Impact of Coronary Heart Disease on World Leaders
Alyce M. Girardi, MD; Leslie R. Pyenson, MD; Jon Morris, PhD; and Francis X. Brickfield, MD

Background: Previous studies have shown that from 1965 to 1996, coronary heart disease was a frequent natural cause of death among world leaders.

Objective: To assess incidence of and death from coronary heart disease among world leaders and to determine the effect of this disease on office-holding ability.


Setting: U.S. federal government medical analytic unit.

Participants: National principal decision makers in countries with populations greater than 250,000.

Measurements: Reports of angina, heart attack, myocardial infarction, and arrhythmia attributed to coronary artery disease; use of cardiac procedures; receipt of foreign care; death; and removal from office.

Results: 64 leaders had initial coronary heart disease events while holding their nation’s highest office. Initial event rates decreased from the 1970s to the 1990s (1.9 events per 100 person-years vs. 1.1 events per 100 person-years). Survival, use of procedures, and receipt of foreign care increased over time. Most leaders who survived an acute event continued to function in office.

Conclusions: Incidence of and death from coronary heart disease among office-holding world leaders has decreased over the past 30 years, possibly because of increased use of cardiac procedures. A coronary event in a world leader is unlikely to presage a change in government.

A heart attack in a world leader is a dramatic occurrence that usually results in immediate incapacitation, press commentary on political maneuvering, and speculation about succession. An earlier study by our group showed that cardiovascular disease was the most frequent natural cause of death among world leaders and that mortality patterns of leaders who died of natural causes are similar to those seen in U.S. men (1). To expand on these findings, we wanted to gain a more in-depth understanding of the incidence, treatment, and implications of acute cardiac events among world leaders and the ways in which such events affect governance.

Methods
We identified world leaders (as defined by Bienen and Van de Walle [2]) who were in office between 1 January 1970 and 31 December 1999 and had a coronary heart disease event (angina, heart attack, arrhythmia, or myocardial infarction), as reported in the media. We confirmed media reports by using all of the available information resources in our archives, which include translated media reports from every capital city in the world. The principal decision maker was defined as the head of government but not necessarily the head of state by title. We included leaders from all countries with a population of at least 250,000. During the study period, the number of leaders varied from 142 to 166 per year; the dissolution of the Soviet Union and other international events led to an increase in the number of world leaders over the 30-year period (3–5). When information was available, we identified each leader’s publicly reported treatment for the acute event (coronary artery bypass, angioplasty, or thrombolytic therapy) and determined whether the leader received cardiac care outside his or her native country. We then calculated event incidence, mortality rate, and the percentage of leaders who were in office 1 year after an event. Finally, we constructed Kaplan–Meier curves to compare survival among the cohorts from each decade.

Results
From 1970 to 1999, 115 leaders were identified as having a coronary heart disease event. Of these, 64 had their first event while holding their country’s highest office (Table). We identified 27 such leaders in the 1970s, 19 in the 1980s, and 18 in the 1990s, all of whom were men. Age at the time of the event ranged from 43 to 88 years. The average age at the time of the heart attack in a world leader is a dramatic occurrence that usually results in immediate incapacitation, press commentary on political maneuvering, and speculation about succession. An earlier study by our group showed that cardiovascular disease was the most frequent natural cause of death among world leaders and that mortality patterns of leaders who died of natural causes are similar to those seen in U.S. men (1). To expand on these findings, we wanted to gain a more in-depth understanding of the incidence, treatment, and implications of acute cardiac events among world leaders and the ways in which such events affect governance.

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event was 64.1 years during the 1970s, 62.6 years during the 1980s, and 63.6 years during the 1990s. Sixty-one of 64 events were reported as hospitalization for acute myocardial infarction. The average age per decade did not differ significantly. Almost all leaders during the study period were men.

Incidence, mortality rate, functional outcome, use of invasive cardiac procedures, and use of foreign care changed during the past three decades for world leaders who had a coronary heart disease event. The incidence of coronary heart disease for leaders was lower in the 1990s than in the 1970s (1.1 events per 100 person-years vs. 1.9 events per 100 person-years). Death from coronary artery disease in world leaders also decreased (Figure). Mortality rate during the first year after myocardial infarction was highest during the 1970s, when 14 of 27 leaders (52%) died during the acute event or within 1 year. During the 1980s, 6 of 19 leaders (32%) died during the acute event or within 1 year; during the past decade, none of the leaders identified as having an initial coronary heart disease event while in office died within the first year.

After a short period of incapacitation for treatment of the acute illness, most world leaders who survived a coronary heart disease event returned to power. During the 1970s, 11 of 27 leaders (41%) were in office 1 year after myocardial infarction; only 4 of 27 leaders (15%) survived more than 10 years. Of the leaders who had a myocardial infarction in the 1980s, 13 of 19 (68%) were in office 1 year later and 10 of 19 (53%) lived for more than 10 years. During the 1990s, all of the leaders who had a coronary heart disease event while in office remained in office for at least 1 year, and 17 of 18 (94%) are still alive. However, the average elapsed time since the initial event is only 4.1 years for this cohort. When poorer outcomes in leaders who had a coronary heart disease event during the 1970s were included, 42 of 64 leaders (66%) survived more than 1 year after the event and remained the principal decision maker for their respective countries.

We found no reports of invasive cardiac procedures or foreign care during the 1970s. The number of leaders who had an intervention, received foreign care, or both increased during the 1980s and 1990s. In the 1980s, 12 of 19 leaders (63%) who had a coronary heart disease event underwent an invasive cardiac procedure and 7 of 19 (37%) received foreign care. Of the 18 leaders who had an acute myocardial infarction during the past decade, 14 (78%) had an invasive cardiac procedure and 8 (44%) received cardiac care outside their native country.

**DISCUSSION**

We studied trends in coronary heart disease in world leaders over the previous 30 years, a period marked by the identification of major cardiovascular risk factors.
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BRIEF COMMUNICATION

Our analysis indicates that death from coronary heart disease among principal decision makers is becoming rare. This observed downward trend began in the 1980s, when the percentage of leaders undergoing interventional treatment during the acute coronary event increased. This inverse relationship suggests that invasive cardiac care is a major contributor to the downward trend in mortality among principal decision makers over the past 20 years.

Longevity after a myocardial infarction in world leaders has also increased in the past two decades. Most leaders who survive the acute illness live for more than 10 years. Over the past decade, world leaders who had an acute infarction did remarkably well, with 17 of 18 (94%) still alive. Our data suggest that this group will probably exhibit the best survival characteristics of the three cohorts we studied. Factors influencing improved long-term survival may also include close medical follow-up, use of newer medications known to prevent reinfarction, and possibly reduction of risks through secondary prevention. We do not have enough information on this cohort to ascertain how often these factors come into play.

Our study is limited by its reliance on media reporting of events for inclusion in the study cohort. We made every effort to verify the accuracy of press information and included only those reports for which we could identify reliable sources of information. We may have underestimated disease frequency because governments may have misrepresented a cardiovascular event as an episode of influenza, a common occurrence in the former Soviet Union during the Cold War. Overestimation seems less likely, since governments are loath to present leaders’ health problems as more serious than the situation warrants. In either case, concealing a prolonged hospitalization for a major illness is difficult in all but the most restrictive societies. A leader must appear publicly while leading, and governments must account for the whereabouts of leaders or face loss of credibility. Reliance on nonmedical, media-reported descriptions of coronary artery disease also had limitations. For example, before assuming office, some leaders may have had episodes of coronary heart disease that did not become public knowledge, and some episodes described as heart attacks may have been other types of disease. Furthermore, because our tabulation of specific treatments was limited to details given in the press, a procedure that did not involve lengthy recuperation might have been missed. Leaders and their inner circles have incentives to conceal episodes of ill health because such episodes can

factors, more vigorous and effective treatment of the acute episode, and increased efforts at secondary prevention in some western populations. These efforts have resulted in improved coronary heart disease outcomes in general populations, especially in the United States (6).

It is common knowledge that principal decision makers receive the best medicines, technology, and professional services that their countries can offer or import. Usually, they can also travel to the best institutions in the world when required. No studies have evaluated the effect of this medical attention on trends in coronary heart disease and outcomes in this unique population. Many countries only recently began to experience a downward trend in death from coronary heart disease in the general population, and the trend is still upward in eastern European countries (7). In addition, recently published results from the World Health Organization MONICA (Monitoring Trends and Determinants in Cardiovascular Disease) project showed that incidence, treatment, and outcome of acute coronary heart disease events varied widely between and even within countries (8). For these reasons, regional- or country-specific data on coronary heart disease may not reliably reflect patterns of care and outcomes for leaders.

Our data indicate that the incidence of coronary heart disease events in sitting heads of government declined globally over the past 30 years. At current rates, one to two world leaders per year will have a coronary heart disease event, most likely a myocardial infarction. This incidence is similar to that seen in U.S. men followed in the Framingham Heart Study (2.1 per 100 person-years among those 55 to 64 years of age) (9). Access to medical care may account, in part, for this similarity. Since medical care tends to be very good for those at the highest levels of government, we speculate that increased primary prevention—readier treatment of such risk factors as diabetes, hypertension, and cholesterol levels—may be an important factor in the decreased incidence. We have incomplete information on the presence of these risk factors and on the percentage of world leaders who smoke, but since higher socioeconomic class is inversely correlated with cigarette smoking (in the West), we suspect that smoking may also be less common among leaders.

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create the impression that the leaders are no longer capable of governing. Our data suggest that this impression is not usually valid in the case of coronary heart disease.

The advances in cardiology made in western countries over the past 30 years are used throughout the world to care for leaders and may have conferred significant benefit. We conclude that primary and secondary intervention, as well as aggressive treatment of acute coronary heart disease, contributed to improved outcomes. World leaders are a robust group and have a low rate of coronary heart disease events. Our data suggest that the incidence rates of coronary heart disease in world leaders over the past decade are similar to those reported in the Framingham Heart Study. After myocardial infarction, leaders are likely to have a procedural intervention, and those who survive the acute coronary heart disease event tend to return to work. Over the past two decades, most leaders who had a coronary event remained in power substantially longer than 1 year, and few departed office for health reasons. Policymakers should not regard news of a myocardial infarction in a head of government with great apprehension. The most probable result will be short-term disability but no major change in governance.

From the Central Intelligence Agency, Washington, D.C.

Disclaimer: This paper has been reviewed by the Central Intelligence Agency (CIA). That review neither constitutes CIA authentication of information nor implies CIA endorsement of the authors' views.


References