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Dealing with cancer screening in the COVID-19 era

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SUMMARY

OBJECTIVE: This article aims to alert health professionals for cancer screening in the face of the possibility of new waves of disease.

METHODS: A narrative review was conducted through a search in MEDLINE, Lilacs, Chinese Biomedical Literature Database, and international medical societies publications.

RESULTS: Breast cancer: in high-risk patients (confirmed familial cancer syndrome or with high-risk tools scores), clinicians should act according to usual recommendations; in average-risk individuals, consider screening with mammography with a longer time span (maximum of two years). Cervical cancer: women turning 25 years old who have already been immunized and with no previous Pap test can have the test postponed during the pandemic; if there is no previous dose of Human Papillomavirus vaccination, initiation of screening should be recommended following a more rigid approach for COVID prevention; in women over 30 years of age who have never participated in cervical screening, the first screening exam is also essential. Colorectal cancer: if the individual is at elevated risk for familial cancer, the screening with colonoscopy according to usual recommendations should be supported; if at average risk consider screening with Fecal Occult Blood Test. Prostate cancer: there is a trend to postpone routine prostate cancer screening until the pandemic subsides.

CONCLUSIONS: The decision to keep cancer screening must be discussed and individualized, considering the possibility of new waves of COVID-19.

KEYWORDS: Early detection of cancer. Neoplasms. Coronavirus infections. Pandemics.

INTRODUCTION

The COVID-19 pandemic has brought several challenges to healthcare systems, with a need to adopt interpersonal distancing, reduce activities to prevent new cases of coronavirus, make resources available to deal with the outbreak and, at the same time, face the dilemma of maintaining primary assistance. Regarding cancer patients, to minimize the risk of this vulnerable population, several medical societies worldwide have recommended canceling, postponing, or adapting non-urgent cancer-related procedures[1-3]. Even though COVID-19 effects on cancer are not limited to the care of patients already diagnosed, the pandemic has also impacted screening and delayed the diagnosis of cancers that benefit from screening tests, such as breast, cervix, prostate, and colorectal cancer.

The intensity and duration of measures against COVID-19 will depend on the dynamics of virus transmission, population immunity development, or the availability of an efficacious treatment or vaccine. A recent study suggested that social distancing strategies might be necessary until 2022 if a specific treatment or vaccine to combat the virus is not available before that[4].

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While recent publications from some medical societies have supported cancer treatment continuity, with adaptations to mitigate COVID-19 risk, they have defended postponement of cancer screening procedures during the peak of the pandemic[5]. However, after the peak incidence of cases in Brasil, around July 2020, there was a flexibilization of protective measures and a consequent return to the routine of these procedures. Massive demand for medical follow-up may represent a risk of exposure to those who have had their screenings delayed.

The risk of a new COVID-19 wave is associated with the premature relaxation of protective measures, which can lead to increased transmissibility of the virus[6]. With the reopening of services and reduction of social distancing, there is a greater risk for agglomerations due to the simultaneous search for solving the accumulated demands of the population during the critical period. For this reason, there must be a prior preparation of healthcare and government services to adjust resources to face the disease.

Therefore, this article aims to alert health professionals and decision-makers and gather recommendations from leading societies for screening neoplasms during the pandemic, in case there is a second wave of the disease.

METHODS

A search through MEDLINE, Lilacs, Chinese Biomedical Literature Database, and international medical societies publications was performed to gather recommendations about cancer screening in the COVID-19 pandemic.

Theory/calculation

The proposed postponement of tests for early cancer detection can cause several consequences depending on the rates of individuals that usually are up to date with the recommended guidelines. Data from Surveillance, Epidemiology, and End Results of North American Association of Central Cancer Registries showed that the United States performed screening tests for most of the population following recommendations. Neoplasms diagnosed in the initial stages represent more than half of the total cases of all cancer eligible for screening. Prevalence of screening for breast and cervical cancer was over 70% and early cases represent 81% and 57% of total diagnosis, respectively[7]. One concern is how testing policies loosening in the current pandemic state may further change this tendency. Initially, there might be a decrease in the number of cancer cases, which can be attributed to less testing and detection due to the postponement of non-essential assistance. Then, an increase in the number of more advanced stage cancer cases is expected, which has been described as one of the features of a new wave of infection within the COVID-19 pandemic. These consequences can be even more relevant in low-income countries, where the prevalence of screening is lower, and the incidence of advanced-stage cancer is higher[8].

Recent data has shown that the number of screening tests has already declined. In the United States a significant reduction in breast, colon, and cervical cancer screening of 94%, 86%, and 94%, respectively, have already been observed, relative to averages before January 2020[9]. PSA testing for prostate cancer has also decreased by 60%. Data also shows that gastrointestinal cancer screening has decreased in most countries – 47% of gastrointestinal divisions across Italy suspended their endoscopic screening program for colorectal cancer along with 97% of responding centers across North America[10]. In the first seven months of 2020, there was a 45% reduction among mammograms performed in Brasil, compared to 2019[11]. Particularly for colorectal cancer, it is known that delaying for more than 6 months the screening with colonoscopy, after a positive fecal occult blood test result, may result in higher mortality[12].

RESULTS AND DISCUSSION

Decision-making on screening appointments should be taken when evaluating patient-by-patient risks, health-care capacity, and local stage at the COVID-19 infection curve. It is necessary to weigh the risks and benefits of maintenance of cancer screening, regarding the magnitude of the impact that delays could lead to poorer outcomes. When considering the possibility of a second wave of infection, it is important to bring back the practices already established recommendations by reference societies, thus avoiding a new adaptation period as we had in the first semester of 2020.

Among women, breast cancer is the most diagnosed cancer and the leading cause of cancer death[12]. Recommendations about mammogram frequency differ among medical societies for women with average breast cancer risk, and, to mitigate the risk of infection, the interval for testing may follow guidelines already established in some countries that suggest a relatively longer time period when compared with annual recommendations starting before 50 years of age[13]. For example, the USPS-Task Force suggests breast cancer screening with mammograms every two years in women with average risk, starting at age 50[13]. However, in patients with confirmed familial cancer syndrome or with high scores through validated risk tools, clinicians should act according to previous recommendations specific for these patients in an attempt to avoid delaying a cancer diagnosis[14].

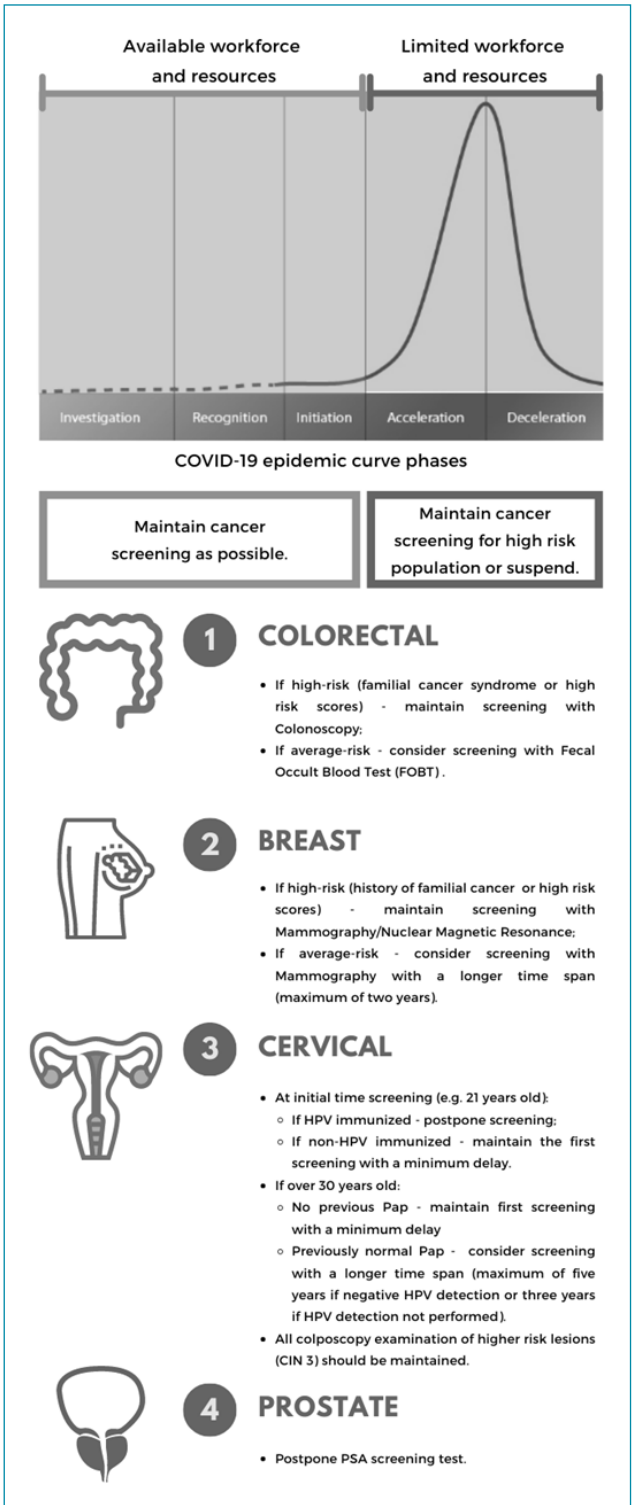
Regarding colorectal neoplasms screening, the individual risk for cancer should be evaluated. If there is a confirmed or

suspected familial cancer syndrome (e.g. Lynch Syndrome), or high scores through validated risk tools, it is suggested to maintain usual screening recommendations[14]. Colonoscopy should be restricted to those with elevated cancer risk while we face this pandemic. Annual Fecal Occult Blood Test should be considered for screening on the overall population, starting at age 45, as it does not require clinic visits[15].

Even though the incidence and mortality of cervical cancer have been declining in low-middle income countries after the discovery of the Pap test and HPV vaccination programs, it continues to be a leading cause of cancer morbidity and mortality in low and middle-income countries, which have been challenging the screening programs for decades[16]. The continuity of prevention strategies is essential to avoid worsening adverse outcomes of late cancer cases. Human Papillomavirus (HPV) vaccination program is recommended to be maintained during the pandemic. It is known that immunized individuals have significant protection for direct HPV cancers[17,18]. Regarding cancer screening, women turning 25 years old who have already been immunized and with no previous Pap test can have the test postponed during the pandemic. If there is no previous dose of HPV vaccination, initiation of screening should be recommended following a more rigid approach for COVID prevention. In women over 30 years of age who have never participated in cervical screening, the first screening exam is also essential, mainly because there is a higher chance of identifying suspect lesions after this age[19]. For women older than 30 years of age with previously normal cervical cancer screening, switching from a 3-yearly screening interval to a 5-yearly screening interval is a reasonable option if negative HPV detection screening has been previously made[20]. In those countries where the Pap test is the preferred screening method, consider increasing the time interval through more than 3 years after the last exam.

The decision to start or keep prostate screening is more complex. Prostate adenocarcinoma has a slow rate of progression[21]. An experimental study showed a reduction of only 3.1 diagnoses of advanced disease for every 1,000 men screened[22]. Is reasonable to postpone routine prostate cancer screening until the pandemic subsides[23].

Once a patient's cancer risk is established, the next step is to weigh the capacity of the healthcare system to conduct assistance needs. This requires knowledge about where the locality is in the COVID-19 epidemic curve phase[24]. During the pre-epidemic and initial phases, the healthcare workforce is intact and there is the availability of resources. Therefore, a continuation of screening for the whole population is a reasonable approach, following the suggestions described above. At a peak phase, the workforce has limited capacity. Through some strategic changes at this point, it is important to offer screening tests exclusively for the population under a higher risk to develop malignancies. In case of the massive



COVID-19 epidemic curve phases. In the figure, recommendations are tailored depending on the healthcare workforce and resource availability. FOBT: fecal occult blood test; HPV: human papillomavirus.

Figure 1. Epidemic curve phases and screening recommendations.

return of COVID-19 cases, cancer prevention programs should be re-started as soon as the post-pandemic phase is reached, considering the overload of health systems in the critical phase of the disease. Figure 1 illustrates this concept and summarizes recommendations for cancer screening that we have presented here.

Protective measures against COVID-19 specific for cancer centers have been endorsed by the American Society of Clinical Oncology (ASCO)[25]. Adaptive changes for screening sample gathering are also an alternative, as well as collecting feces for FOBT at home is a reasonable option. Health diagnostic centers should have a specific day and location to conduct prevention activities, such as mammography and colonoscopy. All those examination requests can be directly sent to the diagnostic center, avoiding the need for patient consultation. When adopted, these steps can make screening activities safer.

CONCLUSIONS

In summary, this report alerts that adaptation strategies for screening tests developed during the first semester of 2020 against COVID-19 can and should be used in the face of a second wave of infection in the future, balancing the risk of exposure to SARS-CoV-2 and late cancer diagnosis. The recommendations here described are alternatives to maintain cancer screening, as the duration of the pandemic is still uncertain. More specific measures should be tailored according to local COVID-19 status and considering the type of cancer and individual's risk factors.

AUTHORS 'CONTRIBUTION

TPF: Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft, Writing – Review & Editing. **RMA:** Data Curation, Visualization, Writing – Original Draft, Writing – Review & Editing. **DLPM:** Writing – Original Draft, Writing – Review & Editing. **LCCL:** Methodology, Supervision, Validation, Writing – Review & Editing. **GSFA:** Writing – Review & Editing. **CCC:** Writing – Original Draft, Writing – Review & Editing. **ANR:** Conceptualization, Methodology, Project Administration, Supervision, Validation, Writing – Review & Editing.

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