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SPECIAL ARTICLE

Behind the numbers and the panic of a viral pandemic: fixed restrictive oncology guidance may jeopardize patients' survival

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Summary

To protect cancer patients from COVID-19 exposure, prioritization strategies are being implemented at global level. Measures include use of tele-health services, deferring elective surgeries, delaying non life-saving therapies, interrupting maintenance and supportive care regimens and suspending screening and regular follow-up visits.

Nonetheless, the risk of infection may not always outweigh oncology treatment benefit. Lives of most oncology patients depend on their ability to receive medical, surgical and radiotherapy care. Postponing screening, follow-up and radical surgeries increase patients' risk of developing metastatic disease.

A viral pandemic lasts long time and exhibits seasonal and geographical variations. Though vaccines will be available only in the 2021, a global, aggressive, all-embracing and protracted slowdown of oncologic activities will severely jeopardize patients' outcomes.

A present international oncologists' panel, ECPC and FAVO, strongly suggest that Hospital measures in a specific geographical area/Nation should be in line with the local epidemic, and restrictions adopted should be adapted and stratified over time.

Key words: *COVID-19,cancer patients,survival,Federation of Oncology Volunteer Associations (FAVO), European Cancer Patient Coalition (EPCC)*

Report

Cancer patients are at particular high risk for serious illness and death from COVID-19. National and international professional oncology societies promptly developed guidance in order to protect patients and reduce the risk for exposure [1]. Prioritizing emergent treatments and surgical procedures and minimizing the number and duration of hospital visits are some of the measures recommended by oncology societies. This can be achieved with the use of tele-health services and individualized prioritization strategies such as deferring elective surgeries, delaying therapies, interrupting maintenance and supportive care regimens and suspending screening and regular follow-up visits.

The pandemic has altered patients' routine. Nonetheless, it should be admitted that, due to the novelty of this infection, the published oncology recommendations both at national and international level were mostly based on logical assumptions and local experience rather than on firm evidence or expertise.

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Does the risk of infection outweigh oncology treatment benefit? Postponing screening, follow-up and radical surgery increase patients' risk of developing metastatic disease. For how long should patients' treatment be delayed? Does the epidemiology of a viral pandemic justify compulsory long delays and breaks of medical services in every geographical area?

Obviously one size does not fit all.

As a viral threat, the COVID-19 pandemic is likely to exhibit seasonal variation, with southern and northern hemisphere countries and continents experiencing different levels of vulnerability according to their geographical parallel, weather and local microenvironments. In many northern hemisphere countries, the acute phase of the pandemic is still violently impacting health systems, and summertime is awaited to ameliorate and contain the infection. Different areas within the same latitude have shown various infection curves. Also, many countries are still vulnerable due to radical restrictive measures adopted in the first phase of the pandemic and the resultant low penetrance of the infection. Winter areas in the southern hemisphere are now at particular risk from the pandemic and we're already witnessing an escalating number of new cases and deaths in Argentina, Bolivia, Brazil, Burundi, Chile, Madagascar, Peru, Rwanda, South Africa and Zambia [2"] (Figure 1).

So, for how long should oncology centers and hospitals slow down globally? The answer probably is that guidance for professionals and institutions should be in line with the local epidemics of the pandemic. Restrictive measures adopted in a specific geographical area should be stratified and adapted over time based on the local risk of contagion. Just slowing-down cancer center activities globally for months does not make a lot of sense. Should we close cancer centers and hospitals down, in northern and southern hemispheres until March 2021 when vaccines against COVID-19 might be available?

Otherwise, the fear of infection will interfere with the continuity of care for cancer patients.

Even though every patient visit to a healthcare facility exposes them to the risk of contracting the virus, the lives of most oncology patients depend on their ability to receive medical care and any treatment delays will cost lives.

The continuum of care is of particular importance when managing patients with cancer. Retrospective cohort studies have shown that the outcome of patients with cancer diagnosed/admitted to hospitals on weekends or holidays is inferior to that of working days [3]. Holiday periods have a similarly negative effect on outcomes [4]. Thus, the ability to receive prompt and comprehensive care is important for cancer patients. Global, aggres-

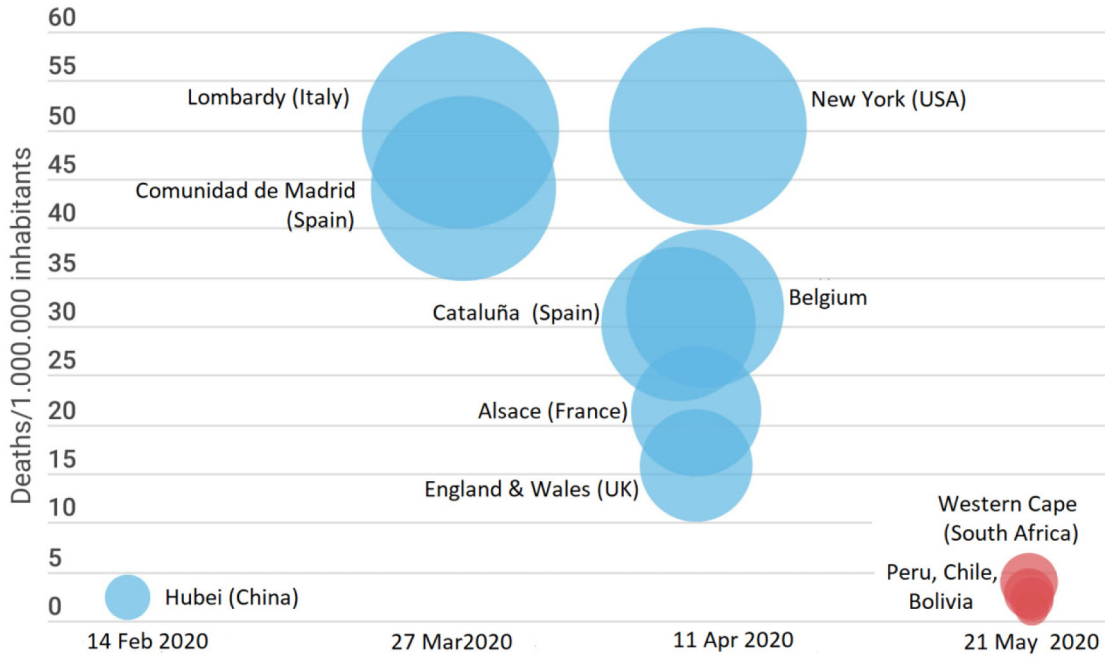

Figure 1. COVID-19 peaks of deaths at different time points in different areas of North Hemisphere and actual arising of deaths in South Hemisphere areas. Some areas of south hemisphere have already reached and overcome the peak of deaths of Hubei (China). *North hemisphere (blue):* Hubei (China), Lombardia (Italy), Comunidad de Cataluña (Spain), Comunidad de Madrid (Spain), Belgium, Alsace (France), England and Wales (UK), New York (USA). *South Hemisphere (red):* Bolivia, Peru, Chile and Western Cape (South Africa).

sive, all-embracing and protracted slowdowns of hospital and cancer center activities will probably jeopardize outcomes rather than protect patients.

Since the penetrance and timing of infection is not the same in different countries, oncology guidance development should be stratified by local infection risk. In geographical areas where the penetrance of the infection is null or well-controlled (by general public population preventive measures), the delivery of care in a protected environment is more useful than patient over-protection by delaying oncologic activities. Readiness plans for the immediate switch of hospitals and cancer center functional levels from permissive to more restrictive (according to the acute level of pandemic) should be taken into account in oncology guidance delivery.

Call for help from the entire oncologic world

Kathi Apostolidis, President of ECPC- European Cancer Patients Coalition, the largest European patient umbrella organization with +450 organizations in 47 countries, and Francesco De Lorenzo, President of FAVO - Federation of Oncology Volunteer Associations, comprising +500 associations linked to the Federation, expressed their anxiety and concerns about the long-lasting and all embracing lock down of hospitals and cancer centers that is actually strangling cancer diagnosis, treatment and palliation. FAVO unanimously voted the present positions statement, underscoring the imperative need for the immediate return to normal oncology treatment and continuity of care, as they have had already emphasized with their conjunct press release together with AIOM (Associazione Italiana di Oncologia Medica), AIRO (Associazione Itlaiana Radioterapia e Oncologia Clinica), SICO (Societa' Italiana Chirurgia Oncologica), SIPO (Societa' Italiana Psico Oncologia), and FNOPI (Federazione Nazionale Ordini Professioni Infermieristiche) (Rome 14 May 2020). As per IQVIA survey Data, in Italy COVID-19 pandemic was associated with a 52% reduction in diagnosis and biopsies, together with a delay in 64% of surgeries and 57% of patients week/visit. A strong reduction in new cancer diagnoses was also recently reported from the Netherlands [5], while according to a UCL study (University College of London) with DATA-CAN, the COVID-19 emergency in England could result in at least 20% more deaths over the next 12 months in people who have been newly diagnosed with cancer [6].

Determining how, when, where and in which way the continuum of cancer care can be immediately re-established and guaranteed will probably save more lives rather than simply locking-down institutions and medical services. Possibility of prompt tele-consultations and home-supportive care delivery should be also taken into account where high local level of a viral epidemic may severely compromise the safety of cancer patients while accessing their cancer centers. Readiness plans and service delivery stratification by areas epidemics should be strongly taken into account by local health systems and medical associations while tailoring cancer services. Certainly, lives of patients at global level cannot wait vaccines until March 2021 for their treatment and care.

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DM conceived the initial idea and discussed it with AV, DT, KK, KA, MD, FDL, GZ, SG, IG and MT. They agreed on the main research points and scheduled the project. All the authors discussed the resulting research points with the International Oncology Panel, FAVO and ECPC. After discussion DM, MD, AV, DT, KK, KA, FDL, GZ, SG, IG and MT wrote a draft and re-discussed it with each member of the international oncology panel. The final manuscript was unanimously voted by all the International panel and by FAVO committee and ECPC president. All cooperators discussed on and agreed with the manuscript content.

Conflicts of interest statements, role of funding source

All coworkers cooperate in a voluntary form without any form of contribution.
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References

1. Mauri D, Kamposioras K, Tolia M, Alongi F, Tzachanis D; International Oncology Panel and European Cancer Patient Coalition collaborators. Summary of international recommendations in 23 languages for patients with cancer during the COVID-19 pandemic [published online ahead of print, 2020 May 13]. Lancet Oncol 2020;10.1016/S1470-2045(20)30278-3. doi:10.1016/S1470-2045(20)30278-3
2. COVID-19 Coronavirus Pandemic.Reported Cases and Deaths by Country, Territory, or Conveyance https://www.worldometers.info/coronavirus/
3. Lapointe-Shaw L, Abushomar H, Chen XK et al. Care and Outcomes of Patients With Cancer Admitted to the Hospital on Weekends and Holidays: A Retrospective Cohort Study. J Natl Compr Canc Netw 2016;14:867-74. doi:10.6004/jnccn.2016.0091
4. Lagergren J, Mattsson F, Lagergren P. Prognosis following cancer surgery during holiday periods. Int J Cancer 2017;141:1971-80. doi:10.1002/ijc.30899.
5. Dinmohamed AG, Visser O, Verhoeven RHA et al. Fewer cancer diagnoses during the COVID-19 epidemic in the Netherlands [published online ahead of print, 2020 Apr 30] [published correction appears in Lancet Oncol. 202o May 4] Lancet Oncol 2020;S1470-2045:30265-5. doi:10.1016/S1470-2045(20)30265-5.
6. Deaths in people with cancer could rise by at least 20%. UCL News. https://www.ucl.ac.uk/news/2020/apr/deaths-people-cancer-could-rise-least-20.