crying need for artificial respirators. Caregivers subjected to severe ordeal and extreme cases, confined, stressed populations, scenes of panic in supermarkets, closed schools. Locked down.

But it's a tsunami, a wave train. If the first wave is about health, the next are about economy, social issues... And they will be bigger... If all world stock exchanges are known for dizzying falls, the economic repercussions even for health care players are also gigantic and the losses for laboratories and the *in vitro* diagnostic industry will be colossal with several months of very limited activity. And yet, "test, test, test".

The global response to the darkest unicorn ever that perfectly surfs on the wave of globalization is protectionism. It spreads, we lock and then we lack. The defective globalization, lack of supply of masks, impact on the pre-analytical phase with a lack of swab and on the analytical phase with lack of reagents. We should answer together, but we broker alone and compete. Business first. Our laboratory activity has changed from traditional assays to the thousands of COVID-19 PCR tests and a lack of assay capacity defective by this pandemic requiring thousands of molecular biology tests. We are ready. But we lack.

We lack coordination and that is the most glaring lack, a simple consequence of our withdrawal behavior. The picture is very dark and close to Armageddon. Could we have anticipated it?

(3). What if nature wanted to reclaim its rights in the face of an increasingly aggressive human footprint? (4).

However, even on the darkest days, glimmers of hope appear.

First, because we are facing through unprecedented mobilization. The medical and scientific world faces, supported by a citizen impulse in all countries. Solidarity is organized and takes cross-border orientations, medical capacities are shared (5). This solidarity is also cross-business and cross-sector. Willingness to coordinate European logistics, manage logistics and manage population testing. Several countries in the Africa and in the Caribbean are mobilizing resources to implement testing strategies.

Digital platforms are fostering international cooperation, remote work, and mass communication, faster than ever.

Technology also comes in support. Epidemiological and big-data monitoring tools allow real-time monitoring of the dispersion of the pandemic with clinical outcomes monitored in real time.

We hope, too, as through darkness comes light. If Labs have been confined for years in the basement of the temple of Medicine, or second role players, they are now in first line. Clinical biology and the *in vitro* diagnostic industry are ready. Through screening tests, through their technological capacity to develop molecular biology capacities in real time, they will also respond to the global call. They will test, they will help. But they will need help too. Light gives powers but also responsibilities. Labs lack.

A capacity for adaptation and technological rebound thanks to rapid tests, serological tests. A capacity to respond to the need for critical hospital units but also to triage in emergency situations through point of care testing. But we will need to be accompanied, to coordinate and to validate solutions and pathways altogether.

If our discipline is brought to light as never before, pushing away a lack of recognition, it still suffers from internal divisions that do not allow exploiting its full potential. Let's break them down, a lab is a lab.

Through biological profiles, the disease is better phenotyped, better understood and severity profiles that can be influenced by ethnicity (2,6). We understand that the response to the disease may vary according to individuals, ethnicities and that personalized approaches could be considered (7,8). Science and laboratory medicine are progressing. We also understand that we will be actors in future prevention strategies (9).

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