

Noncommunicable and Communicable Diseases: Finding Common Ground

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ABSTRACT

As the world grapples with unprecedented health challenges, such as coronavirus disease 2019 (COVID-19) and now monkeypox, the focus on traditional concerns, like maternal and child health, and relatively newer pandemics, e.g., diabetes and obesity tend to get diluted. This is especially concerning in countries which face a dual challenge of both communicable and noncommunicable diseases (NCDs). In this article, we list the factors that are common to both communicable disease and NCDs, and suggest measures to integrate procedures for their screening, management and prevention.

Keywords: COPD, cancer, diabetes, hypertension, CAD, infections

CONNECTIONS: CAUSATION, CLINICAL PRESENTATION, CARE

The term communicable diseases and noncommunicable diseases (NCDs) are based on a binary classification, which may not always be accurate. Some NCDs can be triggered by infectious agents.¹ Examples include diabetes and obesity secondary to viral infections,² Burkitt's lymphoma due to Epstein-Barr virus, cervical cancer because of human papillomavirus (HPV) and repeated viral and bacterial lower respiratory infections leading to chronic obstructive pulmonary disease (COPD). The long-term effects of coronavirus disease 2019 (COVID-19) on cardiovascular and metabolic health are being unraveled as well.³ Tuberculosis (TB) and human immunodeficiency virus (HIV) are two "chronic" communicable diseases, which are associated with a relatively high NCD burden as well.^{4,5}

Quite often, people living with NCDs present to the health care system with a communicable disease.

People living with diabetes, COPD and cancer are more prone to infections, due to their immunocompromised state.¹ At other times, management of acute disease may lead to iatrogenic metabolic derangements, e.g., dysglycemia and fluctuations in blood pressure. The situation in African region is that most of the patients with NCDs come to the health system with complications due to poor control/management or lack of diagnosis.⁶

At times environmental factors facilitate the spread of both communicable disease and NCDs.⁷ Air pollution, smoking and urbanization play a role in the pathogenesis of not only upper and lower respiratory infections, but COPD, hypertension, coronary artery disease (CAD) and cancer as well.

SIMULTANEOUS, NOT SEQUENTIAL

Prevention of both communicable disease and NCD is equally important to ensuring optimal health.¹ People with NCDs; however, utilize a disproportionately higher share of health care facilities than their peers without NCDs.⁸ Because of their immunocompromised status they fall prey more often to acute infections. In turn these precipitate inflammatory and metabolic complication, which may require hospitalization for management. Various drugs used to treat communicable diseases such as corticosteroids in COVID-19, may lead to iatrogenic NCD complications such as diabetes.⁹ Hence, prevention and control of NCDs contribute to communicable disease prevention as well.

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LIMITED RESOURCES, UNLIMITED RESILIENCE

Resources for health care are always finite, and need to be utilized parsimoniously. NCD prevention and care can be integrated in existing health care programs to improve the quality of care, while minimizing extra cost. Examples include screening for diabetes in people with TB and HIV, for hypertension and CAD in people presenting at menopause and for COPD in adults with repeated visits for respiratory tract infection.

Personnel involved in NCD management can contribute to comprehensive health care coverage, too. Blood glucose measurement can be clubbed with hemoglobin estimation, and public health awareness messages against smoking may be linked to those focused on dengue and malaria prevention. An umbrella campaign on environmental stewardship can incorporate preventive measures for both communicable disease and NCDs. Due to lower rates, some efforts against HIV have moved from mass/universal to targeted screening meanwhile for NCDs, mass screening is still preferred. HIV screening can be made optional (offered) in NCD screening campaigns while highlighting target groups for screening at same campaigns.¹⁰ This will facilitate timely diagnosis for HIV. Such linkages make the health care system more resilient and prepare it to handle future challenges effectively.

ADVOCACY: THE NEED TO BE HEARD, THE NEED TO HEAR

NCD care still does not receive the attention it deserves in many countries. Advocacy for NCDs is important, so as to draw the required resources to prevent and manage NCDs.¹¹ The public's need to be heard has to be fulfilled, by those who need to hear-the policymakers and planners. This conversation should be bidirectional: NCD management should take place within available resources, should not disregard acute health care needs and should promote resource-building and resilience in the community.

The Africa NCDs Network (ANN) is an example of an organization, which seeks to hear and be heard, to encourage simultaneous (not sequential) NCD care, and promote resilient resourcefulness in communities across the continent. The ANN was conceived in 2015 and it took off in 2020 with a 4-person secretariat spread across the east, west, center and southern African sub-regions. In coordination among its members, the ANN has researched on the needs, challenges and concerns of African people living with NCDs and collaborated

with the Global NCD Alliance to develop the global charter on meaningful involvement of people living with NCDs, currently working on the Advocacy Agenda of African People living with NCDs¹² to further build a continent that is responsive to NCDs as it has been to infectious diseases over the years.

FROM ADVOCACY TO ACTION

Advocacy for NCDs is meaningful only if it is accompanied by action. Kickstarting programs on NCD care, and integrating screening/diagnostic/management activities with existing health care services should be done in a cautious and sustainable manner. The opportunity provided by COVID-19 and long COVID-19,¹³ in terms of attention to public health, should be utilized to enhance NCD prevention and management. Our focus should be on prevention, advocacy and action, and our target should be the control of NCDs, so that we can achieve our goal of health for all.

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Mosaic Loss of Y Chromosome Enhances Heart Failure and Cardiac Fibrosis Risk in Aging Men

According to a study, published in the *American Association for the Advancement of Science (AAAS)* mosaic loss of Y chromosome, or mLOY increases the risk of developing heart failure and cardiac fibrosis in men as they age. Additionally, it was observed that neutralizing antibodies could change some of these cardiac impacts caused by mLOY. Increased mortality, cardiovascular disease and other age-related illnesses have been connected to mLOY in blood cells, which is the most commonly acquired mutation in the male's genome. But, the relationship between mLOY and pathogenesis has not yet been proved. Hence to study the link, the scientists designed a mouse model of hematopoietic mLOY in their bone marrow with cells lacking the Y chromosome. The mLOY macrophages from the bone marrow that penetrate the heart cause high levels of transforming growth factor-1 (TGF-1) activation, which accelerates the fibrosis of the cardiac tissue. It has been demonstrated that treatment with a TGF-1 neutralizing antibody can lessen these negative effects.

Additionally, a prospective study in human patients revealed that people with mLOY in blood were also at an increased risk for cardiovascular dysfunction and associated mortality which supports the results from the mouse model which states the importance of the Y chromosome in preserving a healthy innate immune system, but more studies are needed to clarify the mechanisms. (Source: *News-medical.net*; July 16, 2022)

Maharashtra Health Department Prioritizes the Use of Vaccine Doses Nearing Expiry

The Maharashtra state health department has instructed the district administrations to administer the Covishield and Covaxin doses nearing the expiry date on priority.

According to state statistics, over 27 lakh Covishield doses and 5,890 Covaxin doses are expected to expire by September. The state presently has access to 27 lakh doses of Covishield and 34 lakh doses of Covaxin.

In a letter to the district offices, Dr Nitin Ambadekar, the Additional Director of Health Services, suggested ensuring the use of all doses of the COVID-19 vaccine nearing expiry by the end of September on priority during the 75-day "COVID Vaccine Amrut Mahotsav", which began on 15th July and was providing free precautionary doses to adults at government vaccination facilities. A total of 9,037 precautionary doses were provided in the Pune district up to 5 pm on the first day of the COVID Vaccine Amrut Mahotsav, while 1,02,692 doses were given throughout the state. (Source: *ETHealthWorld*, July 16, 2022)

Pimavanserin Linked to Lower Mortality among Elderly with Parkinson's Psychosis

The American Journal of Psychiatry published a study revealing pimavanserin use was linked to lower mortality than atypical antipsychotics over other therapies for older persons with Parkinson's disease (PD) psychosis. The study included patients with PD who were treated with pimavanserin (n = 3,227) or an atypical antipsychotic (n = 18,442) between April 2016 and March 2019. Pimavanserin's relative protective effect was seen in 85% of the trial population among PD patients living in the community—but not in the 15% of patients who were hospitalized.

Mortality was almost 35% lower in the first 180 days of treatment for pimavanserin users compared to atypical antipsychotic users (HR, 0.65; 95% CI, 0.53-0.79). In nursing home patients, pimavanserin did not exhibit a mortality advantage. (Source: *Medscape* - Jul 15, 2022)